Editorial

The editors of FULL are pleased to welcome you to the third volume of FULL. Our journal is meant to provide a platform for linguistic research on modern and older Finno-Ugric or other Uralic languages and dialects, comparative research as well as research on single languages, with comparison of just Finno-Ugric languages or comparison across family lines, with formally or empirically oriented papers.

The present issue contains two papers: One is on quotative inversion in Hungarian. It is modestly titled 'A note on Quotative Inversion in Hungarian', but is actually a highly detailed study of quotative inversion in Hungarian viewed in a comparative perspective. The other paper is titled 'Syntax in the 21th century, Reflections on *The Bloomsbury Companion to Syntax*'. It is a review article (the first such article published by FULL) but as the title suggests, it is more than a review, containing a set of reflections on the state of syntactic research. A note and some reflections: We think that you will find them very interesting.

We wish to thank all the anonymous reviewers who generously lent their time and expertise to make sure that each submission is carefully vetted and fairly assessed. Their constructive criticism ensures the consistently high quality of our contributions.

Our papers can be freely accessed and downloaded without any need for prior registration. At the same time, those whoregister, or have already registered, are provided with the benefit of getting notified of new issues, calls, etc. via the occasional email. FULL welcomes manuscripts from all the main branches of linguistics, including phonology, morphology, syntax, semantics and pragmatics, employing a diachronic or synchronic perspective, as well as from first language acquisition and psycholinguistics. Whatever the theoretical or empirical orientation of the contributions may be, our leading principle is to maintain the highest international standards.

The Editors

A Note on Quotative Inversion in Hungarian[*]

Hans-Martin Gärtner & Beáta Gyuris

It will be argued that Quotative Inversion (QI) in Hungarian, i.e., inversion of the finite verb and a verbal modifier within a reporting clause, requires incorporation of an abstract operator, Op_Q, into Pred°. This accounts among other things for the fact that Hungarian QI is incompatible with unbounded dependency formation, i.e., incompatible with Op_Q placement in Spec,FocP. The overall head initiality of clauses undergoing QI will be derived in two steps. First, a PF-linearization mechanism in the spirit of Fox and Pesetsky (2005) guarantees strictly Pred°-initial PredP. Second, information structural impoverishment "shuts down" TopP and FocP, the phrases dominating PredP. The latter idea will be grounded in particular assumptions about the narrative force of QI constructions. Op_Q will be argued to be a covert counterpart of overt demonstratives incorporated into the Hungarian verb *mondja* (˚say˚). A semantics of demonstrative incorporation is shown to shed interesting light on exhaustive interpretation in the presence of communication predicates having undergone QI. Considerable efforts are made to weigh the language-specific choices for the analysis of Hungarian against the options available for deriving varieties of QI in languages like English, French, Spanish, and Dutch, as our analysis is developed against the backdrop of the approaches by Collins and Branigan (1997), Collins (1997), Suñer (2000), and de Vries (2006).

Keywords: *Inversion, reported direct speech, parentheticals, demonstratives, information structure*

1   Introduction

Quotative Inversion (QI) occurs in English when a quote (Q), i.e., a passage of reported direct speech, immediately precedes or encloses a reporting clause (RC).[1] As shown in (1), inversion in English affects the order of subject and main verb within RC.

(1) a.   *"As falls Wichita, so falls Wichita Falls" said Pat*
     b.   *"As falls Wichita," said Pat "so falls Wichita Falls"*

Notably, English QI is optional, as illustrated in (2).

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[1]   On a more general approach the term "reported direct speech" has to be replaced by "(re)presented direct speech and thought." We will not deal with what Bonami and Godard (2008) call (represented) "behaviors" like, for example, sound emission (*"Pshhhh" went the balloon*).

Recent overviews over varieties of quotation are given by Cappelen and Lepore (2007, chapter 2) and Brendel, Meibauer and Steinbach (2011). In this paper we will have nothing to say about "pure quotation" (*"Boston" has six letters*) or "mixed quotation" (*Quine said that quotation "has a certain anomalous feature"*), both of which come with "standard syntax."

(2) a. *"As falls Wichita, so falls Wichita Falls"* Pat said
  b. *"As falls Wichita,"* Pat said *"so falls Wichita Falls"*

When Q follows RC as in (3), inversion as in (3b) is fairly marked, mostly belonging to "journalistic" registers (Quirk et al. 1985, 1024, fn.[c]).

(3) a. *Pat said: "As falls Wichita, so falls Wichita Falls"*
  b. *Said Pat: "As falls Wichita, so falls Wichita Falls"*

More recent formal studies of QI in English have been provided by Collins and Branigan (1997), Collins (1997, chapter 3), Suñer (2000), Barra-Jover (2004), and Branigan (2011, 3.1), and varieties of QI in other languages have been studied formally by de Vries (2006; 2008) [Dutch], Holmberg (1986, 4.4.3.4) [Swedish], Collins and Branigan (1997), Doeleman (1998), Barra-Jover (2004), and Bonami and Godard (2008) [French], Suñer (2000) [Spanish], Matos (2013) [Portuguese], and Barra-Jover (2004) [Russian].

Hungarian, our main object of study, likewise possesses a variety of QI, as has been noted among others by Fónagy (1986). Formally, QI in Hungarian involves inversion of the finite verb and a "verbal modifier" (VM) within the RC. The set of VMs contains predicate forming items (cf., e.g., É. Kiss 2002, chapter 3; Komlósy 1994, section 4) such as bare nouns, PPs, and verbal particles. An instance of the latter is *el* in example (4).[2]

(4) a. *"Kedden   sikerült   a vizsgám"   mondta el   János*
       Tuesday.on succeeded the exam.my said   VM   John
       '"On Tuesday I passed my exam" said John'
  b. *"Kedden sikerült" mondta el János "a vizsgám"*

In contrast to English, QI in Hungarian is obligatory and no counterpart to (3b) exists. This is shown in (5).[3]

(5) a. * *"Kedden sikerült a vizsgám" elmondta János*
  b. * *"Kedden sikerült" elmondta János "a vizsgám"*
  c. * *Mondta el János: "Kedden sikerült a vizsgám"*

Starting point for our discussion will be two assumptions made in the literature on the formal syntax of QI. These are stated in (6):

(6) a. QI involves an A'-(moved-)operator, Op_Q (Collins & Branigan 1997, 10f.)
  b. Op_Q is placed in Spec,FocP (Suñer 2000, 541f.)

According to (6a), the RC of QI contains some hidden structure such that *said Pat* in (1) corresponds to the (internally complex) constituent [Op_Q *said Pat*]. In addition, (6b)

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[2] We agree with an anonymous reviewer that the split of Q in (4b) is more natural if the second part of Q is heavier, such as in *életem legnehezebb vizsgája* ('the most difficult exam of my life'). We translate the verb *elmond* with English 'say,' since the slightly more adequate 'tell' is not very idiomatic if used in simple transitives. The German verb *erzählen* would capture *elmond* more directly.

[3] By orthographic convention, verbal particles and main verbs are written together when the former immediately precede the latter. This leads to forms like *elmondta* in (5a) and (5b).

requires that within RC, Op_Q occupy the specifier of FocP, a functional projection hosting focused constituents (cf., e.g., Rizzi 1997).

Working out the details of the picture just sketched for Hungarian will be our task in Section 2. As we will find there, the resulting analysis faces three main obstacles: (i) Op_Q does not enter into unbounded (A'-)dependencies, (ii) Op_Q does not license additional postverbal foci, and (iii) QI does not come with the exhaustive interpretation associated with Hungarian preverbal focus. Section 3 will therefore replace Op_Q-in-Spec,FocP by Op_Q-in-Spec,PredP and assimilate QI to VM placement. This approach meets all three objections from Section 2. In addition it correctly predicts that Hungarian QI occurs in "VM-climbing" environments. On the other hand, the Op_Q-in-Spec,PredP approach makes the incorrect prediction that manner adverbials, standardly taken to adjoin to PredP, should be able to occur RC initially. In Section 4 this will be taken care of by assuming Op_Q-to-Pred° incorporation instead of Op_Q-in-Spec,PredP. While preserving the advantages the latter approach has over the original Op_Q-in-Spec,FocP, incorporation is able to feed a linearization mechanism in the spirit of Fox and Pesetsky (2005) that enforces initial position within PredP of the complex Op_Q-Pred° head at Spell-Out. In favor of incorporation it will be argued that Op_Q is an abstract demonstrative resembling *úgy* ('so') in *úgymond* ('so s/he says') and *azt* ('that') in *aszongya* ('s/he says that'), i.e., in canonical heads of RC of older and contemporary Hungarian (Section 4.1). Section 5 turns to cross-linguistic comparison and shows how the overall head initiality of Hungarian RCs can be derived from information structural impoverishment leading to "shut-down" (inaccessibility) of TopP and FocP. Section 6 summarizes our findings. Two appendices provide further background for the analysis. Appendix A lays some illocutionary foundations for the information structural analysis in Section 5 and links the obligatoriness of Op_Q-to-Pred° incorporation and concomitant head initiality to clausal typing. Appendix B provides a semantics for demonstrative incorporation modeled structurally on noun incorporation with the additional property of introducing token-indexicality into the RC predicate. This opens up the independent possibility of deriving exhaustive interpretation of Q.

2   Quotative Inversion and Op_Q-in-Spec,FocP

Adopting the assumptions in (6) for the analysis of QI in Hungarian makes a lot of initial sense, given that (narrowly) focused constituents in Hungarian have regularly been argued to occupy a specific preverbal functional projection (cf., e.g., Brody 1990).[4] And, crucially, preverbal focus triggers inversion of the finite verb and VM.[5] Consider first a standard subject initial declarative clause of Hungarian without any narrow focus:[6]

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[4]   Alternatives have more recently been explored by, e.g., Surányi (2004, 2011, 2012) and Horvath (2009).

[5]   With infinitival verbs, focus-induced inversion is optional (cf. Brody 1990). Since QI occurs in root clauses only (see Appendix A), one has to inspect direct speech in combination with Hungarian root infinitives, the latter described by Bartos (2002). It turns out that of the two types, the deontic variety is unable to serve as RC. This can be explained as an incompatibility with the kind of narrative force involved in QI (see Appendix A). At the same time, "circumstantial" root infinitives do occur as RCs, as shown in (i):

(7) a. *János bemutatta Pétert Marinak*
    John VM.introduced Peter.ACC Mary.to
    'John introduced Peter to Mary'

b.
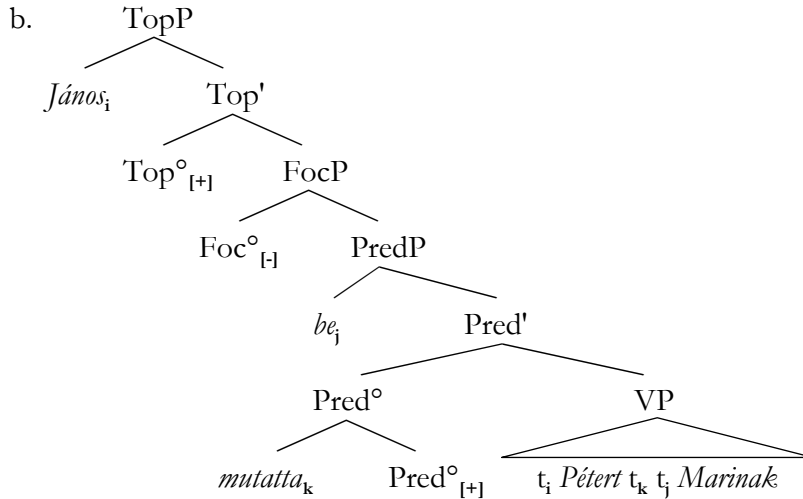
Here FocP is empty and the subject is "topicalized" to Spec,TopP.[7] Default "non-inverted" order of VM and the finite verb is a consequence of their being hosted by Spec,PredP and Pred°, respectively. Focus Inversion (FI) results from Pred°-to-Foc° promotion of the main verb, accompanied by placement of the focused constituent in Spec,FocP. This is shown in (8).[8]

(8) a. *János PÉTERT mutatta be Marinak*
    'John introduced PETER to Mary'
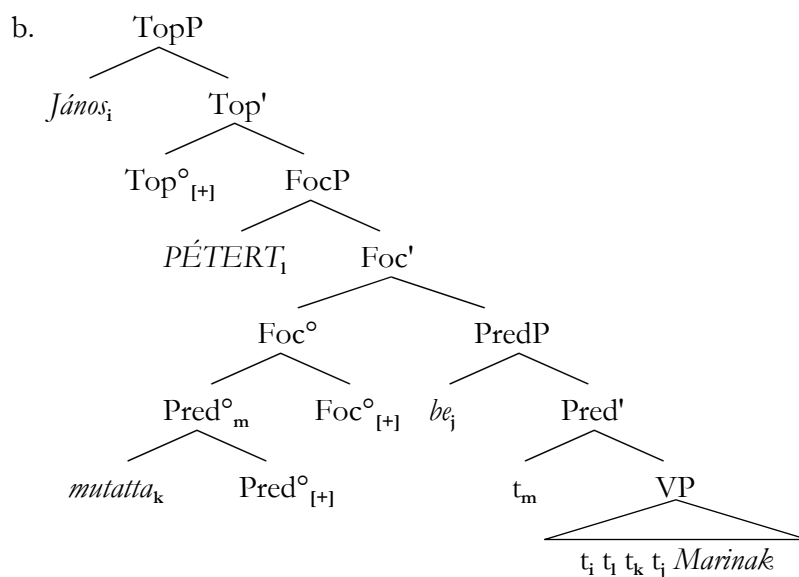

(i) *"Micsoda meglepetés!" hallani ki tisztán*
    what.kind surprise   hear.INF VM clearly
    '"What a surprise!" can be heard clearly.'

Curiously, RC has to be strictly verb initial here too, i.e., neither the manner adverb nor the verbal particle can appear preverbally. To keep things simple, we disregard this construction in the following.

[6] For a general background on Hungarian syntax, see the overview by É. Kiss (2002) and references cited there. Except for some sketchy remarks in footnotes, we won't have anything to say about the fine structure of "VP".

[7] We use subscripted [+] to indicate that a syntactic functional head "attracts" a constituent into its specifier and/or another head into head-adjoined position.

[8] In the presence of narrow focus in Spec,FocP, VM-to-Spec,PredP movement might be optional. This would follow if VM-in-Spec,PredP could be assumed to trigger aspectual effects like perfectivization (cf., e.g., É. Kiss 1994, 7.2, where such a case is argued for "verbal prefixes").

b.

```
                    TopP
                   /    \
            János_i      Top'
                        /    \
                  Top°_[+]    FocP
                             /    \
                      PÉTERT_l     Foc'
                                  /    \
                             Foc°       PredP
                            /    \      /    \
                    Pred°_m  Foc°_[+]  be_j   Pred'
                    /     \                   /    \
             mutatta_k  Pred°_[+]          t_m      VP
                                                   /  \
                                         t_i t_l t_k t_j Marinak
```

Consequently, the analysis of Hungarian QI will look like (9). Only the RC is given here.

