

A SINGLE INTERPRETATION FOR HUNGARIAN ‘FOCUS POSITION’*

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1. Introduction

This paper is concerned with the position in the Hungarian sentence known as ‘focus position’ (henceforth FP)¹. My concern is the nature and range of the interpretive content of FP; that is, what meaning the position actually encodes. This will, inevitably, have important consequences for attempts to characterise its structure: in contrast to the majority of recent analyses, FP is here taken to be a single position whose inhabitants are indicated by the evidence of complementary distribution in surface structures. Indeed, this work can be viewed as an investigation into the following question: if one makes the assumption that complementary distribution is evidence of a single position, then what is the significance of the position FP at the syntax-semantics interface (at LF, or the equivalent in any given framework)? I assume here the heuristic principle (1), adapted from Szabolcsi (1997), as the principal available means of investigating the semantic processes prompted by syntactic configurations.

- (1) What range of expressions actually participates in a given process is suggestive of exactly what that process consists in².

The conclusion that I will come to is that the different expressions found in FP can indeed be interpreted according to a single ‘process’. This process, however, must be expressed as a pragmatic procedure, rather than as a statement expressible in model-theoretic semantic terms. Such an observation has important broader theoretical consequences: it implies syntactic encoding of radically underspecified meaning representations, and it broadens the role of pragmatic processes considerably beyond what most linguists currently assume. In this respect, this work expands on arguments developed within the Relevance Theory literature (see, for example, Sperber and Wilson 1986, Kempson 1988, Wilson and Sperber 1993, Carston 1999).

2. The surface characterisation of FP

FP is identifiable at the surface as an immediately pre-verbal position which bears a pitch accent, while the following verb (and possibly also post-verbal material) is de-stressed. The principal categories that can appear in this pre-verbal position are listed in (2).

* I am grateful to Anna Babarczy, Ronnie Cann and Caroline Heycock for helpful comments and suggestions relating to this work.

¹ Since I shall argue that the position in question does not directly encode focus readings as such (although a kind of focus is one effect of it, in context), my use of the term ‘focus position’/FP is intended as a purely mnemonic, pre-theoretical label (it should not, for example, be necessarily associated with FP in the sense of ‘focus projection’ in various Principles and Parameters accounts).

² I have here substituted ‘expressions’ for Szabolcsi’s ‘quantifiers’. There seems no reason in principle why this approach to the syntax-semantics interface should be restricted to quantificational matters.

- (2) a. ‘Verbal modifiers’ (VMs), including
 (i) ‘prefix’ particles
 (ii) bare (object) nominals
 b. Exhaustive/identificational foci.
 c. Quantified noun phrases containing (most) modified numeral quantifiers.
 d. The negative particle *nem*

The well-known fact that these items are mutually exclusive in the immediately pre-verbal position is demonstrated by examples like (3)³. The items in question are italicised.

- (3) a. János *megette* az almát.
 János up-ate the apple
 ‘János ate (up) the apple.’
- b. János *nem ette meg* az almát.
 János not ate up the apple
 ‘János didn’t eat (up) the apple.’
- c. Mari *levelet ír*.
 Mari letter writes
 ‘Mari is letter-writing.’
- d. *MARI ír levelet*.
 Mari writes letter
 ‘It’s Mari who’s letter-writing.’
- e. *Több, mint hat diákunk értette félre* a kérdést.
 more than six students.3pl understood aside the question
 ‘More than six of our students misunderstood the question.’

Meg and *félre* are prefix VMs. (3a) shows their unmarked pre-verbal position, while (3c) demonstrates the same for bare object nominals. (3b) shows how VMs are postposed in the presence of sentential negation and (3d) shows pre-verbal focus, with its characteristic cleft-like interpretation, having the same syntactic effect. (3e) (example (54) from Szabolcsi 1997) shows how the quantified NP *több, mint hat diákunk* in FP also causes post-posing of a VM, yet apparently without sharing the characteristic interpretation of pre-verbal foci.

Jo (1995) notes that there exists a fairly common cross-linguistic pattern whereby syntactically focused expressions and items like the Hungarian VMs compete for a verb-adjacent slot. This in itself may be taken as an initial motivation for the current approach of trusting the surface distribution as evidence for a single FP position in which all such items appear. Were the Hungarian facts the result merely of a ‘conspiracy’ of independent factors, drawn from the different domains of discourse pragmatics, the syntax of verbal modification/incorporation and the semantics of quantification, or were it largely due to the particular

³ Foci and negative *nem* are not mutually exclusive pre-verbally, but still cannot both occupy FP when they do co-occur. See section 3.5.

arrangement of verbs and their prefixes in Hungarian (as Brody's (1995) verb-movement analysis of FP would suggest), then one would not expect any such pattern to be repeated in other languages with any consistency.