(9)

```
                    TopP
                   /    \
            Top°_[-]      FocP
                         /    \
                    Op_Q       Foc'
                              /    \
                         Foc°       PredP
                        /    \      /    \
                 Pred°_k  Foc°_[+]  el_j   Pred'
                 /     \                  /    \
           mondta_i  Pred°_[+]         t_k      VP
                                               /  \
                                          János t_i t_j
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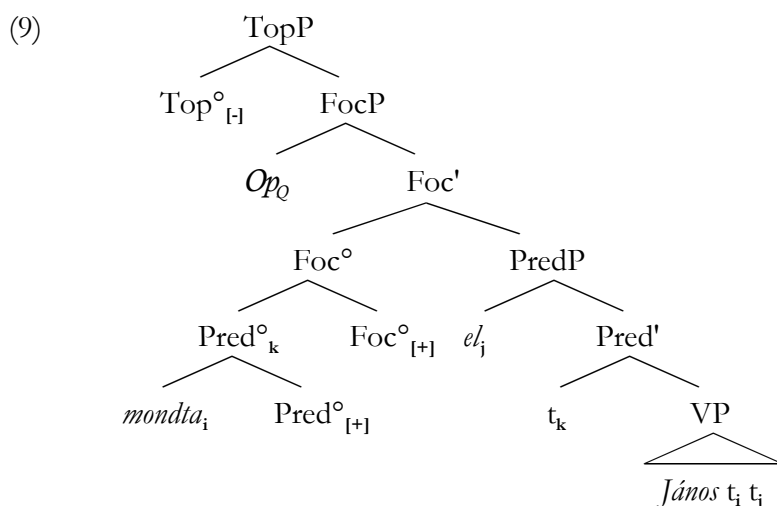
We follow among others Banfield (1982, 42), Collins and Branigan (1997, 11) and de Vries (2006, 220) in assuming that the relation between RC and Q is (analogous to) that of a parenthetical and its host. The syntactic details of this shall not concern us here, though,[9] except for noting that such an analysis correctly makes the prediction that RC cannot be discontinuous (Bonami & Godard 2008, 9; de Vries 2006, 215). This is illustrated in (10).[10,11]

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[9] Work on the kind of "integrated parentheticals" we have in mind has been provided, among others, by Reis (2002), Fortmann (2007), and Steinbach (2007). Bonami and Godard (2008, 6) observe that the possibility of "niching" RC depends on the internal analyzability of Q, absent in the case of represented "behaviors" such as, for example, * *"Pshhhh," went the balloon, "shhhh"*.

[10] Discontinuous RCs can, however, be found in Latin literary texts, as documented by Kieckers (1913). It is not clear whether such cases can still be treated as (varieties of) parenthetical RCs or have to be analyzed as main clause RCs with Q integrated into object position. The latter seems to be a common strategy for dealing with reported direct speech in (more strictly) "verb final" languages, such as Turkish (Kornfilt 1997, 2) and Japanese (Coulmas 1985, 56f.).

(10) * *"Kedden   sikerült"   mondta el   János   "a vizsgám"   a barátainak*
        Tuesday.on succeeded said   VM John   the exam.my the friends.his.DAT
        '"On Tuesday I passed my exam" said John to his friends'

However, the analysis of QI in terms of Op_Q-in-Spec,FocP makes a number of specific predictions, which, importantly, are not borne out. These predictions concern (i) exhaustive interpretation, (ii) the formation of unbounded dependencies, and (iii) the licensing of postverbal focus.

   (i) Assimilating QI to FI, i.e., involvement of focusation, predicts an exhaustivity effect. Thus, as has originally been observed by Szabolcsi (1981a, 1981b), Hungarian preverbal focus comes with exhaustive interpretation. Consider (11).

(11) #   *A parlament   a médiatörvényt   szavazta meg,*
          the parliament the media.law.ACC   voted   VM
          és   az alkotmányt   is   megszavazta
          and the constitution.ACC also VM.voted
     (#) 'It was the media law the parliament voted for,
          and it also voted for the constitution'

According to the characterization by Krifka (2008, 259), exhaustive focus "indicates that the focus denotation is the only one that leads to a true proposition, or rather more generally: that the focus denotation is the logically strongest that does so." Logical strength is definable in terms of entailment: p is logically stronger than q iff p entails q and q does not entail p.[12] Thus, (11) is odd because due to narrow focus on *a médiatörvényt* ('the media law'), its first conjunct presents *VOTE.FOR(p,ml)* as the logically strongest truth about parliamentary voting (in that situation), while the overall sentence asserts the logically stronger *VOTE.FOR(p,ml)* & *VOTE.FOR(p,c)*. (12) formulates the exhaustivity constraint that (11) violates in terms of exclusion of alternatives.[13]

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[11]   In addition, the analysis in (9) avoids a specific problem concerning the syntax of clause combining in Hungarian. As shown by Kenesei (1994, 330; cf., Szabolcsi 1981, 516), full clauses are banned from the focus position:

(i) a. * *Ervin csak* [DP *azt* [CP *hogy Emma   megérkezett*]] *tudta*
           Ervin only   that   that Emma VM.arrived   knew
    b. * *Ervin csak* [CP *hogy Emma megérkezett*] *tudta*
    c.   *Ervin csak* [DP *azt* t$_i$] *tudta* [CP *hogy Emma megérkezett*]$_i$
         'The only thing Ervin knew was that Emma had arrived'

As illustrated in (ic), focusing a full clause is done by placing an expletive, namely, the demonstrative *azt*, in Spec,FocP and "extraposing" the associated CP. Now, given that it isn't the reported clause but Op_Q that would occupy Spec,FocP in QI, nothing special has to be said: QI observes the same constraint. Kenesei (1994, 331f.) provides a prosodic account of the facts in (i) based on work by, a.o., Vogel and Kenesei (1987). The issue is also briefly addressed by É. Kiss (2002, 231). We will have more to say about demonstratives in Section 4 and Appendix B.
[12]   Krifka (1995) provides a generalized version of this and applications.
[13]   Subscripted "(11)" indicates that we assume the computation of alternatives to be sensitive to the particular context of utterance. We take no stance on the recent debate on how exactly exhaustive interpretation triggered by Hungarian focus comes about, i.e., on whether it is built into the semantics or results from (defeasible) inferential mechanisms. A case for the latter perspective has been made by Wedgwood (2005, 2007, 2009) and Onea and Beaver (2011).

(12) $\neg\exists x \in \text{ALT}_{(11)}(\text{ml}) [x \neq \text{ml} \wedge \text{VOTE.FOR}(p,x)]$

Now, crucially, the same effect does not arise in the case of QI. This is shown in (13), which is unobjectionable.

(13) *"Tizenöt éves koromban elmentem otthonról"*   *mondta el   Béla*
      fifteen   years age.my.in VM.went home.from said   VM   Béla
      és   ezt   is   elmondta: "egy gyárban   kezdtem el   dolgozni"
      and that also VM.said   a factory.in started   VM   work.INF
      ʿ"When I was fifteen years old I left home" said Béla,
       and he also said: "I (then) started to work in a factory"ʾ

Thus, QI in RC of the first conjunct is clearly compatible with (14):[14,15]

(14) $\exists x \in \text{ALT}_{(13)}(^\ulcorner Tizenöt\ éves\ ...^\urcorner) [x \neq {}^\ulcorner Tizenöt\ éves\ ...^\urcorner \wedge \text{SAY}(b,x)]$

(ii) As is familiar from earlier studies (e.g., É. Kiss 1987, Horvath 1985), Spec,FocP must be able to serve as landing site for long-distance operator movement. However, while focused constituents are able to enter into unbounded dependencies, Op_Q isn't. This is shown in (15).[16]

(15) a.   *EZT A BUTASÁGOT ismerte   be   János, hogy mondta*
         this   the stupidity.ACC admitted VM John that said
         'THIS STUPIDITY, John admitted that he had said'
     b. * *"Elloptam   az ékszereket" ismerte   be   János, hogy mondta*
          stole.1SG   the jewels.ACC admitted VM John that said
          '"I stole the jewels" John admitted that he had said'

(iii) As illustrated in (16), focused constituents in Spec,FocP license additional postverbal *csak*-(ʻonly'-)NPs (cf., É. Kiss 1998, 262) while Op_Q doesn't.

(16) a. * *János bemutatta   Pétert   csak   Marinak*
         John VM.introduced Peter.ACC only   Mary.to
         'John introduced Peter only to Mary'
     b.   *PÉTERT mutatta be János csak Marinak*
         'It is Peter that John introduced only to Mary'
     c. * *"Sikerült a vizsgám" mondta el csak János*
         '"I passed my exam" said only John'

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[14] For the semantics of utterance terms, i.e., the expressions in "corner quotes," we follow Potts (2007). See Appendix B for the details.

[15] Quite analogously, QI in German does not come with the kind of contrastiveness (or "emphasis") otherwise found in argument inversion environments, as has been documented by, e.g., Frey (2010). Section 5 provides reasons to believe that "fronted" Q is not licensed as givenness or aboutness topic either.

[16] In this respect, Hungarian patterns with English (* *"What next?", swore Michelle that Marcel asked*)(Collins & Branigan 1997, 12), and differs from Spanish (Suñer 2000, 546) and Dutch (de Vries 2006, 220).

The contrast between (16a) and (16b) indicates that a postverbal *csak*-NP requires a (narrowly) focused constituent in Spec,FocP (cf. É. Kiss 2002, 90f.). Clearly, Op_Q cannot serve that function, which rules out (16c).

We take these three substantial divergences between FI and QI as sufficient motivation for doubting the Op_Q-in-Spec,FocP approach and exploring an alternative.[17]

3   Quotative Inversion and Op_Q-in-Spec,PredP

The finite verb and a VM can also occur in inverted order when there is more than one VM. (17) exemplifies a case where a verbal particle ends up in postverbal position because Spec,PredP is preempted by a PP functioning as secondary predicate.
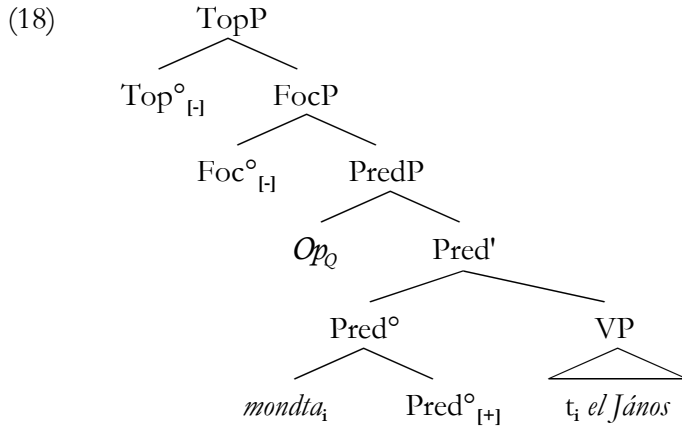
(17) a. *Mari pirosra   festette   be   a kerítést*
          Mary red.onto[VM] painted   VM   the fence.ACC
          'Mary painted the fence red'

      b.
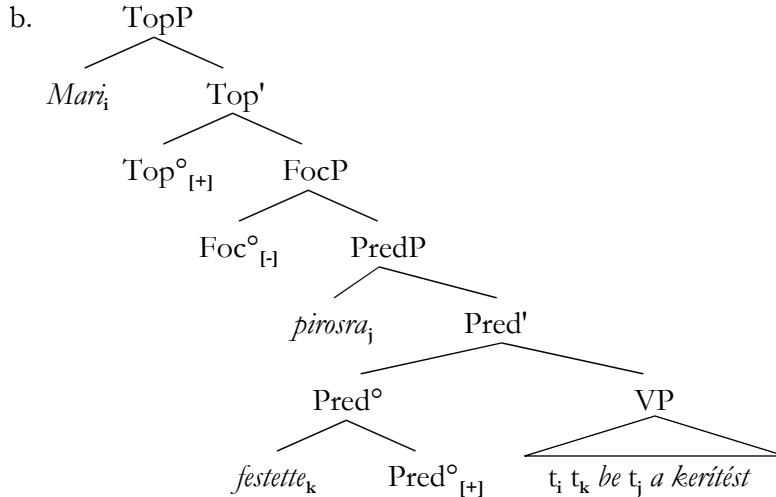
The existence of this kind of configuration opens up the possibility of analyzing QI as one variety of "Predicate Inversion" (PI) instead of as a variety of FI.[18] The resulting alternative structure for the RC in (4) is given in (18).

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[17] Prosodically, constituents in Spec,FocP come with (emphatic) nuclear stress triggering post-nuclear stress reduction ("eradication") (cf., e.g., Kálmán et al. 1986). Although it is doubtful that the prosody of Q in QI configurations is of that kind, it must be noted that RC equals the post-nuclear domain in lacking any major stress (Kálmán & Nádasdy 2004, 461; Varga 2002, 93). What is different, though, is that when RC follows Q as in (4a), it is set off and projects its own intonation phrase (IP) (Varga 2002, 96). This difference can, of course, be accounted for on the basis of the parenthetical nature of RC, irrespective of its internal structural make up.

[18] This approach comes close in spirit to the one advocated by Collins (1997, chapter 3) and Branigan (2011, 3.1). It would be even closer, were we to adopt the proposal by Olsvay (2004), É. Kiss (2008), and Surányi (2009, 2012) to reanalyze the Hungarian PredP as TP. However, we take the fact (see below) that the projection in question serves as default attachment site for "low" adverbials like manner adverbs as sufficient reason for sticking with the original label. See Section 5 for some further cross-linguistic considerations.

(18)

```
                        TopP
                    ╱         ╲
              Top°[-]          FocP
                          ╱         ╲
                    Foc°[-]          PredP
                                 ╱         ╲
                             OpQ            Pred'
                                        ╱         ╲
                                   Pred°            VP
                               ╱        ╲        ╱    ╲
                          mondtaᵢ     Pred°[+]   tᵢ el János
```

Now, with Op_Q removed from Spec,FocP, it is clear that the core challenges to the analysis of QI discussed in Section 2 are met: (i) exhaustive interpretation is no longer expected under QI, which accounts for the contrast between (11) and (13);[19] (ii) Spec,PredP is not a landing site in unbounded dependencies, which accounts for the contrast between (15a) and (15b); (iii) Op_Q does not count as focal "licensor" of postverbal *csak*-NPs, which accounts for the contrast between (16b) and (16c).[20]

The Op_Q-in-Spec,PredP analysis makes an additional prediction, namely, that QI should be fine in environments that allow "VM-climbing" (cf., e.g. É. Kiss 2002, 3.6.1). The examples in (19) and (20) can be taken to confirm this prediction.[21]

(19) a. *El   akarja   olvasni Maria könyvet*
          VM   want.3SG   read.INF Mary   the book.ACC
          'Mary wants to read the book'

      b. *"Fejezzétek   be   ezt a butaságot!"   akarja   mondani*
          stop.SUBJ.2PL   VM   this the nonsense.ACC want.3SG   say.INF
          '"Stop this nonsense!" (s)he wants to say'

(20) a. *Pirosra   kell,   hogy fessék   a   kerítést*
          red.onto[VM] should that   paint.SUBJ.3PL the fence.ACC
          'They should paint the fence red'

      b. *"Fejezzétek   be   ezt a butaságot!" kell,   hogy mondják*
          stop.SUBJ.2PL   VM   this the nonsense should that say.SUBJ.3PL
          '"Stop this nonsense!" they should say'

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[19] É. Kiss (2002, 232f.) draws an analogous conclusion wrt. the placement of expletive *azt* ('that') accompanying complement clauses of "verbs of saying, and verbs expressing mental activities". Reluctantly, we have to leave exploration of the overall connection between direct and indirect speech in Hungarian to further research.

[20] Except for the extraction diagnostics, Csirmaz (2004, 235f.) provides analogous data to argue that preverbal "designated arguments" of a particular class of light verbs called "stress avoiding verbs" (cf. É. Kiss 1994, 31) are not in focus position but fill the VM position, i.e., Spec,PredP.

[21] For some approaches to "VM-climbing," see the contributions to É. Kiss & van Riemsdijk (eds.) (2004) and references cited there. (19b) and (20b) show that prosodically, Q counts as satisfying the "stress-avoidance" requirement of *akar* and *kell*, that is, these (auxiliary) verbs are unstressed here, which means they aren't focused for contrast or VERUM (cf., e.g., Csirmaz 2004, Kálmán et al. 1986, Komlósy 1994, Szendrői 2004).

That we are dealing with QI in (19b)/(20b) can be inferred from the contrast in (21). As shown in (21a), bare infinitives can serve as VM (cf. Komlósy 1994, 99; Koopman & Szabolcsi 2000, 73). (21b), a direct counterpart of (19b), shows that QI forces the bare infinitive to remain postverbal.[22]

(21) a. *Mondani akarja   hogy ...*
          say.INF   want.3SG   that
          '(S)he wants to say that ...'
      b. * *"Fejezzétek be ezt a butaságot!" mondani akarja*

A much more general issue that we are obliged to address is the question of how the strict (surface) verb initiality of RC − mentioned in Section 1 but ignored in Section 2 − is going to be enforced within the overall phrase structural setting we have been assuming. This will be done in two steps. The question as to what blocks accessibility of FocP and TopP will be dealt with in Section 5. For now, we confine ourselves to PredP. A closer look at this projection already reveals a very specific challenge to the Op_Q-in-Spec,PredP analysis, which is due to the assumption (É. Kiss 2009, section 6; 2010, 522f.; Egedi 2009, 112) that manner adverbials are adjoined to PredP. (22) (cf. É. Kiss 2010, 523) shows a manner adverb immediately preceding the neutral position of a VM in Spec,PredP.

(22) a. *A tanár   hangosan fel   olvasta a dolgozatokat*
          the teacher loudly   VM   read   the paper.PL.ACC
          'The teacher read the papers out loudly'
      b. . . . [PredP *hangosan* [PredP *fel* [Pred' *olvasta* [VP . . .

Given the analysis of QI in (18), we expect manner adverbials to be able to occur in the initial position of RC. (23) (Collins & Branigan 1997, 9) shows that this indeed is a possibility in English.

(23) *"Don't touch that dial!" abruptly suggested the TV screen*

By contrast, Hungarian manner adverbials have to follow the finite verb under QI, as shown in (24).

---

[22] As the contrast between (ia) and (ib) shows, Op_Q-to-Spec,PredP is possible across an intervening VM, unlike standard "VM-climbing" (cf., e.g., Farkas & Sadock 1989, 327).

(i) a. *"A demokrácia   kompromisszumokra   épül" kezdte el   mondani*
         the democracy   compromise.PL.onto   built began VM   say.INF
         '"Democracy is built on compromise" he began to say'
     b. * *Pirosra   kezdte el   festeni   a kerítést*
         red.onto[VM]   began VM   paint.INF   the fence.ACC
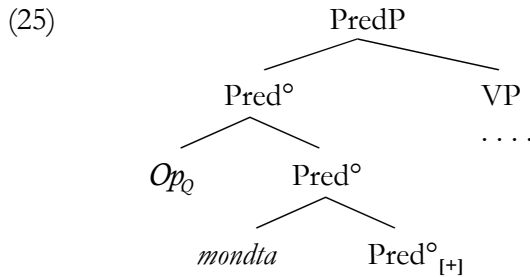   'He began to paint the fence red'

(ib) would only be fine if *pirosra* were (narrowly) focused, i.e., as an instance of FI. We assume that a fine-grained version of relativized minimality will take care of (i).

(24) a. * *"Fejezzétek   be   ezt   a butaságot!"   hangosan kiáltott   fel   Mari*
            stop.SUBJ.2PL VM this the nonsense loudly   shouted VM   Mary

      b. *"Fejezzétek be ezt a butaságot!" kiáltott fel hangosan Mari*
          '"Stop this nonsense!" shouted Mary out loudly'

Now, instead of simply stipulating a ban on adjunction to PredP when occupied by *Op*$_Q$, we will appeal to the option particular to light VMs of incorporating into Pred°. As is going to be discussed in the next section, this assumption will be supplemented with a linearization mechanism that enforces (domain-specific) initial positioning for the resulting head.

4   Quotative Inversion and *Op*$_Q$-in-Pred°

One of the running themes of research into Hungarian VMs is their hybrid status. Their displacement properties, of which VM-climbing illustrated in (19a)/(20a) is only one instance, have − among other things − been taken to speak for the phrasal nature of VMs (cf., e.g., Koopman & Szabolcsi 2000; É. Kiss 2002, 3.6; Surányi 2009). On the other hand, a number of prosodic, morphosyntactic, and semantic properties support the assumption that VMs may be incorporated (at least) at some level of analysis (cf., e.g., Ackerman 1982; É. Kiss 2002; several contributions to É. Kiss & van Riemsdijk (eds.) 2004; Farkas & de Swart 2003; Farkas & Sadock 1989; Surányi 2009). Our suggestion therefore is to slightly modify the analysis of the RC in Hungarian QI and replace *Op*$_Q$-in-Spec,PredP, shown above in (18), by *Op*$_Q$-in-Pred°, shown in (25).

(25)
```
                      PredP
                    /       \
                Pred°        VP
              /      \      . . . .
          OpQ        Pred°
                   /       \
               mondta      Pred°[+]
```

Regarding feature-checking between Pred° and *Op*$_Q$, we take (25) to be equivalent to (18), i.e., Spec,PredP is not available for any additional VM. The contrast between (4a)/(4b) and (5a)/(5b) thus remains a core consequence of the analysis of Hungarian QI. We are not entirely sure, though, what it is that gives *Op*$_Q$ absolute priority over other VMs to enforce this. The fact itself fully supports the idea by Csirmaz (2004, 240f.) of a "verbal modifier hierarchy" regulating access to PredP in the presence of multiple VMs. In particular, *Op*$_Q$ perfectly fits the observation that "[a]t the highest end of the hierarchy are [...] covert operators" (p.240). We suggest that the decisive additional factor for the QI case at hand is clausal typing in the sense made more explicit in Appendix A.

Another important property of the Op_Q-in-Pred° approach sketched in (25) deserves being stressed: the advantages discussed in Section 3 of assimilating QI to PI instead of FI carry over.[23]

Let us next turn to the issue, raised at the end of Section 3, of how to guarantee head initiality of PredP. The proposal here is that this be modeled in terms of linearization at Spell-Out. We adopt and slightly adapt the idea promoted by É. Kiss (2008, 2009, 2010) that (a) PredP is the lowest clausal domain feeding PF-linearization in Hungarian and (b) PF-linearization of PredP involves "domain flattening," so that constituent order will be determined by principles such as Behaghel's "Law of Growing Constituents" (É. Kiss 2008, 7.1). In modifying É. Kiss's approach, we follow Fox and Pesetsky (2005, 15), who see "no need to distinguish phases from Spell-out domains". Accordingly, PredP will be linearized in its entirety, including its head, Pred°, and "edge" constituents.

Now, crucially, the effect of incorporating Op_Q into Pred° will have to be that Pred° becomes a "PF-prefix" in the string-theoretic sense familiar from formal language theory (cf. Kracht 2003, 1.2). Notationally, we register this by having Op_Q carry a "firstness" feature, ①, which is inherited by Pred°. In the framework of Fox and Pesetsky (2005), this amounts to adding the "ordering statement" $Pred° < X$, where X is a variable ranging over the entire set of constituents (other than Pred° itself), to the "Ordering Table" at Spell-Out. So even if the syntactic analysis of the RC in (24b) is as in (26a), ① will guarantee that Pred° comes first in the linearized string. Other principles will be responsible for ordering the remaining categories and yielding (26b). ($\varnothing$ represents the empty phonological matrix of Op_Q.)

(26)   a.   [$_{PredP}$ *hangosan* [$_{PredP}$ [$_{Pred°}$ $Op_Q^{[①]}$ [$_{Pred°}$ *kiáltott* Pred°]]$^{[①]}$ [$_{VP}$ *fel Mari*]]]
       b. $\varnothing$-*kiáltott* < *fel* < *hangosan* < *Mari*

In order to capture preverbal positions of PredP-adjoined adverbials, as in (22), we follow É. Kiss (2009; 2010, section 7) in assuming that adverb placement in Hungarian reflects a bipartition: preverbal ordering is based on c-command as determined by the attachment site, postverbal ordering occurs according to principles like the already mentioned "Law of Growing Constituents."

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[23] We have nothing particularly interesting to say about the "VP"-internal base position of Op_Q − or the empty category Op_Q binds, if assumptions by de Vries (2006, 220) are correct − or the derivational mechanism by which it gets placed in its surface position inside Pred°. Note, however, that our analysis is compatible with assuming any such base position to be below the upper boundary for incorporable constituents observed by Surányi (2009) between vP, i.e., the base position of the subject, and the remainder of "VP." This is uncontroversial for direct object cases like (4a). The adjunct variety of QI (cf. Suñer 2000, 539) can be analyzed as grounded in a low adverbial or oblique "similative" function (cf. Blake 1930; Dowty 1991, 548, fn.3; Haspelmath & Buchholz 1998; Rett 2013, 4.1). What the so-called "manner demonstratives" *thus* / *így* (Hung.) make explicit in *Thus spoke Kennedy* / *Így szólt Kennedy* is a similarity relation (LIKE-THIS) (cf. Roussarie & Desmets 2003) to a full "simulation" − in the sense of Clark and Gerrig (1990) − of the reported speaking event, supplied by Q (*"Ich bin ein Berliner"*). Note that this is different from "just" manner modification (*loudly, firmly, enthusiastically*, etc.), although manner parameters can (to some extent) be inferred from Q. For formal work on the related phenomenon of *Be-Like*-Quotatives see, e.g., Haddican and Zweig (2012). Ojibwe appears to be a language that incorporates a counterpart of *like* into "verbs of speaking" (Rhodes 1986).

Regarding implementation, however, the mechanism proposed here differs somewhat. É. Kiss works on the basis of ordered trees in the syntax, allowing left- vs. right-adjunction of adverbials. In that system, postverbal placement of *hangosan* in (24b) presupposes right-adjunction of the adverb (to PredP). By contrast, our system − like the one by Fox and Pesetsky (2005) − follows Chomsky (1995) in allowing only linearly unordered structures in the syntax. The distinction between left- and right-adjoined adverbials will instead be derived by providing counterparts of the former with a "precedence feature," $\prec$, which ensures that its bearer precedes the constituent it attaches to. Thus, in a configuration like . . . $[_{XP2}\ ADV^{[\prec]}\ [_{XP1}\ \ldots$,[24] the effect of $\prec$ will be addition of the statement $ADV \prec XP1$ to the "Ordering Table" at Spell-Out. The distinction between (22) and (24) follows if the former contains *hangosan*$^{[\prec]}$ while the latter uses unadorned *hangosan*. In fact, (24) cannot contain *hangosan*$^{[\prec]}$, given that the ordering statement *hangosan* $\prec$ *PredP1* implies *hangosan* $\prec$ *Pred°* and thus leads to a contradiction with *Pred°* $\prec X$.[25]

In sum, we have seen that a parochial linearization mechanism can guarantee head initiality for the PredP part of RC in QI. We would like to argue that this is where Hungarian QI displays a language-specific "stylistic quirk".[26] Section 5 will be devoted to showing that the broader phrase structural issue of how to render FocP and TopP inaccessible can be given a cross-linguistically satisfactory answer. Before tackling this issue, however, we would like to briefly consider evidence in favor of the approach just developed.

4.1   Incorporation of *Op$_Q$* into Pred°: Independent Motivation

An independent case can be made in favor of the *Op$_Q$*-in-Pred° analysis based on morpholexical considerations. These have to do with more explicit assumptions about what *Op$_Q$* stands for. Further − more speculative − semantic ramifications are discussed in Appendix B.

Collins and Branigan (1997, 2.4) make a connection between English *Op$_Q$* and ("archaic") demonstrative *so* (cf. de Vries 2006, 216 for Dutch). This is exactly the kind of perspective we would like to adopt for Hungarian. Thus note that a Hungarian counterpart of *so*, i.e., *úgy*, is well-attested in (counterparts of) QI in earlier stages of the language, as exemplified in (27) (Dömötör 1988, 291).[27]

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[24]   Segments are numbered from lowest, 1, to highest, *n*.

[25]   An alternative one may envisage would be to have *Op$_Q$* turn Pred° into a prosodic enclitic and to stipulate that Q, but not adverbials, can serve as its host. This might then be employed in accounting for the unacceptability of (5c). Working out such a proposal would require taking a stance on the difficult issue of how RC and Q exactly combine, a subject matter we have to leave for further research, as already indicated in Section 2.

[26]   For French, Bonami and Godard (2008, 11f.) extend the role of linearization to postverbal positioning of the subject. We are well aware that, as pointed out by an anonymous reviewer, (local) head-initiality could alternatively be enforced by applying head movement to Pred°. In fact, this is what we proposed in an earlier version of this paper. However, for reasons discussed in Section 5, it is preferable to avoid involving Foc° as a landing site here. It may, of course, turn out that a comprehensive treatment of the syntax of reported speech and clausal complementation provides independent motivation for additional functional projections. We leave that for further research.

[27]   The source is 16th century bishop Miklós Telegdi (item TelM. 385).

(27) *"Ma velem   leſʒ"   ugy mond Chriſtus a' latornac,   "paradichomba"*
      today with.me you.will.be so said Christ   the malefactor.DAT paradise.in
      ʿ"To day shalt thou be with me in paradise" said Christ unto the malefactor᾿

Interestingly, as pointed out by Fónagy (1986, 262), "[i]n literary text of the 18th and 19th centuries we meet a frozen and reduced form of *úgy mondja* ʿhe says *it* like that᾿: *úgymond*, [...] which always follows the reported clause." We would like to suggest that "freezing" is an indicator of syntactic incorporation. In contemporary Hungarian, *úgymond* has turned into an adverbial particle meaning ʿso-called᾿. Instead, the form *aszongya*, which is a contraction of demonstrative *azt* (ʿthat᾿) and *mondja* (ʿhe/she says᾿) has taken over (Dömötör 1988, 289; Fónagy 1986, 259, 262). Thus, in spoken ("colloquial") Hungarian, the examples in (4) could be rendered as in (28).[28]

(28) a. *"Kedden sikerült a vizsgám" aszongya János*
      b. *"Kedden sikerült" aszongya János "a vizsgám"*

Again, contraction chimes well with incorporation. We therefore allow ourselves to interpret the existence of *úgymond* and *aszongya* as overt morpholexical evidence for the possibility in Hungarian of incorporating demonstrative operators such as Op_Q.[29]

   Appendix B provides a semantics of demonstrative incorporation that sheds very interesting further light on exhaustivity effects and QI.[30]

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[28] (i) is an authentic example from the Hungarian National Corpus:

(i) *"Dobozos sört   hoztam   csupán" - aszongya - ...*
     canned beer.ACC brought.1SG only   say.3SG
     ʿ"I only brought canned beer" he says᾿ (http://corpus.nytud.hu/mnsz/index_eng.html)

[29] Work on pronoun incorporation is provided, for example, by Baker and Hale (1990) and Espinal (2009). Note that in modern Hungarian, the free-standing demonstratives accompanying direct reported speech are the proximal demonstratives *így* (ʿso᾿; ʿlike this᾿) (see footnote 22 above) and *ezt* (ʿthis᾿) rather than the distal ones *úgy* (ʿso᾿; ʿlike that᾿) and *azt* (ʿthat᾿) (cf. Kiefer 1986, 201).

[30] Contrary to the proposal for Dutch by de Vries (2006, 216, 220) that Op_Q uniformly corresponds to *zo* (ʿso᾿), it has to be assumed for Hungarian that Op_Q is able to stand for the counterpart of either *that* or *so*. The distinction is intricately related with presence vs. absence of the so-called "definite conjugation" (cf., e.g., Bartos 2001, Coppock & Wechsler 2012) on the finite verb in QI. As (i) shows, definite conjugation on Hungarian transitive verbs for which the quote is the only thing that can plausibly be construed as direct internal argument results in incompatibility with *így* but allows *ezt*.

(i) *"A demokrácia kompromisszumokra   épül" (* így)/(ezt) állította*
     the democracy compromise.PL.onto   built   so   this claimed.3SG.DEF
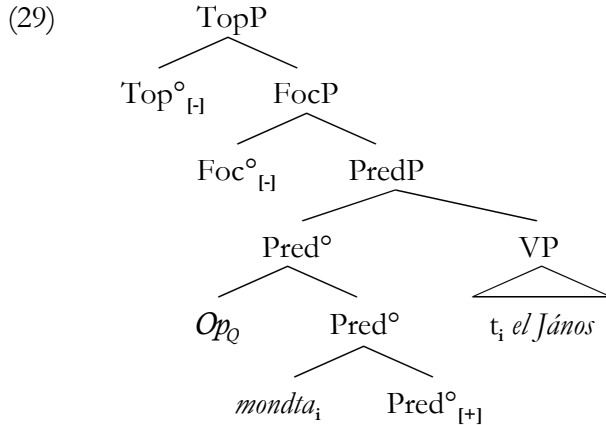   ʿ"Democracy is built on compromise" (so) he claimed᾿

For other transitive verbs things are more complicated. Consider (ii):

(ii) *"Nincs   legnagyobb prímszám"   magyarázott / magyarázta Erdős*
      NEG.exist largest   prime.number explained / explained.DEF   E.
      ʿ"There is no largest prime" explained Erdős᾿

With definite conjugation, the fact cited via Q becomes the explanandum, i.e., target of explanation, while without that feature it is the explanans, i.e., means of explanation (of something

5   Quotative Inversion and Head Initiality

Let us return to the issue left unresolved in Section 3, namely, the general question as to how our phrase structural analysis of Hungarian QI guarantees the strict head initiality of RC. (29) combines (18) and (25) to show the full Op_Q-in-Pred° proposal we arrived at in Section 4.

(29)