Still, the range of expressions listed in (2) seems, at face value, to be too diverse to be possibly encapsulated in a single interpretive generalisation. A clue to how this may nevertheless be achieved comes from Szabolcsi's (1997) discussion of the interpretation of modified numeral quantifiers (henceforth MNQs). Although Szabolcsi in this work explicitly assumes that the interpretation of MNQs involves a quite different process to the interpretation of syntactically focused items, I will show in the next section that there are good syntactic reasons to believe that MNQs and FP foci, at least, are in fact manifestations of a single phenomenon. The interpretive basis for this is provided by re-assessing the interpretive strategy that Szabolcsi proposes for MNQs, shifting the emphasis from model-theoretic semantics to inferential pragmatics. An important consequence of this is that the exhaustivity associated with FP foci need not and should not be encoded in the syntax. Following discussion of MNQs and foci, I will show how, with appropriate adjustment, the proposed interpretive strategy can encompass also the interpretation of VMs, showing the way to a single process encoded by FP. Inferences over the types of expression found in FP in different contexts account for the diverse interpretive effects that follow from this general strategy.

3. *Focus and MNQs*

3.1. *Syntactic evidence*

There is strong distributional evidence that 'PredOp' MNQs and FP foci in fact occupy the same position and, moreover, that they perform a similar interpretive function in relation to the rest of the sentence⁴. Certain classes of expression, including non-increasing quantified noun phrases (a sub-set of the MNQs) are traditionally described as being restricted to appearing only in FP. There is only one situation in which these expressions can appear elsewhere in the sentence. This is when FP is occupied by a focus, in which case the restricted expression may appear post-verbally (if it is de-stressed). If MNQs and foci in FP are indeed the same kind of object, it should be the case that an MNQ in FP is sufficient to license the post-verbal appearance of a non-increasing MNQ, just as a recognised focus would. This is indeed the case, as exemplified in (4). Thus, 'PredOp' MNQs license a distribution which is otherwise only licensed by clear cases of FP focus – a strong indication that they actually occupy the same FP position.

- (4) Jánosnak kevesebb, mint hat lány adott legfeljebb három könyvet.
 János.DAT fewer than six girl gave at-most three books.ACC
 'To János, fewer than six girls gave at most three books.'

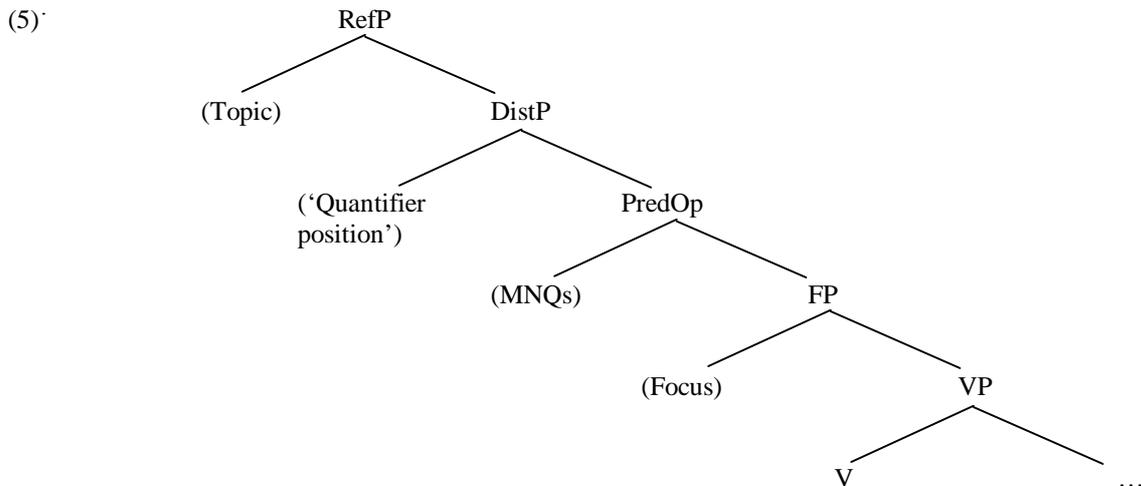
Note also that the distinction between monotone increasing and non-increasing MNQs in this respect is paralleled by the difference between so-called 'inclusive' and 'exclusive' adverbs, the exclusive adverbs being restricted to FP or to being post-verbal and de-stressed (É. Kiss 1987:90). This cross-categorical generalisation corresponds to no obvious natural class at the level of denotational semantics, lending support

⁴ I understand that Balázs Surányi, in unpublished work, has independently raised arguments similar to those in this section and some of the following sections.

to the idea that an appropriate characterisation of the interpretation of FP is more likely to take the form of pragmatically informed procedures.