```
                        TopP
                       /    \
                  Top°[-]    FocP
                            /    \
                       Foc°[-]    PredP
                                 /      \
                            Pred°        VP
                           /     \      /  \
                        OpQ      Pred°  ti  el János
                                /    \
                           mondtai   Pred°[+]
```

We have seen in (26) how linearization takes care of the head initiality of PredP. But what about FocP and TopP?

Before going into our own account, we would like to very briefly reflect on the cross-linguistic situation regarding head initiality under (varieties of) QI. Most straightforward, it would seem, is the analysis of QI in *Verb Second* (V2) languages. Thus, de Vries (2006, 216) explicitly assimilates the RC of Dutch to V1 constructions such as polar interrogatives and imperatives, whose canonical analysis involves postulating an empty operator in Spec,CP.[31] Strict verb initiality therefore reduces to the strictness of (CP-) specifier head adjacency in V2 languages.

Looked at from the same perspective, QI in English and Romance might be expected to be analyzed as one variety of "residual V2" (cf. Rizzi 1990, 1996). This is indeed the direction of the proposal by Roberts (2013, 564) for English. It is unclear, however, how preverbal adverbs like the one in (23) would be accommodated there. Standard V2 languages like Dutch categorically disallow this, as shown in (30).[32]

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else). The latter reading can also arise with definite conjugation by adding *így* and an independent direct object such as *a problémát* ('the problem') (*így magyarázta Erdős a problémát* 'this way Erdős explained the problem'). See Fónagy (1986, 261) for related observations. Thanks to an anonymous reviewer for making us be clearer on this point.

[31] As can be gathered from the discussion by Barbiers (2007), while such an analysis may be upheld for (modern) Dutch, the possibility of topicalization in German imperatives calls for a more flexible approach.

[32] Thanks to Eefje Boef for help with the Dutch example. For Swedish, see Holmberg (1986, 119). There are, however, familiar cases of "V3" in Germanic V2 languages, induced, for example, by the addition of hanging topics (cf., e.g., Frey 2004) or the insertion of adverbial conjunctions like German adversative *aber* ('however') or focus particles like Swedish *bara* ('only') (cf. Egerland 1998) between constituents in Spec,CP and the finite verb in C°. Although all of these deserve closer attention, we suspect that the information structural constraints they come with may turn out to be incompatible with an RC environment in QI.

(30)   *"Raak die toets niet aan!" (* abrupt) zei het TV-scherm (abrupt)*
      reach the key not PRT   abruptly said the TV screen abruptly
      ꞌ"Don't touch that button!" said the TV screen abruptly.ꞌ

From the discussion by Suñer (2000, 534ff.), it can be concluded that Spanish behaves like Dutch in requiring RC to be strictly verb initial. Formally, however, this is achieved by assuming "that adverbials in Spanish might adjoin either to vP or to VP" (Suñer 2000, 536), while the finite verb is located in T°. The structure of Spanish RCs is shown in (31) (cf. Suñer 2000, 542).[33]

(31) $[_{FP}\ Op_Q\ [_{F'}\ F°_{[+qu]([+foc])}\ [_{TP}\ pro_{ex}\ [_{T'}\ [_{T°}\ V+v\ ]\ [_{vP}\ Su\ [_{v'}\ .\ .\ .\ ]]]]]]]$

For English, Collins and Branigan (1997, 16) opt for a lower surface verb position between TP and vP, namely, in AgrO°, which leaves enough room to the adjunction of preverbal adverbs, i.e., "Agr[O]P or higher" (Collins & Branigan 1997, 9). This analysis is revised by Collins (1997, 40) and Branigan (2011, 43), such that the finite verb is located in T° and Op_Q in Spec,TP. Collins (1997, 37) speculates on the adjustment necessary for capturing adverb positions by stating that "[i]f we assume that the adverb in [(23)] is adjoined to either TP or T', then that provides one argument that the verb has not moved to C in quotative inversion".

Now, a simple general lesson that can be distilled from the above formal analyses for the issue of verbal positions in QI has been aptly formulated by Suñer (2000, 525): "Essentially, little specific to the syntax of direct quotes is needed to account for the facts in Spanish since the construction partakes of well-established patterns of the language; in English, however, quotative inversion has a rather atypical constituent order that requires construction-specific mechanisms, such as short V movement [...]." We have seen that the analysis of QI in V2 languages like Dutch can equally fall back on "well-established patterns of the language".

For Hungarian QI, we have looked at the two well-established verb positions of the language namely, Foc° and Pred°. Both are capable of inducing the required V°−VM inversion, but independent arguments laid out in Sections 2 and 3 strongly suggest that Pred° is the better choice. In Section 4 it is shown how to make a small adjustment to guarantee (local) verb initiality in the presence of PredP adverbials. This builds on slightly modifying an independently motivated linearization mechanism. However, we still have to address the question of what makes FocP and TopP in (29) inaccessible.[34] Since there is no evidence for residual V2 in Hungarian,[35] assuming construction-specific verb placement in Top° − not to speak of in the head of a construction-specific peripheral

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[33] The same approach to finite verb and adverb positioning would seem to be adequate for French (cf. Doeleman 1998, 3.4).

[34] A related question arises for the Op_Q-in-Spec,TP approaches to QI in English by Collins (1997, chapter 3) and Branigan (2011, 3.1). Within these frameworks, it has to be shown how the unacceptability of topicalization of the kind in (i) is accounted for.

(i)   * *"John left"* $[_{CP}\ [$ *to Mary* $]_i\ [_{TP}\ Op_Q$ *said the student* $t_i\ ]]$

The following observations about information structure would seem to be relevant here too.

[35] There is no historical evidence for anything like a (partial) "V2 stage" of Hungarian (cf. É. Kiss 2013).

functional projection − would strike us as exceedingly *ad hoc*. In fact, it is one of the hallmarks of topics in Hungarian that they don't trigger V°−VM inversion (cf. e.g., É. Kiss 2002, 12). Instead, we will argue that the information structural pecularities of RCs in QI lead to the "shut-down" of TopP and FocP.

    To begin with, it has been observed (cf., e.g., de Vries 2006, 221) that Q in QI is not suitable for expressing standard "information focus:"[36]

(32) a. A: *What did Kennedy say?*
        b. B: # *"Ich bin ein Berliner" said Kennedy*
        c. B: *Kennedy said: "Ich bin ein Berliner"*
        d. B: *"Ich bin ein Berliner" Kennedy said*

In contrast with (32c) or (32d), (32b) is not a felicitous answer to (32a). Nor does an utterance of Hungarian (4a) constitute a felicitous answer to *Mit mondott el János?* (ʿWhat did John say?ʾ). (8a), on the other hand, is the canonical form of an answer to (the Hungarian counterpart of) *Who did John introduce to Mary?*. Together with the argumentation in Sections 2 and 3, we thus have sufficient reason to believe that FocP plays no role in Hungarian QI.[37]

    At the same time, as shown in (33) and (34), QI is not a suitable environment for aboutness topics either:

(33) a. *Let me tell you something about Kennedy*
        b. # *"Ich bin ein Berliner" said Kennedy*
        c. *Kennedy said "Ich bin ein Berliner"*

(34) a. *Let me tell you something about (the historic utterance) "Ich bin ein Berliner"*
        b. # *"Ich bin ein Berliner" said Kennedy*

The same negative assessment can be made for contrastive topics. Only noninverted subjects can serve this function, as shown by the contrast between (35b) and (35c):[38]

(35) a. A: *What did American presidents say on such occasions?*
        b. B: # *"Ich bin ein Berliner" said Kennedy*
        c. B: (/)KENNedy said "Ich bin ein BerLINER"(\)

And, construing Q in QI as a contrastive topic is entirely out of the question:

(36) a. A: *What about historic utterances by American presidents?*
        b. B: #/* *"Ich bin ein (/)BerLINER" said KENNedy(\)*

Given that these facts carry over − *mutatis mutandis* − to Hungarian, we have a strong case for assuming that TopP, being divested of its core functions, plays no role in QI either.[39]

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[36] The discussion by Matos (2013, 126ff.), who argues for postverbal subjects in QI as bearers of information focus, must be considered unsatisfactory in not addressing this kind of evidence.

[37] Suñer (2000) does not give any independent information structural arguments for Spanish Op_Q-in-Spec,FocP. The argument is based on its patterning with *wh*-movement and focus fronting (p.558).

[38] It is unclear what accent pattern (35b) with a contrastive topic following the "associated focus" should display.

In addition, it is reasonable to assume that the inaccessibility of FocP and TopP also rules them out as adjunction sites for adverbials and, as otherwise postulated in the case of FocP (cf. É. Kiss 2010, 520), (overt) "Q(uantifier)-Raising". We therefore conclude that verb initiality of PredP is sufficient to guarantee strictly verb initial RCs for Hungarian QI constructions.[40]

Let us round the discussion off by noting that it is possible to ground the above observations about information structure and the accessibility of FocP and TopP in a theory about the force of QI constructions. However, our thoughts on this are more tentative and sketchy, so, in order not to unduly stretch the main line of argumentation, we transfer these ideas to Appendix A.

6   Conclusion

This paper has been concerned with Quotative Inversion, QI, in Hungarian, which occurs in a parenthetical reporting clause, RC, when immediately preceded or enclosed by a quote, Q, i.e., a part of (represented) direct speech (or thought). QI manifests itself in Hungarian by inversion of the finite verb and a "verbal modifier", VM, the latter canonically represented by a verbal particle.

As far as phrase structure goes, we argue for incorporation of an abstract operator, Op_Q, into Pred°. The resulting shape of RC is repeated here as (37).

(37)
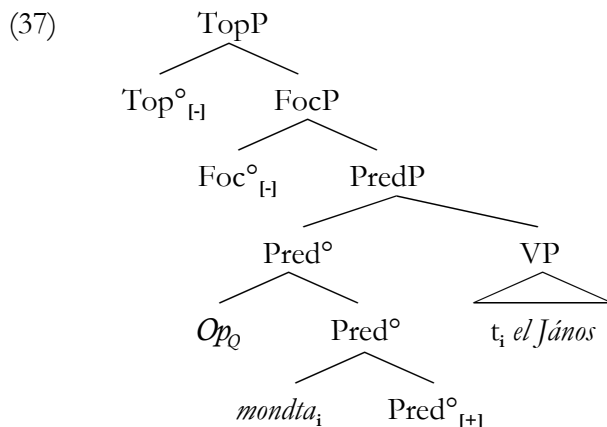
In Section 2 we argue against phrasal A'-movement of Op_Q to Spec,FocP because QI fails to pattern with Focus Inversion, FI, in three respects: (i) Op_Q does not enter into unbounded (A'-) dependencies, (ii) Op_Q does not license additional postverbal foci, and

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[39] Güldemann (2008, 63f.) explores the connection between "subject inversion" in QI and "thetic statements", the latter being characterizable as lacking any (standard) information structural topic-comment partitioning (cf., e.g., Jäger 2001). Theticity, however, is clearly insufficient for an account of "subject inversion" in European languages, given its compatiblity with preverbal subjects in, for example, English (*JOHNSON died*) (cf. Lambrecht 1994, 241) and, crucially, Hungarian (Maleczki 2004, 110).

[40] A full study of information structural constraints on QI is beyond this paper. Green (1980) – building on work by Hermon (1979) – offers some pertinent observations concerning the possibility of marking contrast within RC.

(iii) QI does not seem to come with the exhaustive interpretation associated with Hungarian FI environments.

In Section 3 we point out that all of these challenges are met if QI is assimilated to VM-placement, i.e., if one adopts an Op_Q-in-Spec,PredP approach. This correctly makes the additional prediction that QI occurs in "VM-climbing" environments roughly identifiable with contexts of restructuring. One major phrase structural shortcoming of the Op_Q-in-Spec,PredP solution, however, is the incorrect prediction that manner adverbials, standardly taken to adjoin to PredP, should be able to occur RC initially.

Section 4, therefore, replaces Op_Q-in-Spec,PredP by Op_Q-to-Pred° incorporation and adds a linearization mechanism in the spirit of Fox and Pesetsky (2005), which guarantees the strict head initiality of PredP at Spell-Out. In favor of incorporation, Section 4.1 argues that Op_Q is an abstract demonstrative resembling *úgy* (ʿsoʾ) in *úgymond* (ʿso s/he saysʾ) and *azt* (ʿthatʾ) in *aszongya* (ʿs/he says thatʾ), i.e., in canonical heads of RC of older and contemporary ("colloquial") Hungarian, respectively.

Section 5 addresses the broader issue of what guarantees overall head initiality of Hungarian RCs, given the "low" surface position of the finite verb in Pred° and limited (PredP bounded) influence on this via linearization. We consider the options available for enforcing V1 configurations in Verb Second languages (placement of Op_Q in Spec,CP) and languages like Spanish with V°-in-T° (ban on adjunction to TP and higher projections) and decide that for Hungarian, the missing key to V1 under QI can be found in its "discourse configurationality." On the basis of cross-linguistically valid probing of the information structure of QI, an absence of standard focus and topic functions is argued for. Our conclusion is that this means a "shut down" (inaccessibility) of TopP and FocP, the projections otherwise responsible for hosting preverbal constituents.

Two appendices are going to complete the picture. Appendix A provides illocutionary foundations for the information structural impoverishment of RC under QI. Force sensitivity is argued to be a plausible factor in deriving the root nature of QI and, more speculatively, for underlying a mechanism of clausal typing that makes incorporation of Op_Q into Pred° an obligatory property of RC.

Appendix B sketches a semantics for demonstrative incorporation that structurally mimics standard noun incorporation and thus vindicates the Op_Q-to-Pred° perspective. What Op_Q does in addition is to introduce a token-indexical component into the RC predicate. This can be shown to independently guarantee that the quote, if it were in focus position, would be interpreted exhaustively. We take this to be an important contribution to future debates on the division of labor between morphosyntax, semantics, and pragmatics in the area of information structural phenomena.

Appendix A: Narrative Force and the Inaccessibility of TopP and FocP
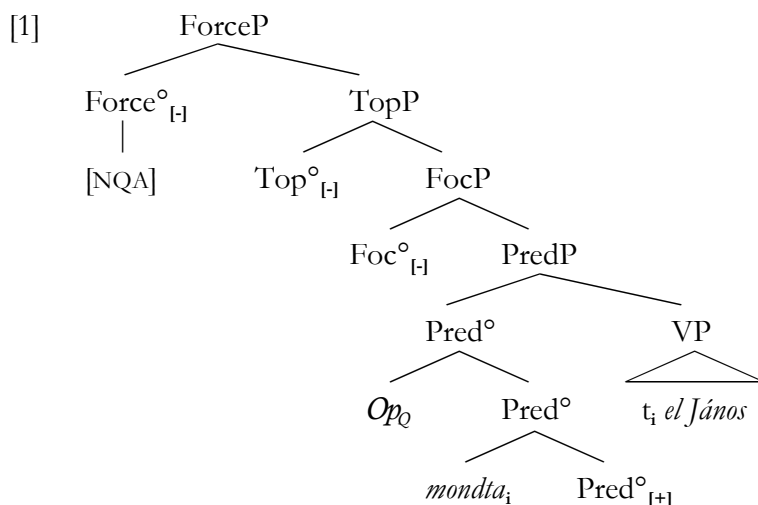
Jacobs (1984, 1988, 1991, 1997) has argued that there is an intimate connection between the information structure of clauses and illocutionary force. One of the technical assumptions this has led to is that "free focus" is bound by illocutionary operators, where formally the latter interact with "structured meanings," i.e., information structurally partitioned meaning representations (cf., e.g., Endriss 2009, chapter 6; von Stechow 1991). Here we will very briefly and sketchily argue that such kinds of tools can be

implemented to govern the "shut down" of TopP and FocP in RC of Hungarian QI dealt with in Section 5.[41]

To begin with, note that the "highlighting" effect of QI (cf., e.g., Klockow 1980, 120; Fónagy 1986, 261; Suñer 2000, 541) can be attributed to the "figure-ground pattern" arising from combining Q with the parenthetical RC. In line with the observations we made in Section 5, this means that RC-internally, FocP can be "impoverished".

At the same time, the aboutness relation between RC and Q is secondary or derivative. Thus, as is well-known, in standard assertions involving an aboutness topic such as *the cat* and a comment such as *is on the mat*, by uttering *The cat is on the mat* a speaker attributes the property expressed in the comment to the entity denoted by the topic expression. And, the "illocutionary point" of the assertion is canonically taken to be that the speaker commits herself to the correctness of that attribution (cf., among many others, Searle 1969; 1976). By contrast, utterances like (31a)(*"Ich bin ein Berliner" said Kennedy*) constitute (parts of) narratives where (real or "fictional") speech and thought is "demonstrated" in the sense of Clark and Gerrig (1990). This is the role of Q. While such demonstrations could in principle stand alone, it is often useful − in particular when dialogs or complex conversations are portrayed − to "anchor" Q in the sense of providing information about the source (speaker, attitude holder) of Q and its "mode" (speech or thought). This kind of "narrative quote anchoring" (NQA) is what we consider the core function, or "illocutionary point" (broadly speaking), of RC.[42]

Based on the above idea about the "force" of QI, the analysis of RC provided in (29) (Section 5) can be supplemented with a ForceP-layer (cf. Rizzi 1997) as follows.

[1]

ForceP
  Force°[-]   TopP
    |
  [NQA]   Top°[-]   FocP
                      Foc°[-]   PredP
                                 Pred°   VP
                            *Op*_Q   Pred°   t_i *el János*
                                  *mondta*_i   Pred°[+]

The inaccessibility of TopP and FocP will then be imposable as a condition on the choice of [NQA] as the value for Force°.[43,44]

It is important to note in addition that force-sensitivity correctly predicts that QI is a syntactic "root" or "main clause" phenomenon, an observation made among others by Emonds (1970, 18), Doeleman (1998, 82), Mosegaard Hansen (2000, 306f.), and Bonami and Godard (2008, 9). Evidence for this is given in [2].[45]

[2] a. * *If "Ich bin ein Berliner" said Kennedy, he probably wanted to please the audience*
     b. * *I believe that "Ich bin ein Berliner" said Kennedy*

Finally, with the "transparency" of TopP and FocP in [1], PredP enters the direct influence sphere of force. This opens up the possibility − hinted at in Section 4 − of attributing the obligatoriness of overtly associating Op_Q and Pred°, which results in QI, to the mechanics of clausal typing. The triggering feature on Pred° could be a specific variant of the one proposed by Collins and Branigan (1997, 12), Collins (1997, 41), and Suñer (2000, 542), i.e., [+QUOT(ATIV)E].

Independent evidence for the idea that clausal typing in Hungarian involves structurally low positions comes from imperatives and polar interrogatives. As shown in [3], imperatives are marked by V−VM inversion below the attachment site of manner adverbs applying to subjunctive verbs (cf. Farkas 1992, 208).

[3] *Figyelmesen   olvasd   el   az útmutatót!*
     carefully   read.SUBJ   VM   the instructions.ACC
     'Read the instructions carefully!'

Polar interrogatives are simply marked by attaching suffix *-e* to the finite verb (cf. Kenesei 1994, 340), independently of whether it is placed in Pred° of Foc°.[46]

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[43] ForceP in [1] must, of course, itself be inaccessible for our account of the verb initiality of RC (Section 5) to be complete.

[44] From the perspective of Jacobs, it would also be possible to have Force° when valued by [NQA] select (or "bind") a particular type of Focus. In line with Searle (1969, 76), who explicitly speaks of linguistic expressions as being "presented" in quotation (cf. Lucy 1993, 95), one candidate would be a subspecies of presentational focus. This could be instrumental in providing an alternative account for the behavior of Q wrt. exhaustivity discussed in Sections 2 and Appendix B. The pragmatic approach to Hungarian focus by Onea and Beaver (2011) could perhaps be refined along similar lines as well.

[45] Interestingly, [2b] shows that QI is strictly confined to root environments and does not enter "embedded root" contexts, such as the complement of "assertion-friendly" attitude predicates like *believe*. As originally shown by Hooper and Thompson (1973), these environments otherwise tolerate root transformations like NEG-inversion:

(i)   *I believe that under no circumstances would they accept the offer*

As indicated by Doeleman (1998, section 6), the root restriction may be harder to enforce in systems like the one proposed by Collins (1997, chapter 3), where Op_Q moves to Spec,TP and therefore does not seem to "activate the CP level" (Doeleman 1998, 81).

[46] In root clauses, polar interrogatives are alternatively marked prosodically by placing a rise-fall accent in penultimate position. Semantico-pragmatic differences between these two marking strategies are discussed by Gyuris (to appear). For further discussion of the Hungarian left periphery and clausal typing, see Gärtner and Gyuris (2012) and references cited there. More serious attempts at working

Appendix B: The Semantics of Demonstrative Incorporation and Exhaustivity

Op_Q-to-Pred° incorporation has the obvious potential of "modifying" the semantics of the clausal predicate. That would actually seem to be the prediction made by an analysis of Op_Q as a (kind of) VM, i.e. a "verbal modifier." Interestingly, such a semantic modification allows us to shed new light on exhaustivity, although only somewhat indirectly. This requires an abstraction from the analysis established in the main text. In particular, we will be concerned with *what would be the case if* Q were focused, i.e., *if* Q had to be interpreted exhaustively according to the principles of (narrow) focusing in Hungarian discussed in Section 2.

We begin by adopting the semantics of direct speech sketched by Potts (2007, cf. Maier 2009). Consider a standard non-inverted case like [4].

[4] *Kennedy said: "Ich bin ein Berliner"*

Intuitively, the meaning of [4] is that Kennedy stands in a direct saying relation to the utterance *Ich bin ein Berliner*. Potts (2007, 410) captures this by splitting the domain of individuals into "normal" ones like Kennedy (D_e) and utterances like *Ich bin ein Berliner* (D_u), the latter taken to correspond to expressions.[47] In the formal language, utterances get represented by "utterance terms," i.e., expressions in "corner quotes" like $\ulcorner$*Ich bin ein Berliner*$\urcorner$. Thus, the translation of [4] is the one in [5].

[5] $SAY_{dd}(k,\ulcorner$*Ich bin ein Berliner*$\urcorner)$

[5] is true iff the direct saying relation holds between the normal individual Kennedy and the utterance individual *Ich bin ein Berliner*.

Now, what is different under QI is that a demonstrative comes into play, i.e., the one introduced by Op_Q. However, as we will see, in order to capture the exhaustivity effect, there has to be pointing not just to an utterance (expression) but to an utterance token. To bring this about, we adopt a variant of the "demonstrative theory of quotation" developed by Davidson (1968, 1979) and discussed in detail by, e.g., Cappelen and Lepore (2007, chapter 10). [5b] applies an informal version of that theory to the QI version of [4] in [6a].

[6] a. *"Ich bin ein Berliner" said Kennedy*
     b. *Ich bin ein Berliner*. Kennedy stands in the direct saying relation
            to an utterance, of which this is a token.

To implement this, we need yet another domain of individuals, namely, the domain of utterance tokens (D_{ut}). Also, there has to be a binary token relation, TOKEN, which is a subset of $D_{ut} \times D_u$. In the metalanguage we mark utterance tokens by underlining and labeling. Thus, for the utterance *Ich bin ein Berliner* involved in [4] and [6a] there are two tokens: <u>*Ich bin ein Berliner*</u>[4] and <u>*Ich bin ein Berliner*</u>[6a]. In the formal language there will be terms for utterance tokens like $\ulcorner$*Ich bin ein Berliner*[n]$\urcorner$. Also, crucially, there will be a specific

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demonstrative, ∂, of type *ut*, which refers to "demonstrated utterance tokens," the latter to be understood in the sense of Clark and Gerrig (1990), who argue that quotation is a kind of "demonstration." We take these to be context parameters, c_{DU}, like speaker, c_S, and addressee c_A (cf. Kaplan 1978, 88).[48] The second part of [6b] will then be expressed formally as in [7].

[7] $\exists u[\ \text{SAY}_{dd}(k,u)\ \&\ \text{TOKEN}(\partial,u)\ ]$

[7] is true in context [6] iff there is an utterance *u* to which Kennedy stands in a direct saying relation and $c^{[6a]}{}_{DU}$ (= *Ich bin ein Berliner*[6a]) stands in the token relation to *u*. Now, clearly, the token *Ich bin ein Berliner*[6a] stands in the token relation to one and only one thing, namely, the utterance *Ich bin ein Berliner*. Therefore, if [7] is the interpretation of [6a], QI leads to "trivial" satisfaction of exhaustivity:

[8] $\neg\exists u' \in \text{ALT}_{[6a]}(\ulcorner Ich\ bin\ ein\ Berliner\urcorner)$
$[\ u' \neq \ulcorner Ich\ bin\ ein\ Berliner\urcorner \wedge \text{SAY}_{dd}(k,u') \wedge \text{TOKEN}(\ulcorner Ich\ bin\ ein\ Berliner_{[6a]}\urcorner,u')\ ]$

This result carries over, *mutatis mutandis*, to QI in Hungarian. The potential alternative to *Tizenöt éves ...* in (13)(Section 2), i.e., *egy gyárban ...*, does not stand in the token relation to *Tizenöt éves ...*(13), i.e., $\neg\text{TOKEN}(\ulcorner Tizenöt\ éves\ ...\text{(13)}\urcorner,\ulcorner egy\ gyárban\ ...\urcorner)$! Thus, assuming the semantics for QI just sketched, the effect described in (13)/(14) *could* be explained semantically. Q in (13) would indeed be interpreted exhaustively without this being detectable from an acceptable continuation built from the same core predicate (*elmondta*).

What remains to be done is to show how Op_Q-to-Pred° incorporation brings about the desired meaning shift. The trick, of course, will be to let Op_Q introduce the function required, i.e., it takes a binary direct discourse relation and transforms it into a "token demonstrative" predicate:[49]

[9] $Op_Q \rightarrowtail \lambda R_{dd}.\lambda x.\exists u[\ R_{dd}(u)(x) \wedge \text{TOKEN}(\partial,u)\ ]$

Now consider the composition of Pred° in (25)(Section 4):

[10] a. *mondta* $\rightarrowtail \lambda v.\lambda y.\text{SAY}_{dd}(y,v)$
b. [$_{Pred°}$ *mondta*] $\rightarrowtail \lambda v.\lambda y.\text{SAY}_{dd}(y,v)$
c. [$_{Pred°}$ Op_Q [$_{Pred°}$ *mondta*]]
$\rightarrowtail \lambda R_{dd}.\lambda x.\exists u[\ R_{dd}(u)(x) \wedge \text{TOKEN}(\partial,u)\ ](\lambda v.\lambda y.\text{SAY}_{dd}(y,v))$
$\equiv \lambda x.\exists u[\ [\lambda v.\lambda y.\text{SAY}_{dd}(y,v)](u)(x) \wedge \text{TOKEN}(\partial,u)\ ]$
$\equiv \lambda x.\exists u[\ \text{SAY}_{dd}(x,u) \wedge \text{TOKEN}(\partial,u)\ ]$

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[48] These particular referential properties of Op_Q qua ∂ are, of course, a stipulation on our part to achieve the right result, and thus to be judged by the overall fruitfulness of the approach. We suggest that this peculiarity is a consequence of "grammaticalization". Alternative theories are more syntacticized in analyzing the relation between Op_Q and Q via an indexing of the kind a relative operator is co-indexed with its "antecedent" (Bonami & Godard 2008, 10; Suñer 2000, 540).

[49] Note existential closure of the inner argument, which is a hallmark of "standard" (noun) incorporation (cf., e.g., Farkas & de Swart 2003, 74).

[10c] is ready to apply to a subject term and derive interpretations of QI analogous to [7].[50]

Let us repeat that all of this is hypothetical. We have reasons to assume that Op_Q incorporates into Pred°. We also have reasons to assume that Op_Q corresponds to a demonstrative. And, we have shown that this can be fleshed out semantically in such a way that the exhaustivity issue arising with QI in Hungarian *could* be dissolved in an independent way *if* Q *were* in focus. This kind of result should therefore be of particular interest to "deflationist" approaches to the interface between grammar and information structure like the ones by Surányi (2004, 2011, 2012) , Wedgwood (2005, 2007, 2009), and Horvath (2009), which seek to "neutralize" or eliminate designated projections like FocP. The richer the toolbox of precisely stated options the easier the development of viable alternatives.

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[50] We see no obstacle in applying the same operator to composed predicates like *begin to say.*

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Syntax in the 21th century
Reflections on *The Bloomsbury Companion to Syntax**
(London: Bloomsbury, 2013, 545 pages)

Pauli Brattico

1   Introduction

There is a "power of mind", Henri Poincaré observed, "which knows it can conceive of the indefinite repetition of the same act, when the act is once possible" (1905, p.13). He was referring to mathematical induction, an ability that lies at the core of mathematical intuition and discovery. The same ability is exhibited by human language. Thus, in language, one can put words together to craft more complex expressions, and then join these expressions together, indefinitely, to build bigger units. In short, all human languages have syntax.

The creative ability, whether in connection with language or mathematics, was often noted by the 17th century scholars, such as Descartes, and was much discussed and paid due attention. But it remained paradoxical. Descartes, for example, rejected the notion that the ability could be explained by whatever was available within the confines of the "mechanical philosophy" of his time, and assumed that it spawned from the immaterial human soul. All that changed during the early 20th century, at the time when Poincaré was writing. The best mathematicians of that period, Hilbert, Turing, Peano, Post and others, were trying to make the notion of "indefinite repetition" rigorous, and with much success. The theory of automata and recursive functions was finalized into its current form in the time span of just few decades.

The theory of language, too, had achieved substantial gains when we come to the early 20th century. There were several factors which went into this, among them the structuralist system and method that was applied with great success to the description and explanation of language change, and especially to the history of Indo-European languages. But the field gravitated towards behaviorism. Strict empirical, methodological and theoretical criteria swept the field. The doctrine was extreme.[1] It was, of course, not accepted universally and survived just one generation.

The study of syntax goes back in history several thousand years. During the structuralist era, however, syntax was mostly put to rest. The behaviorist doctrine was so strict that it made examination of more abstract and complex phenomena difficult. Consequently, the doctrine was mostly applied to the "sound side" of language. The situation changed when the theory of computation, developed by mathematicians some decades before, started to make its way into linguistics and psychology during the 1940s and 1950s. This meant that there was suddenly a rigorous way to describe and explain

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[1]   Behaviorist psychology sometimes lapsed into most extreme positions. This happened without recognizable empirical justification. Structural linguistics had different roots, but, at least in my reading, it allied closely with the positivist and behaviorist maxims.

how the mind can combine words and complex linguistic units, by means of "indefinite repetition of the same act", into bigger and bigger units. And not just in language, but in other cognitive domains as well.

At the forefront of these developments was the generative grammar, initiated by Noam Chomsky in the 1940s and 1950s and then developed by many others. The results were perceived by many as unacceptable, and there are still pockets of researchers who deem the enterprise as inadequate or even fundamentally misguided. But the core of this was that, after rigorization swept the field, a rich layer of hitherto unknown complexity emerged from what was regarded essentially a trivial phenomenon by previous generations. Language was not a simple catalog of trivial rules, behavioral responses or histories of reinforcement.

It sometimes seems as if the field has still not come to terms with this discovery. A schizophrenia prevails in which one group of linguists, and especially scholars from adjacent fields, maintain that syntax is mostly trivial, based on analogy, meaning or social convention, while a passing glance at any volume such as the one under review – a companion to syntax – contains syntactic curiosities filling page after page, many still mysterious and subject to debate. The same picture emerges by opening a professional linguistic journal dealing with syntax. If anything, the cognitive revolution promoted an appreciation of the fact that therein lies a hidden layer of complexity below commonsense understanding, so much so that it makes it very hard today to design a "companion to syntax" without making an extraordinary selection of topics examined in any depth, or indeed at all. And so it is in this case as well. It is a testimony to the richness of our field that only the surface of all there is in syntax can be touched in a large and penetrating volume such as the present one.

The *Companion to Syntax* takes as its stated mission a highly unusual approach which covers syntax without committing itself to any single syntactic framework. Some chapters are written within the generative framework, others come with a functionalist-typological orientation. I will follow a similar path in my review, therefore contrasting different approaches. I will also complement the issues under discussion by using data from Finnish. Core ideas and empirical phenomena are explained with the help of illustrations. These should help a non-expert reader to understand the matter under discussion.

2   Phrase structure

At the heart of syntax, and thus at the heart of any *theory* of syntax, lies an ability to make bigger units from simple ones. This is Poincaré's "indefinite repetition of the same act". In the case of language, we can put words together to form complex constituents, and complex constituents to make more complex units, and so on, indefinitely. Linguistic theory "is concerned with the infinite", Mark Baker notes in his chapter on the methods of generative theory (Chapter 2), "because most people can easily create and interpret an unbounded number of distinct sentences and sentence types" (p. 22). We are challenged to explain "how a finite amount of experience and knowledge can be used to construct and interpret an infinite (unbounded) range of new sentence types", by using "some sort of recursive rule system – a generative grammar in the broadest sense" (p. 23).

The ability must emerge from the human brain. Whether it exists in any nonhuman central nervous system is controversial. Even the question of whether it exists, in an unbounded form, also within other cognitive domains (mathematics, thought, navigation)

completely independent of language is debated.[2] These two questions motivate much of the discussion concerning recursion within present day cognitive science. During the early days, in contrast, the most pressing issue was how to describe that ability even in principle. One of Chomsky's early contributions to the debate was to show that finite-state computation is insufficient, a result which crystallized, through several intermediate steps, into the phrase-structure model of recursion of the 1960s. It is from this point in time that Jairo Nunes (Chapter 6) picks up the story and reviews the development of generative theorizing concerning recursion, up to the present-day minimalism and the theory of Merge. Thus, language- and construction-specific phrase-structure theories (i.e., familiar rewriting rules such as S → NP + VP) were first transformed into the more general X'-theory during the 1970s, which was in turn transformed into the more abstract bare phrase structure theory of the 1990s. At present, recursion is captured by assuming an operation, Merge, whose sole function is to combine two syntactic units into a set (Figure 1).
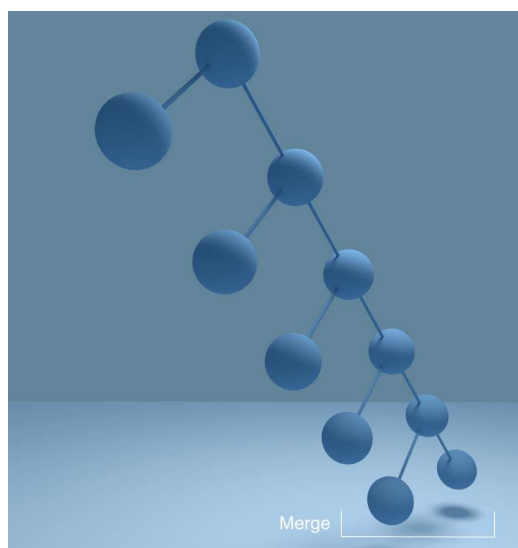

Figure 1. A fundamental aspect of natural language syntax is an ability to construct an endless variety of expressions by utilizing a discrete-combinatorial mechanism. That mechanism puts words and complex units together, as shown in this figure. The first attempts to model that ability with rigor led into the phrase-structure theories of the 1960s, which were then abstracted in a step-by-step manner, until a theoretical minimum was achieved: the theory of Merge. It says that linguistic expressions are crafted by putting primitive and complex items together, and this is all it says. By applying Merge iteratively, it is possible to craft complex constructions, such as the one shown here. The units in this figure can be words, morphemes, and complex phrases. Notice the lack of more sophisticated devices, notation or processes: Merge puts elements together and that's the only thing it does.

A notable aspect of this line of theorizing is its simplicity. The theory says that linguistic expressions are, at root, sets of elements with lexical items at the bottom. Why did it take fifty years to come up with such a simple solution? The explanation is that, on surface at least, language is *not* that simple. Expressions and constituents arrange themselves into asymmetric configurations, which the symmetric set-Merge captures rather poorly. In other words, iterative application of Merge must generate all the familiar core syntactic notions, such as the adjuncts, complements and specifiers, among other relational categories, while it is not trivial to show that it is able to do so. Chomsky (1965), for instance, observed that "the evidence presently available is overwhelmingly in favor of concatenation-systems over set-systems". He continued: "In fact, no proponent of the set-system has given any indication of how the abstract underlying unordered structures

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2   Thus, Fukui & Zushi (2004) observe that the recursive ability, as it is formulated in the more recent theories (reviewed below), "is a simple and general operation that combines two elements, and there seems no basis to claim that an operation like this is employed only by the language faculty. Rather, it is natural to assume that Merge is just an instance of a basic (cognitive) operation within logic, thinking, and other forms of human cognition" (p. 12). The recursive ability is a supramodal, perhaps modality-neutral, apparatus (Brattico & Liikkanen 2009, Brattico 2010).