3.2. Szabolcsi's 'semantic procedures' approach to MNQs

Szabolcsi (1997) assumes the following structure for the pre-verbal part of the Hungarian sentence. 'PredOp' is the position to which MNQs are said to move⁵.



Szabolcsi's primary reason for assuming Focus and PredOp to be separate positions is the *prima facie* difference in interpretation observable in the apparently obligatory exhaustive interpretation of syntactically focused elements, which is not generally associated with MNQs. Her Focus projection therefore encodes 'exclusion by identification': effectively an exhaustivity constraint on the expression appearing there at LF (see Szabolcsi 1994 for details). This essentially *ad hoc* move means that the interpretive process associated with Focus ends up being quite different in kind to that associated with PredOp and the other pre-verbal positions. The latter are defined not in terms of constraints on the truth-conditions of the sentence, but rather in terms of the dynamics of establishing constituent denotations and assessing truth-conditions. The key procedural distinctions are summarised in Szabolcsi (1997) as follows.

- (6) a. **RefP/DistP:** "start out with a set determined by the quantifier and check its members for some property" (p.125). That is, establish a subject of predication (the witness set of a QNP), then predicate something of it⁶.

⁵ Szabolcsi in fact does not commit herself as to whether Focus should be considered an entirely different syntactic projection or some kind of structurally identical but interpretationally different alternative to PredOp. However, her heuristic (1) implies that each syntactic position should encode a distinct 'process' at LF, making only the former option coherent. In either case, it is clear that Szabolcsi proposes two quite distinct forms of interpretation.

- b. **PredOp**: “[perform] a counting operation on the property denoted by the rest of the sentence” (p.122).

In order to compare the statements in (6) directly, the quotation in (6b) could be paraphrased as ‘start out with the rest of the sentence and evaluate the quantifier in terms of it’. When thought of in this way, the interpretive procedure proposed by Szabolcsi for MNQs (in PredOp) begins to resemble a description of how focus readings are produced, making the complementary distribution of these expressions seem not so much a matter of coincidence as evidence of their resulting from a single process, encoded in a single position. This idea is developed in the next section. The superficial difference between Focus and PredOp readings – exhaustivity – is dealt with in section 3.4 as the result of different inferences over the process encoded by FP.

3.3. Applying the same approach to focus

There is an obvious sense in which focus can be related to the notion of ‘starting out with the rest of the sentence’. This is through the idea of a ‘focus-frame’ or ‘open proposition’, which is presupposed information, in contrast to the ‘new’ or ‘asserted’ information represented by the focus.

To interpret a focus, there must exist an open proposition which represents an assumption (or part of an assumption) which is either already held by the hearer or which may be accommodated by the hearer as a pre-existing assumption in the context (for example, it may be obvious to the hearer that the speaker held this assumption beforehand). When some other information is interpreted against the background of such an open proposition, it receives a focus reading. In this sense ‘the rest of the sentence’ is logically prior to the focused element in the process of interpretation. This brings out the parallel between Szabolcsi’s analysis of MNQs and the interpretation of foci: in both cases, it is necessary to ‘start out with the rest of the sentence’.

If this connection is to be maintained, it is necessary to examine the status of the ‘procedural’ account of MNQs. While Szabolcsi discusses procedures involved in assessing truth values – essentially a formal semantic notion, which may or may not be considered to be a procedure that occurs in real time – the procedures involved in the interpretation of focus are of a less mathematical, more cognitive kind, concerning speakers’ and hearers’ access to world knowledge as well as their linguistic competence.

There is evidence that the procedural interpretation of MNQs should also be analysed at the latter (cognitive) level. It seems that when an MNQ appears in FP (as many MNQs must) it does indeed require a presupposed open proposition in exactly the same way as a focus does. This predicts that a sentence with an MNQ in FP would not be felicitous in an ‘out-of-the-blue’, ‘fully presentational’ utterance. This is borne out by native speaker intuitions.

As a further, informal illustration of the presuppositionality of the rest of the sentence when a MNQ is in FP, note how this is in fact implicit in the strategies which must be used to distinguish between different quantifier readings in translation – including those employed in Szabolcsi (1997). Consider, for example, Szabolcsi’s examples in (7) (her (58) and (59)).

⁶ In Szabolcsi’s analysis, the difference between RefP and DistP lies in the kind of witness set constructed: a minimal witness set in the case of RefP; non-minimal in the case of DistP. I shall not pursue the characterisation of these positions in this paper.

- (7) a. Tegnap sok diákunk megbetegedett.
 yesterday many student-1pl pfx-sickened
 ‘There is a set of many students of ours such that each fell ill yesterday.’
 b. Tegnap sok diákunk betegedett meg.
 yesterday many student-1pl sickened pfx
 ‘The students of ours who fell ill yesterday were many.’