are converted into actual strings with surface structures" and so "the problem of giving empirical support to this theory has not yet been faced" (p. 125). Finally, "there is no reason to consider the set-system, for the time being, as a possible theory of grammatical structure" (p. 126). That was fifty years ago. Today, the question is a matter of ongoing research effort. On balance, those asymmetries were stipulated axiomatically in the PS-theory and X'-theory, a stance that is not illuminating. Overall, the question of whether the simplest set-theoretical theory of Merge will be sufficient and, if not, what should be added to it, constitute interesting open questions. The topic is discussed by Nunes, as well as Claudia Parodi and A. Carlos Quicoli, the latter who review various types of complementation structures in Chapter 19.[3]

A theory of syntax, and Merge, must also establish a system of *grammatical relations* (GR) which link predicates to their arguments (i.e., the arguments *Pekka* and *the ball* must be linked to the predicate *drop* in a sentence *Pekka dropped the ball*). It must be one of language's main functions to link predicates and arguments to describe propositions and situations. How this is achieved depends on one's theoretical framework. In the generative theory, the core idea today is that there are functional heads which cast theta-roles, such as agent and patient, to other constituents in the phrase-structure by proxy. Specifically, most current theories offer a system where this happens by means of head-complement configurations (i.e. V-XP) and head-specifier configurations (XP-$v*$), as shown in Figure 2. For those unfamiliar with this notation, the crucial idea is that a substantial portion of the explanation of the syntax and semantics of grammatical relations is based upon phrase structure geometry.

Keeping Figure 2 in mind, consider a simple sentence such as *Pekka pudo-tti pallon* Pekka.NOM drop-CAU ball.ACC. The derivation begins by merging an intransitive verb V *puto-* 'drop' together with a DP, which is then theta-marked as the patient. This is interpreted akin to 'the ball falls(drops)'. Next, a transitivizer *-tta-* is merged, and that head will theta-mark another DP as the agent, the "causer" of the ball's dropping. We derive an expression where the agent causes the event where the ball drops, in short, an event where Pekka drops the ball.

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[3] Helasvuo (Chapter 5) discusses the notion of linguistic constituent and the ways constituents are associated with intonation and language use. She puts forward astonishing empirical claims. She says that phrase structure trees and bracketed structures represent constituency in a way that is "isomorphic to the linear order of written words", which is based on "conventional conceptualization" of how we organize speech temporally. In addition, she claims that phrase structure "may" be needed to explain "rules governing word order" in "some languages" (p. 67). It is not clear what justifies these extraordinary claims. To posit a frank isomorphism between linear order and phrase structure strikes me as beyond empirical possibility. If linear order and phrase structure were isomorphic, expressions could never be structurally ambiguous. In addition, and contrary to what Helasvuo argues, the existence of free word order principles (if there are such) warrants a wholesale rejection of neither phrase structure nor the notion of constituent. Phrase structure is concerned with generativity in language and mind; non-configurationality concerns certain surface symmetries in how some words behave in some languages under some restricted scenarios. See Francisco Ordóñez' chapter on scrambling in the present volume. Finally, why is there something "conventional" about phrase structure is never explained nor justified.
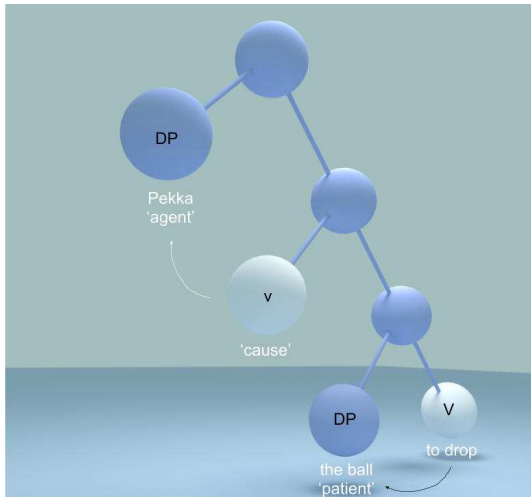
Figure 2. According to the standard generative theory, some constituents (DPs) are read off as arguments when they appear in close proximity to specific theta-marking functional nodes (marked circles V and v). Theta-marking casts theta roles (e.g., agent, patient) from predicates to their arguments. Theta-marking is shown here by the arrows. Argument-predicate configurations are established in syntax, and then interpreted semantically by additional mechanisms. The semantic-conceptual mechanisms are able to "understand" what it means to be an agent or patient, something that is obviously not part of the phrase structure. It also follows that certain functional heads only assign certain specific theta-roles. In Finnish, for instance, the agent participle suffix -mA correlates with agent theta-marking (*Pekan syömä eipä*, lit. Pekka.GEN eat.mA bread, 'a bread eaten / by Pekka'), the patient participle suffix -vA correlates with the patient role (*leipää syövÄ Pekka,* lit. bread.PRT eat-vA Pekka, 'Pekka who eats bread.'), and so on. These are functional items which come to the syntactic derivation with specific theta-marking properties.

As pointed out by Doris L. Payne (Chapter 13) in her chapter on grammatical relations,[4] these theories assume that grammatical relations are "read off" from phrase-structure. Linguistic form and conceptual substance are two separate things. But this is not inevitable. Other theories, as she points out, assume either that grammatical relations are primitive, axiomatic relations, or that they are inherently semantical. We take a look at the latter option, which brings us to the age-old problem of relating language with meaning, a question touched upon in Payne's survey of theories of grammatical relations.

Let's begin with the generative position. The generative position is essentially that language is more creative than thought. Thus, the system can merge almost anything without paying attention to meaning. One can merge {*colorless {green idea}*} as well as {*colorful {red tomato}*}, with the concomitant syntactic and morphosyntactic computations proceeding as if there were no difference. But there is a difference. While *colorless green idea* presents no coherent idea to the mind (not, at least, to my mind when literally interpreted), *colorful red tomato* very much does. So what the syntactic machine regards as two near-identical noun phrases, the semantic system sees as two completely different things. Similarly, one can merge *Pekka pudotti pallon* 'Pekka dropped the ball', but also *Pallo pudotti Pekan* 'ball dropped Pekka', two sentences which are syntactically identical yet semantically they are a world apart. Figure 3 illustrates these assumptions.

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[4]   Payne approaches theories of grammatical relations from a bird-eye perspective, going through a host of relevant issues, such as case marking, pivot behavior, valence, semantic roles, pragmatics, salience and "alignment". He also discusses the way how grammatical roles are distinguished by case marking under valency changes, giving rise to, for example, the familiar nominative-accusative and ergative-absolutive patterns.
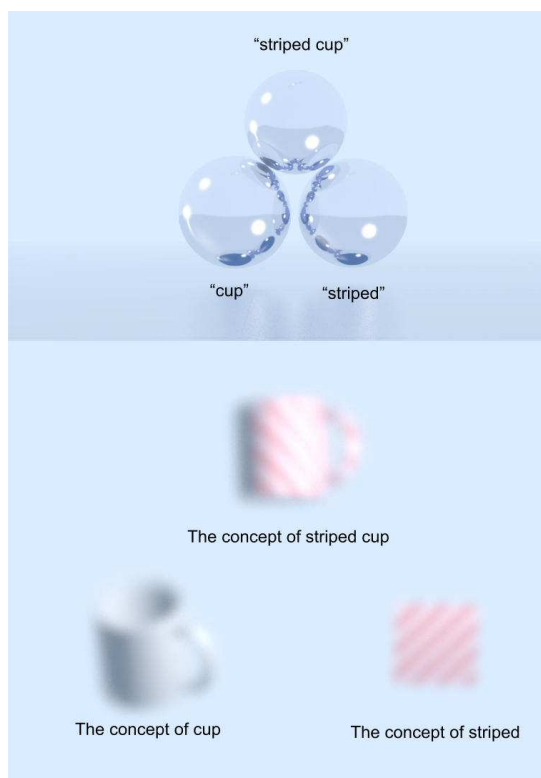
Figure 3. According to the generative position, language (words, sentences) and meaning (concepts, thought) are, in principle, independent objects. They are, however, connected with each other. The point of contact is referred to as "Logical Form" (LF), here represented by the surface plane. Above that surface, there is language and its computational operations (e.g. lexical items, Merge). Below lies a world of concepts, thinking, planning, action and free will. The world of linguistic representations and conceptual representations are linked systematically with each other. This is how the word *cup* comes to be linked with the concept CUP, the word *striped* with the concept STRIPED, and a complex phrase *striped cup* with a cup that has stripes all over it. A phrase *colorless green idea* refers to nothing, and there are likewise thoughts and experiences which cannot be fully described by words only (e.g. musical melodies). In addition, this view suggests that the operations above the plane and operations below the plane are supported by their own, partially independent neuronal networks. Thus, it becomes possibly to lose one's language without losing one's ability to think, and vice versa.

An opposite perspective is proposed by the semantically and functionally oriented theories. They "take the stance that linguistic forms or grammar should not exist without an essential tie to something conceptual or functional" (Payne, Chapter 13, p. 226–7). The functionalist perspective is discussed in this book further by Paul J. Hopper (Chapter 24, "Usage and syntax") and Laura A. Michaelis (Chapter 25, "Construction Grammar and the Syntax-Semantics Interface"). The latter assumes that "semantic constraints and use conditions are directly associated with the phrase-structure rules that define constructions, rather than being 'read off' syntactic representation" (p. 422). What should capture our attention here is the phrase "directly associated". Although this view accepts the notion that syntactic forms and symbols do exist, semantics is still *constitutively* linked with such objects.

Going back to Figure 3, the idea is that the "separation plane" doesn't exist. Even if there might be some types of formal symbols, they are constitutive parts of semantic units and, hence, the two are inseparable. Thus, when we combine the words *striped* and *cup* into *striped cup*, there is no independent, autonomous syntactic operation which puts the words together; we combine some image/representation of a cup with an image/representation of the stripes, so that the stripes are painted on the exterior surface of the cup (see Figure 3). Helasvuo (Chapter 5) thus points out that, in a semantics-based grammar such as Langacker's cognitive framework, syntactic constituency is seen "primarily as a part-whole hierarchy" and it is related "to other aspects of human cognition suggesting that constituency is not unique to grammar or to language but that it is a general feature of our cognition". It emerges "from more basic phenomena such as conceptual grouping, phonological grouping, and symbolization" (p. 73). Everything has an unbreakable connection to meaning. We will return to this theme shortly, but first we'll have a look at another controversy.

The term "construction grammar", mentioned above, introduces another

substantial point of disagreement. While the current generative theory assumes just one recursive process (Merge), in construction grammar there are as many ways of doing combinations of linguistic units as there are constructions (passives, middles, transitives, intransitives, dative constructions, psych-verbs, interrogatives, relative clauses, etc). Each of these has potentially its own rich semantic and use properties. Michaelis' chapter on construction grammar discusses this dimension. Note that the interaction between syntax and semantics, and the question of whether there is just Merge or a list of constructions, are two independent issues. For some reason, however, the construction grammatical viewpoint often goes in tandem with the semantics-based theory of syntax.

The two positions – one that goes with one operation, Merge, and the other which assumes an open-ended catalog of operations, constructions – are diametrically opposed to each other. I have remained skeptical of the construction based view. I would like to illustrate where I think the empirical disagreement lies by picking up another topic discussed in this volume: A-bar movement. It is discussed in several chapters ("Scrambling" by Francisco Ordóñez (Chapter 9), "*Wh*-movement" by Luis López (Chapter 18) and "Topic, Focus, and the Cartography of the Left Periphery" by Luigi Rizzi (Chapter 26).

To illustrate, we consider Finnish. In this language *wh*-interrogatives are formed by putting a *wh*-pronoun at the beginning of the clause. These *wh*-pronouns do not, however, appear out of the blue. They are matched with an empty slot further down in the sentence. In addition, the *wh*-pronoun must bear the morphosyntactic markers of a regular DP that would otherwise occupy that empty position. See example (1).

(1)   **Kenet**   *Pekka*   *tiesi*   *että*   *Merja*   *tapasi*   __   *eilen?*
      who.ACC   Pekka   knew   that   Merja   met   yesterday
      'Who did Pekka know that Merja met yesterday?'

There is, therefore, a grammatical dependency between the *wh*-pronoun at the front and the empty slot "__" in another position. In the generative theory, that dependency is called "*wh*-movement", suggesting that the *wh*-pronoun had been moved from its canonical position to the left edge of the clause.[5] Some theories do not assume that there is *wh*-movement, but all theories recognize that there is a dependency between the *wh*-word and an empty postverbal position "__" that would otherwise be filled by an argument noun phrase.

Huhmarniemi (2012) noted that in Finnish it is not sufficient to move the *wh*-pronoun to the left edge of the clause. Several movement steps (or movement dependencies, if one wishes to resist the term "*wh*-movement") must often precede the final operation, as shown in example (2a) and Figure 4, which illustrate the same thing by using a relative clause. If we move the relative pronoun directly, an ungrammatical sentence results (2b).

(2) a.   *saari*   {{***jota****$_1$*   *kohti*   __$_1$}$_2$ *purjehtimalla* __$_2$}$_3$ *pääsemme*   *kotiin* __$_3$}
         island   which   towards   by.sailing   we.get   home
         'an island, by sailing towards which we can get home'

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[5]   More recently, movement has been captured in terms of remerge, which portrays the operation as a form of Merge. There is no distinct movement operation. Even so, the basic premise of the movement analysis remains: the *wh*-pronoun is first merged to its canonical position, and then operations (Move, Internal Merge) are applied which make it reappear at the left edge.

b. *?*saari*   ***jota****₁*   *pääsemme*   *kotiin*   *purjehtimalla*   *kohti*   __₁
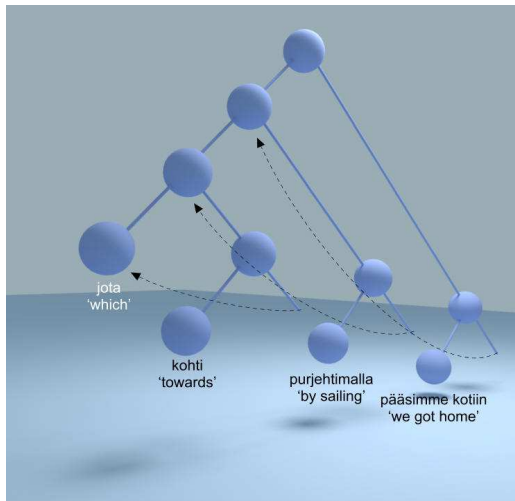   island   which   we.get   home   by.sailing   towards

Figure 4. Derivation of relative and interrogative clauses in Finnish, according to Huhmarniemi (2012), involves several movement operations (in other words, dependencies between pronouns and gaps). The normal word order of the target sentence without the relative pronoun is *Pääsimme kotiin purjehtimalla kohti saarta,* lit. we got home by.sailing towards island, which is reversed due to the presence of the relative pronoun. The relative pronoun "snowballs" out of the structure on its way up to the left edge.

Huhmarniemi & Brattico (2013) observe that the intermediate movement steps in (2a) have same properties as the movement that dislocates just one *wh*-pronoun to the left edge. What this means is that there exists a general operation which applies to an infinite number of constructions, to whole sentences (e.g. example (1)) as well as to subsentential constituents (2a) and, moreover, it moves *wh*-pronouns, relative pronouns, focus elements and many others (Chomsky, 1977). It applies in an *across-the-board fashion*, irrespective of any particular "construction". Thus, when a property belongs to a particular construction, or to a family of related constructions, a good solution might be to apply the construction-based analysis. We will encounter this type of data in the next section. When it spans over all or several types of constructions instead, a general rule might be at issue.

We can now return to the issue, touched upon earlier and discussed in the book under review, of how language and thought interact. One view says that laws of syntax – how words arrange themselves into expressions – are at least in part independent of meaning and thought. The semantics-based view denies this assertion. It claims that the laws of syntax *are* the laws of thought, since syntax cannot be dissociated from meaning. Put this way, the matter is straightforwardly empirical. Take Finnish relativization in example 2 and Figure 4. The semantics-based view must claim that when the relative pronoun crawls higher in the expression, the process follows some law of thinking or cognition, perhaps a limitation of language processing. To examine what that law might be, we construct minimal pairs, such as (3a-b/4a-b), in which the first contains movement (pronoun-gap construction), the other doesn't, and then observe what semantic/processing difference emerges. Such a difference, if it accompanies the change every time, constitutes a candidate for a semantics- or use-based explanation.

(3) a. *saari*   {*jota*   *kohti*   __}   *purjehdimme*   (movement)
         island   which   towards   we.sailed
         'an island towards which we sailed'
     b. island   {towards which}   we sailed   (no movement)
         'an island towards which we sailed'

(4)   a. *Pääsimme   kotiin   purjehtimalla   {saarta   kohti ___}*   (movement)
           we.got   home   sailing   towards   island
           'We got home by sailing towards an island.'
       b. *Pääsimme   kotiin   purjehtimalla   {kohti   saarta}*   (no movement)
           we.got   home   sailing   towards   island
           'We got home by sailing towards an island.'

The syntax-centric view asserts that such pairs do not have to differ in meaning or in terms of processing load, say, since some operations take place independently "above the plane". Some mechanical, computational arrangement must be at stake. A champion of such a hypothesis must observe some syntactic, perhaps configurational property which always accompanies movement. It is not, of course, sufficient to stipulate that the mechanism must be syntactic. So the point of disagreement is empirical; and the correct answer is not known.

It is worth repeating that both views claim that syntactic operations can potentially *correlate* with meaning. Rizzi's chapter, to which we return later, shows how movement triggers specific discourse-related interpretations. This is possible in the generative theory, since the syntax-centric view posits close ties between properties of syntax and properties of meaning. "The fact that correspondence between formal and semantic features exists", Chomsky (1957) wrote, "cannot be ignored. These correspondences should be studied in some more general theory of language that will include a theory of linguistic form and a theory of the use of language as subparts" (p. 102). To repeat, the syntactic theory has *both* a syntactic and a semantic component, while the semantic-based theory only involves the latter.

Another perspective from which to analyze the situation is as follows. Recall that moving the relative pronoun directly from its base position to the left edge results in an ungrammatical string of words (2b, repeated here as 5a). Figure 5 illustrates the operation.
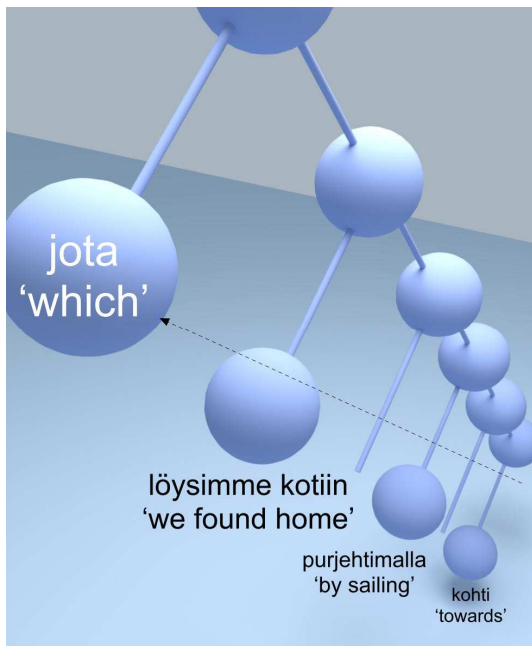

Figure 5. Extracting the relative pronoun directly without the help of intermediate dislocation leads into an awkward sentence in Finnish (and, likewise, in many other languages). This example is a graphical illustration of (5a). Example (5b) is structurally similar, but grammatically worse. (The representation is simplified in that the adverbial is most likely merged to the structure in a different manner, but this doesn't affect the main point.) This explanation assumes that there are syntactic mechanisms which build and move linguistic representations.

(5)   a. *?*saari*   *jota₁*   *pääsemme*   *kotiin*   *purjehtimalla*   *kohti*   ___₁
          island   which   we.get   home   by.sailing   towards
      b. *saari*   *jota₁*   *tavoitimme* *heidät*   *purjehtimalla*   *kohti*   ___₁
          island   which   we.reached   them   by.sailing   towards

Ross (1967), in a seminal study of this type of data, suggested that in examples such as (5) the relative pronoun attempts to move out from a *grammatical island*. The term "island" refers to the fact that the pronoun is confined inside an environment (adverbial clause) from which it cannot escape. We must now look at several examples where something similar happens, and observe what they all have in common. If it's about semantics, then there must be something semantically impossible in configuring or grouping 'us', 'the island', 'sailing' and the 'directions' into a single coherent image or a mental representation, much like it is impossible to think about squared circles or colorless ideas (Figure 6).
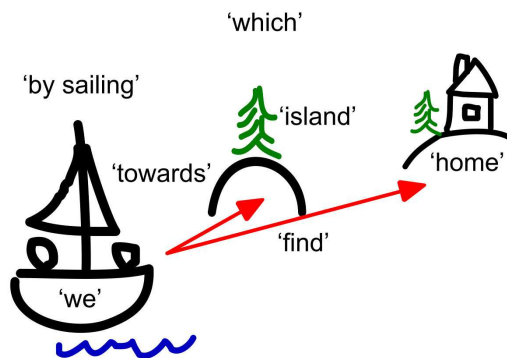

'which'

'by sailing'

'island'

'towards'   'home'

'find'

'we'

Figure 6. A possible semantic/picturesque representation of the example **jota löysimme kotiin purjehtimalla kohti __,* lit. which we.found home by.sailing towards __, which contains various conceptual ingredients such as 'we', 'home', 'sailing', 'finding' and directions. The assumption in anybody's theory must be that something like this may happen in the human mind when we produce and/or understand the sentence. The semantics-based theory will have to add that there must be some property P in this representation that prevents one to put the relative pronoun at the front of the clause, and the same property must then correspond to is-lands more generally. The property must be missing when extraction is possible, e.g. *towards which island did we think we would sail __ to find our way home?* Property P doesn't need to be semantic, it may have something to do with use, language function: anything that is not syntax *sui generis*.

In this way, we can always compare syntactic and semantic hypotheses, given a data fragment.

Turning now to the discussion of *wh*-movement in the present volume, López' chapter on "*Wh*-movement" mostly reads as a data-driven introduction to what is known about various *wh*-movement constructions and islands. The discussion assumes a syntax-centric view. There is a short introduction to the current minimalist theory of *wh*-movement, but most of the material is covered in a theory-neutral, easy-to-read form. I find López' distinction between proximal and distal causes of movement particularly illuminating. The distinction has to do with how to explain *wh*-movement. A *proximal explanation*, according to López, tells us what syntactic (or other) mechanisms implement the operation; distal explanation relates the phenomenon "to the functionality of language within the cognitive systems with which it interfaces". Let me first make a brief comment concerning the latter, following closely López' exposition.

Interrogatives or relative clauses transform canonical clauses in some ways.[6] A relative clause, for instance, denotes a predicate or property. Thus, the two relative clauses in (6a-b) designate different predicates.

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[6]   Pamela Munro (Chapter 8) addresses word ordering, concentrating on the typological distribution of various   basic word orders (e.g., SVO vs SOV).

(6)   a. *a car* **which** *Mary fixed* __
                    |---------------------|
                    (smaller predicate, 'Mary fixed x')
        b. *a car* **which** *John thought Mary fixed* __
                    |----------------------------------|
                    (bigger predicate, 'John thought Mary fixed x')

Notice that (6a) presumes that Mary fixed something, while in (6b) it is only in John's thought that Mary did anything. Perhaps Mary did nothing. The difference comes to scope. In (6a), the predicate is 'Mary fixed x'. In (6b), the predicate is 'John thought Mary fixed x'.[7] It is of course not an accident that the relative pronoun *which* marks the beginning of the predicate. This might be its exact function. Movement is thus related to an operation which crafts predicates out of sentences, and, at least in these examples, it marks the beginning of the predicate. There is, therefore, a functional and/or semantic explanation. That explanation is "distal" in López' sense, as it situates to operations within a much broader communicative-cognitive context. (Remember again that the syntax-centric theory does *not* deny the existence of semantics; rather, it is the semantics-based theory which denies the existence of syntax.) In the generative nomenclature, we would say that the purpose of these computational operations is to craft something intelligible for the interface between syntax and semantics. It says: "Do this, and the semantic component will understand what you are doing". This would be a "distal" explanation, too.

The proximal explanation wants to say something of the actual mechanisms implementing these functional tasks. And there is much to say. By saying that movement marks the logical scope of the predicate we have said nothing concerning islands or snowballing, to begin with. The standard generative proximal explanation goes as follows. We begin from the assumption that the relative clause (or, an interrogative) is headed by a functional element, call it C(*wh*), which marks it as a relative clause and not, say, a declarative. C(*wh*) must be matched with the relative pronoun within its scope, like a quantifier must be matched with a variable in the standard Fregean logic. The relative pronoun represents the variable, the "unknown" part. Matching, which is a grammatical operation, may then be followed by movement. Movement, in turn, is a variant of Merge: an existing constituent is remerged or recycled, thus, merged again. Each step is a concrete computational operation performed on some phrase-structure representation. They are *designed to explain islands, snowballing, and other empirical phenomena related to wh-movement*. These assumptions are illustrated in Figure 7.

I want to emphasize once more that, once we admit that there are independent syntactic operations, the proximal explanations can be seen as a form of computational operations which *implement* these manipulations in a concrete sense. Distal explanations, in turn, can abstract away from the actual causal-cum-computational mechanisms and search for their place within a web of broader cognitive and communicative functions.

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[7] Technically speaking, the relative pronoun marks the scope of the lambda-operator that binds the variable inside the phrase. The operator plus the variable constitute the predicate.
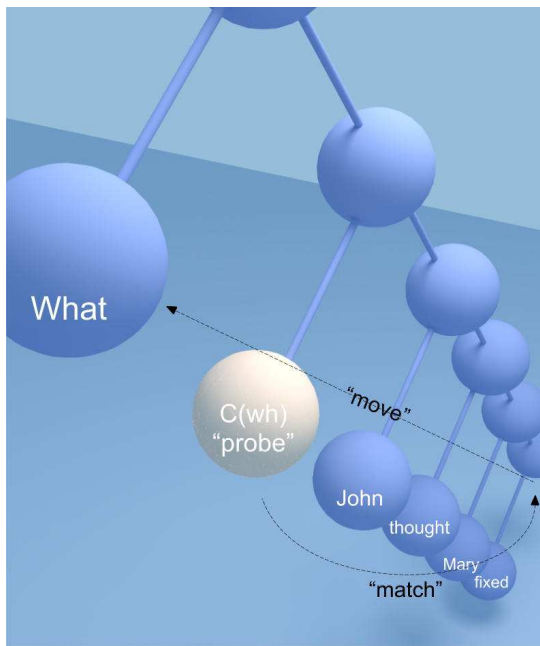
Figure 7. Proximal causes of *wh*-movement. The predicate is marked as such by the merge of a predicate-forming element C(*wh*). The element, a probe, is highlighted in some manner, alerting the derivation that it cannot proceed until certain operations have been performed. We can think that it transmits a distress signal. Thus, the element is matched with a variable downstream ("match" arrow). In some languages, and in some constructions, movement of the variable then follows ("move" arrow). That movement is plausibly just some form of remerge, thus, one constituent is merged twice: first to its base-position, and the later to a new position. The operations silence ("check") the probe, so that it will cease to transmit distress signals. Derivation continues. Islands, snowballing, *wh*-in-situ configurations and other observed phenomena are explained as byproducts of these computational-mechanical operations. Notice that the processes are computational: they operate on concrete structures, and obey strict structural limits.

Our discussion of *wh*-movement and the illustration in Figure 7 has left one particular but important detail without mention. We have looked at interrogatives and relative clauses, both constructions which require something to occupy the left edge position in Finnish and English. But phrases and words which are either topicalized or focused have similar tendencies. Topic represents givenness, something that is known by both the speaker and the hearer; focus represents new information. In Finnish, the left edge is associated with contrastive focus, as shown in (7).

(7) **Pekkaa** *Merja* *rakastaa* __, *ei* *Jukkaa*
     Pekka.PRT Merja loves not Jukka
     'It is Pekka who Merja loves, not Jukka.'

When the patient object of the verb *rakastaa* 'to love' is moved to the left edge in this way, it expresses the presupposition that the hearer (and possibly also the speaker) at first assumed that it was somebody else than Pekka who Merja loves, and the sentence denies this presupposed proposition and claims that, no, it was Pekka. Pekka is, in a sense, highlighted in this particular contrastive role. It is called contrastive focus/topic, because the sentence is contrasted against other sentences presupposed in the background. As example (7) shows, discourse interpretation is associated with the left edge of a clause, much like interrogativization and relativization. It is for this reason that the left edge is said to represent not only scope, but also matters related to discourse. In Chapter 26, Luigi Rizzi reviews what is currently known concerning such scope-discourse properties of the sentential left edge, paying particular attention to topic and focus. He discusses mainly Italian, a language where the left edge is known to consist of several functional projections, each associated with a particular scope-discourse interpretation. To the extent that this is true, a richer set of functional projections, called a "cartography", constitutes the clausal left edge. Thus, Figure 7 is a simplification: it only shows one left edge projection C(*wh*). But it might nevertheless be here, at the outermost edge of a clause, that language represents the attitude a speaker is taking towards the clause he or she wishes to utter or contemplate. The left edge perhaps functions as a 'gateway'

between the clause-internal syntax and clause-external world of discourse.

Wh-movement is, in short, a phenomenon with multiple dimensions and many faces. It presents a complex phenomenon that is challenging to analyze. I will conclude with López' words: "*Wh*-movement is one of the topics in generative grammar that has inspired the most literature. After literally hundreds of articles, theses, and books, we have learned many facts about its syntactic and semantic properties and cross-linguistic variation. However, there is great controversy as to how to put everything together in a comprehensive theory" (p. 312). Linguistics is still waiting for its own James Maxwell to distill the complex mess into a coherent, elegant and unified theory.

Giuseppe Longbardi and Giuseppina Silvestri (Chapter 7) review some aspects of the syntax of noun phrases, and mostly focus on the argument structure and its syntactic and morphosyntactic realization. The approach is cross-linguistic, with an emphasis on the genitive Case. It is written with a strong generative orientation, but in a manner that is likely to be helpful for typologists, too. If anything, this section show how complex issues a theory of syntax must deal with. Space constraints prevent me to discuss this complex topic. In approximation, the nominal domain is like a twisted clausal domain: there are in this domain argument structures, agents, patients, passivization, grammatical operations such as *wh*-movement, Case assignment, argument hierarchy, head movement, event tense – in short, many of the things we encounter in the clausal domain – but it all works strangely, as if the clausal template would be forced into a domain where it doesn't quite fit. It is, therefore, one of the long-standing problems to explain how the nominal domain relates to the clausal domain. Their similarities are obviously not accidental, yet there are also profound differences.

3   Lexicon

Expressions are made of word-like units. A complication in this proposition is that phonological words do not appear to be monolithic atoms, instead, they are constituted by morphological, syntactic and semantic parts. Often these parts manifest themselves in a semi-productive way, making it more difficult to disentangle the true laws from entropy. "Words are peculiar", Mark Aronoff wrote many decades ago, "not only in that not all of those that should exist actually do, but also in that those which do exist do not always mean what they are supposed to mean, or even look like what they are supposed to look like" (1976, p. 18). Take the English word *uneasy,* which is made of two components, *un-* and *easy.* Its composition suggests that it means 'not easy' or 'difficult'. Yet, it means something like 'uncomfortable'. Thus, "Words, once formed, persist and change; they take on idiosyncrasies, with the result that they are soon no longer generable by a simple algorithm of any generality" (p. 18).

A typical generative position is to assume that phonological words, when productively generated, are assembled out of lexical and functional information (morphemes, clitics) which emerge to the structure by the courtesy of Merge and are then "repackaged" into word-like units by grammatical processes (Figure 8).
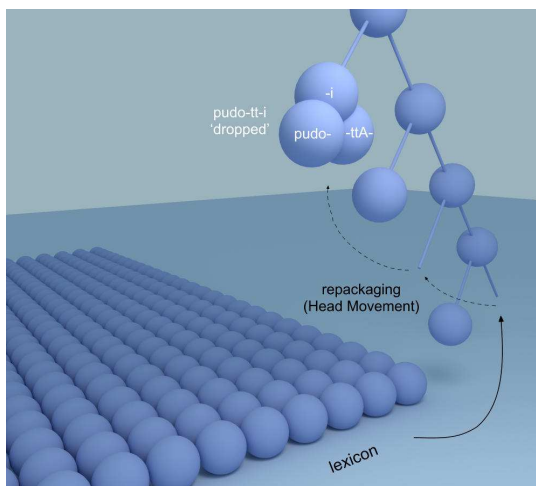
Figure 8. Phonological words are rarely monolithic atoms, instead, they are bundles of properties. These properties could be phonological, morphological, syntactic and semantic. In the generative theory, most such features are first merged individually to the structure from the lexical repository and then bundled dynamically, as shown in this figure. The figure shows composition of finite transitive verbs out of three elements: intransitive verbal head V, transitivizer verbal head v, and tense T. Some lexical items have complex structure already when they enter derivation. Gender features are a good example. One could claim that entries such as *uneasy* are produced in the lexicon, due to their idiomatic, non-compositional meaning. If so, then the lexical repository decipited here as a collection of linguistic atoms will contain complex bundles as well. Syntactic theories differ in how much initial, subsyntactic lexical structure they posit.

To illustrate word packaging, consider the fact that in Finnish, the negative word *e-* 'not' can be merged with the complementizer (8a-b).

(8)   a. *Pekka   uskoo   että   Merja   ei   rakasta   häntä*
          Pekka   believes that   Merja   not   love   him
          'Pekka believes that Merja doesn't love him.'
      b. *Pekka   uskoo   ett-ei   Merja   __   rakasta   häntä*
          Pekka   believes that-not Merja   love   him
          'Pekka believes that Merja doesn't love him.'

The negative head moves up and joins the complementizer node one step higher, where they accompany each other together to constitute a single phonological word *ettei* 'that-not'. But why not say that the complex word *ett-ei* 'that not' is merged directly to the structure?

Heads which are on their way up in the structure must observe certain limits. For instance, they can only move one step at a time. They do not skip positions. In Finnish, if we insert an interrogative word between the complementizer and the negation, the process halts (9b). The negative word must now adjoin to the interrogative pronoun instead, because it occupies the next node up (9c).

(9)   a. *Pekka   pohtii   että   miksi   Merja   ei   rakasta   häntä*
          Pekka   wonders that   why   Merja   not   love   him
          'Pekka wonders why Merja doesn't love him.'
      b. **Pekka   pohtii   ett-ei   miksi   Merja   __   rakasta   häntä*
          Pekka   wonders that-not why   Merja   love   him
          'Pekka wonders why Merja doesn't love him.'
      c. *Pekka   pohtii   että   miks-ei   Merja   __   rakasta   häntä*
          Pekka   wonders that   why-not Merja   love   him
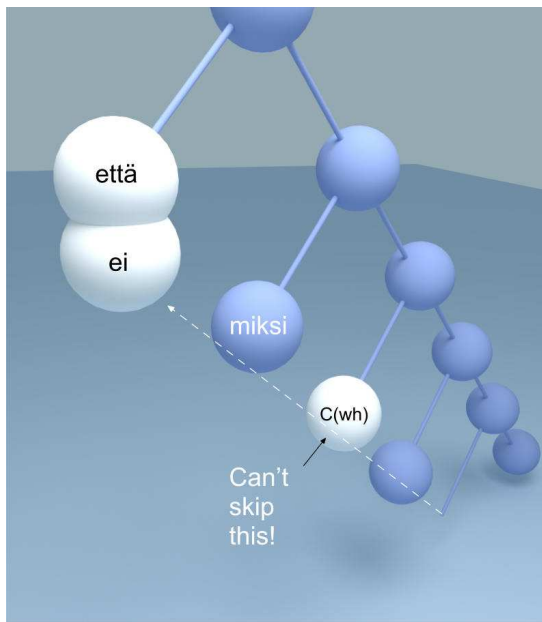
This illegitimate movement is illustrated in Figure 9.

Figure 9. Movement cannot skip potential positions. Here the negative word wants to skip over the interrogative head C(*wh*) hosting the interrogative pronoun *miksi* 'why'. This produces an ungrammatical sentence. Instead, the negative word must be hosted by the interrogative. This produces *Pekka pohti että, miks-ei Merja rakasta häntä,* lit. Pekka wonders that why-not Merja __ love him.

This suggests that the process is syntactic, not lexical, as it observes independently motivated syntactic constraints. The question of how much lexical packaging is done by syntax and how much of it is accomplished by another means is much debated. Even the generative theory alone has taken several extreme and opposing positions, and hypotheses oscillate violently, partly because of the "basic trouble with morphemes", as pointed out by Aronoff: "Because words, though they may be formed by regular rules, persist and change once they are in the lexicon, the morphemes out of which words seem to have been formed, and into which they seem to be analyzable, do not have constant meanings and in some cases have no meaning at all. It is this persistence which forces us to adopt a lexicalist hypothesis" (p. 18). If we pay attention to these worries, one quickly notices that the problem is something construction grammar could easily accommodate.

There is no separate chapter on the morphology-syntax interface in the volume under review, however. Instead, the matter is distributed into several chapters dealing with various constructions such as passives and antipassives (Edward L. Keenan, chapter 14), middle and reflexive (Leonid Kulikov, Chapter 15), causatives (Jae Jung Song), and these chapters are, rightfully, oriented towards syntax. The discussion revolves around questions such as how lexical properties and mechanisms affect argument structures, case marking and semantics. The exposition is quite theory-neutral, perhaps geared towards the construction grammatical view.

4   Agreement and beyond

We have covered aspects of the lexicon, Merge/recursion and movement. The first provides the atoms, the second makes molecules, and the third rearranges both. There is a fourth phenomemon. When words are put together into complex arrangements in syntax, they interact with each other. We observe that depending on its position in the syntactic structure, a word may take different forms. Nouns are case-marked, verbal elements are marked for phi-features (number, person, gender, and the like).

In the generative theory, these interactions are conceptualized by means of Agree. Agree obtains between functional and lexical units, under which they exchange features (properties). Exchange of features leads to case assignment and phi-agreement. To take again a Finnish example, noun phrases in complement positions of many functional heads are assigned the partitive case (in the unmarked case), while noun phrases in the subject positions of finite-agreeing verbs are assigned the nominative case (example (10), Figure 10).

(10) *Pekka halusi syödä leipä-ä*
  Pekka.NOM want.3SG to.eat bread-PRT
   <---------------> |---------->
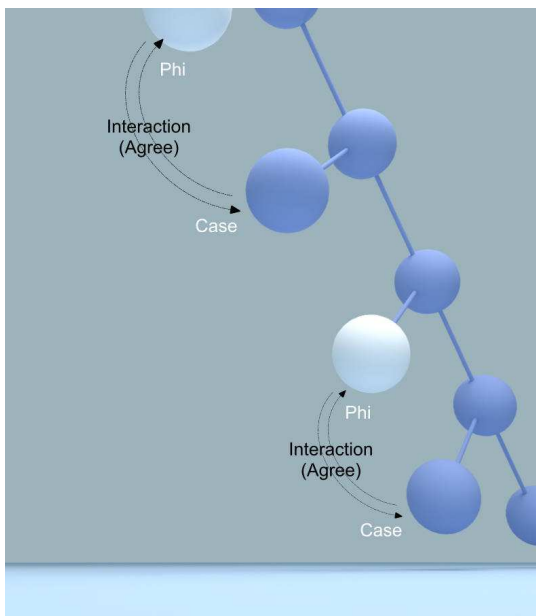   AGREE(P,G)   AGREE(P,G)

Figure 10. Agreement holds between syntactic objects, usually functional and lexical (or perhaps phrasal) items. The standard generative theory says that agreement causes noun phrases and functional heads to exchange phi- and Case-features, leading to what we refer in a theory-neutral sense as Case assignment and phi-agreement. Typically the interaction is depicted as a binary, one-to-one relation that is confined to local domains, here to structurally adjacent items.

Agreement is an essential ingredient of natural language syntax. But why? Agreement is like the magnetic force before Maxwell: everybody knows it's there, a lot is on record about what it does, but we don't know what it is and why it exists. Mechanisms of Agree are discussed in some detail in Chapter 21 entitled "Negation" by Liliane Haegeman and Terje Lohndal, in which the authors review some aspects of the syntax of negation and then concentrate on the interplay between negative concord and the theory of Agree.

What is under discussion in this chapter is the following. If we look at example (10) (see also Figure 10), it appears as if agreement would constitute a local one-to-one relation. The finite verb interacts with the subject, and the transitive verb interacts with the object. This provides an elegant and simple picture: you put constituents close enough, and they exchange properties. You put them too far, and they do not interact. In Finnish, this assumption turns out to be wrong, as shown by data such as (11).

(11) a. *Me näi-**mme** Merjan ottamassa lääkke-**en***
   We.NOM saw-1PL Merja.ACC to.take medicine-ACC
   'We saw Merja taking the medicine.'

    b. *Me   näh-**tiin**   Merja   ottamassa   lääke-**0***
       We.NOM saw.IMPASS Merja.NOM to.take   medicine-NOM
       'We saw Merja taking the medicine.'

Here the form of the finite verb, more exactly, its voice, affects the case forms of two direct objects, one of which is not local to the verb (Vainikka & Brattico 2014). In the recent generative theorizing, this situation has been handled by assuming that agreement can take a one-to-many form and thus instantiate a multiple agreement relation or Multiple Agree (12).

(12) a. *Me   näimme Merjan   ottamassa   lääkkeen*
       We.NOM saw.1PL Merja.ACC to.take   medicine.ACC
                  |--------->
                  |------------------------------------->
                  Agree(*näimme, Merja*) + Agree(*näimme, lääkkeen*)

One element at the top of the clause, the finite verb (or functional items therein) affects several elements downstream. Haegeman and Lohndal's concern is whether the negative polarity phenomenon should or should not be explained similarly. In Finnish, the negative word *e-* requires direct objects within its domain to be in the partitive Case, the accusative being impossible (13a). In addition – and this is what Haegeman and Lohndal address in their chapter by citing data from West Flemish – negative polarity item have similar properties (13b-c). It is as if the influence of the negation were "spreading" to several items across the sentence, or even over several sentences.

(13) a. *Me   emme   nähneet   *Merjan/Merjaa   ottamassa *lääkkeen/lääkettä*
       We   not.1PL see   Merja.ACC/PRT to.take   medicine.ACC/PRT
              |------------------------>
              |--->
       'We didn't see Merja to take the medicine.'
    b. *Me   emme   nähneet   ketään   ottamassa   mitään*
       We   not.1PL see   anybody.PRT to.take   anything.PRT
              |------------------->
              |-->
       'We didn't see anybody to take anything.'
    c. **Me* *näimme ketään   ottamassa   mitään*
       We   saw.1PL anybody.PRT to.take   anything.PRT

If this holds, then one item, negation, interacts with several items. Such interactions cannot be confined into local one-to-one domains after all. In contrast, Haegeman and Lohndal argue based on data from West Flemish that Multiple Agree runs into wrong predictions concerning negative concord and propose that agreement is, after all, a local one-to-one relation. Apparent multiple agreement patters are, according to this analysis, sequences of local agreement relations.

     I discussed this chapter in detail because the controversy plays a pivotal role in recent theories of syntax. The question is whether grammatical dependencies are *always* local. Consider again the following two phenomena: relative pronoun movement (2a-b) and head movement (6a-c). Relative movement triggers snowballing, as the pronoun

climbs higher and higher in the structure (14a). The relative pronoun moves, takes the rest of the phrase with it, and moves again, until the whole party reaches the destination. Head movement, likewise, collects adjacent items as it curls up (14b).

(14) a. *saari* {{ *jota*   *kohti*   __} *purjehtimalla* __} *pääsemme kotiin*   __
          island   which towards   by.sailing   we.get   home
      b. *Pekka*   *tiesi* *ett-ei* *Merja*   __   *rakasta* *häntä*
          Pekka   knew   that-not Merja   love   him

If we pause here for a moment, it is easy to see that these examples have something in common. Both operations target the closest position available and, as we have seen, ungrammaticality results when a potential target position is skipped. At least since the early 1990s it has been theorized that these and similar limitations are due to a general, perhaps even a supramodal "least effort" principle according to which syntax minimizes effort. This would then explain why movement operations must target the closest possible position, and why skipping is rejected. When you are tired and climbing up the stairs, you might not want to put up extra effort and skip steps. Perhaps syntax is like that. It is against this background that nonlocal and multiple agreement patterns are particularly interesting: they provide a way to test this prediction empirically. They constitute key specimen in assessing the hypothesis that language is lazy.

The hypothesis that language is lazy, in turn, constitutes an essential part of the recent *minimalist theory of grammar*. Vieri Samek-Lodovici discusses minimalism in Chapter 27. He makes a novel and intriguing proposal, namely, to use the optimality theory (OT) as a framework for minimalism. But let us first go back in time to try to see what is at stake. In an interview conducted around 1979-80, Chomsky says that "it might be a fundamental error to search for too much elegance in the theory of language". He was concerned with the possibility that the neural systems supporting linguistic processing "developed the way they did in part accidentally" (Chomsky 2002, p. 56), and would, therefore, be inherently messy, redundant and full of quirks and ad hoc mechanisms. Perhaps the brain does contain, as a consequence of its long and accidental evolutionary history, considerable amount of irreducible entropy. Indeed, as pointed out by Chomsky, this was a serious possibility; I think it still is.[8] Enter the least effort principle: if it's true that several grammatical processes can be attributed to an underlying least effort property, then it might be that there is much less randomness in language than what there could be.

This hypothesis invites another idea. The hypothetical least effort principle is certainly of such a character that it does not need to be syntax- or even language-specific. There is certainly nothing inherently language-specific in optimality. In other words, the least effort properties have an independent motivation, a language-external constitution if you will, that need not refer to linguistic categories specifically. The Minimalist Program (Chomsky 1995) is an attempt to find what's at the other end of this road if we desire to see it through: how much of natural language, syntax in particular, can be explained by assuming independently motivated, language-external factors?

Well, how much? By asking this question we have arrived at the horizons of current understanding. We don't know. Due to its omnipresence, most of the field is currently pushing towards proposing minimalist analyses and using minimalist notions, whatever data one happens to stumble upon. Since it's a research program, it is immune

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[8]   The matter is discussed in Brattico (2008), where I defend the idea that with regard to many aspects of human cognition, this might be a realistic (and somewhat pessimistic) scenario.

to refutation. Research programs are inevitably established and explored, until they are exhausted and abandoned by future generations. Thus, there being so much minimalist theorizing is not, in and itself, indicative of anything substance-wise. It will be an interesting journey to see where it works and where it doesn't. Samek-Lodovici's contribution, though, is to inject an OT-style conflict resolution mechanism to the minimalist architecture of grammar. The idea is that linguistic constraints or principles are first allowed to conflict inside what appears to be quite standard minimalist architecture, and the expression (derivation) involving the least amount of conflict will be generated. In other words, a global conflict resolution algorithm is added on the top of an existing minimalist theory. He illustrates the hypothesis by explaining properties of the Italian left edge by using an OT-style analysis. This is one possible path for pursuing the minimalist vision. I have seen data from Finnish which could potentially support it. Hence the proposal is interesting, but not a small matter, since global conflict resolution, too, requires a proximal, causal mechanism for its support.

Thus we have arrived at where the matters stand today or so I believe. Few years into the future, and I hope this review, like much of the research that motivates it, will be perceived as dated.

5   On acquisition

Maria Teresa Guasti (Chapter 23) provides a short survey on the topic of language acquisition. The question is how all these and other operations are acquired during the first few years of human development. The question is relevant historically. During the structuralist-behaviorist era, it was assumed that languages constitute arbitrary collections of learned structures. This view went hand-in-hand with the belief that languages are fundamentally simple things, much like behaviorists believed that humans are like pigeons. What happened when rigorization took place was that languages suddenly did not look simple at all. It is impossible to deny today, given the amount of published research, controversy, and huge volumes of scientific literature, that languages are, in reality, complex things. The present volume is one testimony to that proposition. The reason this goes with the strong nativist position is that if it took the whole mankind several thousand years to discover something as simple as *wh*-islands, not to speak of all those syntactic phenomena filling the pages of scholarly literature, it makes no sense to assume that every human child somehow "reasons" all that out during his or her first few years, whether his learning abilities are equivalent to pigeons or to adult cognition.[9]

How is it possible for every child to acquire something so complex that adults cannot, by looking at the same evidence and beyond, understand its principles? We must, of course, provide the child with a rich structure to begin with, such that it will guide him

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[9]   One objection I've seen goes back to the structuralist position and claims that syntax is, against all the evidence in the scholarly literature, simple. Another possible objection grants children some form of magical rationality, something adults lack. Tomasello (2003) advances both claims. According to him, "children have at their disposal much more powerful learning mechanisms than simple association or blind induction" while "there exists plausible and rigorous theories of language that characterize adult linguistic competence in much more child-friendly terms than does generative grammar" (p. 3). Indeed there exists. But if children are so clever, and languages are so simple, we adults must be totally inane to waste taxpayers' money on writing companions after companions to things like whether *wh*-movement is at root syntactic or semantic. Something doesn't add up.

or her towards the adult state without missteps. But it is here that the complexity of language provides a challenge. "Recognition of the unsuspected richness and complexity of the phenomena of language created a tension between the goal of descriptive and explanatory adequacy", Chomsky (1995, p. 4) noted, referring to the opposing requirements of describing natural languages in all their complex and individual glory and of providing the one, rich, innate and universal initial structure every human child must be endowed with to succeed in the acquisition task. The first factor presses one to describe every language as its own complex world, while the second suggests that all language must be, at bottom, just the same. "This tension", Chomsky continues, "defined the research program of early generative grammar" (p. 5).

The implication is that languages should be similar to each other. Of course they are. I know of no language where, for example, a *wh*-pronoun could be extracted out of a relative clause, in a manner illustrated in (15).

(15)   *Mitä   Pekka   tapasi miehen,   joka korjasi __?*
        what   Pekka   met   a man,   who fixed
        'which x such that Pekka met a man, who fixed x'

This sentence is just horrible. But suppose that such a language were attested. Still, most languages do prevent extraction from a relative clause and this cannot be a coincidence. If unrelated languages exhibit identical properties, there is virtually nothing short of a miracle to explain their presence except an innate factor. Guasti illustrates these questions surrounding the mystery of language acquisition by looking at empirical evidence concerning the acquisition of three phenomena: word order, displacement (*wh*-movement and relativization) and locality.

5   On methodology

The first four chapters of the volume under review deal with linguistic methods and methodology. William Croft criticizes certain methodological maxims underlying linguistic analysis, generative linguistics in particular, and proposes a "rigorous, justifiable method" (p. 19). Much of that method comes down to a requirement that hypotheses should be validated cross-linguistically in various ways (items 1, 2, 4 and 5 on pages 19–20), plus a requirement that distributional patterns should be examined "in detail" (item 3). In addition, Croft is skeptical concerning the cross-linguistic utility and validity of syntactic notions, and proposes that linguistic universals should be distilled from semantic-functional concepts. As an example, he suggests we should give up making cross-linguistic generalizations based on the shadowy notion of "adjective", and use "words that denote property concepts" instead (p. 21). We are by now familiar with these themes, as they were discussed in the earlier portion of this review. I find much to recommend here, and again there are good historical precedents. Before Kepler, astronomers were assuming planetary orbits to be perfect circles. It was only after analyzing huge blocks of obscure astronomical data (coming down from Tycho Brahe) and painstakingly aligning one hypothesis after another over that dataset that Kepler was able to see that the orbits are elliptical, not perfect circles. That is, the crucial step was possible because Kepler followed Croft's maxim: analyze all data available in full detail.

Whether such a thorough analysis will lead into anything useful is somewhat context-dependent, however. There are examples of data torture that have led nowhere,

and occasions when what looked like extremely narrow experimentation or observation has resulted in a breakthrough. Of the latter, a good example is Max Planck's discovery of quantum mechanics (hence transistors, computers, satellites, and so on). That happened when he examined an idiosyncratic phenomenon called black body radiation, a peripheral corner of "physical reality". The fact that it was such an extremely narrow phenomenon which opened the gates for a revolution was, furthermore, completely accidental. My understanding is that most of the interest in the black body radiation at that time was based on an industrial desire to build efficient light bulbs. Planck nevertheless had some odd results to explain. When he was willing to surrender to the weight of the observations, physics entered a new quantum era. It is therefore also true that an "intensive study of particular languages", as noted by Chomsky (1982), can "give deeper insight into UG than less far-reaching study of a wide variety of languages" (p. 92).

Marianne Mithun discusses field methods in Chapter 3. "In my own work, after recordings have been made", she observes (p. 33),

> . . . I typically work through the material with one or more speakers phrase by phrase, to transcribe, analyze, gloss, and translate it. In the course of such work, speakers provide a check on the acceptability of the forms used and can point out inter-speaker variation. They have insight into the meaning of what is said beyond literal translations. They can untangle reference. They can provide the back story behind discussions that would make little sense otherwise. They may comment on the semantic and social implications of certain structural choices. For me, the most interesting discoveries about syntactic structure tend to emerge from this work.

This constitutes a holistic, open-minded and innovative way to interact with the informants, there being no aprioristic regulations or limits on acceptable procedure. Why should we block syntactic, semantic, pragmatic, cultural or extralinguistic intuitions and observations from entering our theorizing? In a similar open-ended way, Mark Baker (Chapter 2) talks about "Hypothesis Testing in the Minimalist Program" (Chapter 2), taking notes of similarities and differences between naturalist (generative) linguistics and natural sciences, while Maria Freddi addresses corpus methods (Chapter 4). I learned from both chapters.

All in all, the book has been an interesting and inspiring read. Syntax is a lively, flourishing and an important field of study, with many results to its name. But what we currently have is only a beginning.

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