In order to capture the different possible interpretations of *sok NP* ‘many NP’ (which acts like a MNQ with respect to interpretation in FP), Szabolcsi, in her translation of (7b), leaves the quantifier alone in a post-copular position which typically has an ‘identificational’ function and hosts the focus of the sentence. Gathering the rest into a definite NP reflects the importance of this material having a presupposed status⁷.

It appears, then, that the interpretation of MNQs can be subsumed under the same procedure as that involved in syntactic ‘focusing’: interpretation in the context of an open proposition. As the translation of (7b) illustrates, with MNQs it is in fact the quantifier itself, rather than the whole quantified noun phrase, which is interpreted against an open proposition. So native speaker intuitions about a variety of contexts confirm, for example, that a presupposition that ‘some number of our students fell ill yesterday’ is necessary to make (7b) felicitous (assuming that the stress within the quantified NP falls on the quantifier). Hence it seems reasonable to assume that the appearance of MNQ noun phrases in FP is due to the quantifier undergoing the same process that produces the focus reading, while the rest of the noun phrase in question is pied-piped into FP.

If MNQs in FP undergo the same process as syntactically focused expressions, it remains to be explained why they do not appear to have the same exhaustive interpretation as foci. This difference can be accounted for by independently necessary inferential pragmatic processes, as the next section outlines.

3.4. The exhaustivity difference

The above discussion may appear to imply that FP directly encodes the use of an open proposition. In fact, I shall argue below that this is not the case; that instead FP encodes a somewhat more general procedure. However, the *effect* of this procedure when a full noun phrase or quantifier occupies FP will indeed always be a requirement to access and then complete an open proposition. This intermediate generalisation will therefore suffice in the discussion of how MNQs and FP foci can appear to differ in the matter of exhaustivity, while still both being the result of a single interpretive procedure.

The sense of exhaustivity that is associated with FP foci has been characterised in various ways in the literature on Hungarian, but most of these characterisations share the idea that it is in some way encoded in the semantic contribution of FP, whether as exhaustivity as such (e.g. Szabolcsi 1983) or ‘exclusion by identification’. (e.g. Kenesei 1986, Szabolcsi 1994). Another possibility, however, is that the sense of

⁷ I assume throughout this paper a pragmatic definition of presupposition, along the lines of Stalnaker (1974), allowing the sense of presupposition that accompanies an open proposition to be equated with the presupposition engendered by a definite NP. The cognitive background to this is made clearer below, in the discussion of Relevance Theory (section 3.4.1).

exhaustivity arises not from any strict constraint on the interpretation of FP but rather from of the interaction of some more general effect of FP with pragmatic processes – in other words, by implicature. This approach naturally allows for variation in the output of interpretive processes, since it grants significant influence to the ever-varying factor of context. Below, I shall outline how the pragmatic approach can account for the observed effects of FP with MNQs compared to other constituents.

First, however, since the discussion is turning to inferential pragmatic processes, it is important to outline some assumptions about the pragmatic domain. And since a broader aim of this paper is to begin to explore how the role of pragmatics may impact on the scope of other mental modules in explaining linguistic phenomena, it is worth adopting one of the most cognitively well-grounded and broadly applicable of existing pragmatic frameworks, Relevance Theory. In the next section, I give a necessarily very brief outline of the framework – for a full presentation and comparison to other pragmatic approaches, see Sperber and Wilson (1986).

3.4.1. *Outline of Relevance Theory*

Relevance Theory (henceforth RT) approaches the notion of context from a human cognitive point of view; not in terms of direct representations of external reality, but in terms of evidence about reality which is necessarily filtered through human communicators' perceptual and cognitive abilities. Any utterance is interpreted relative to the hearer's 'cognitive environment', which is defined as all the assumptions for which an individual is able to create a mental representation and accept as true or probably true (with varying degrees of commitment), given available evidence. Such assumptions are said to be 'manifest' to the individual – roughly speaking, this means they are accessible, being directly perceivable or inferable from other manifest assumptions, without the individual necessarily being conscious of them. Any pair of communicating individuals will share a certain cognitive environment, consisting of assumptions manifest to both individuals. When it is also manifest to the individuals that they share these assumptions, they are said to be 'mutually manifest' and to form a 'mutual cognitive environment'⁸.

The concept of a mutual cognitive environment is crucial to facilitating human communication, as it allows speakers to judge in what context their hearers will interpret a given utterance and thereby to formulate utterances in such a way as to ensure that the intended meaning will be recovered⁹. The aim of an act of communication can also be defined in terms of cognitive environments: successful communication enlarges the mutual cognitive environment between individuals.

A given utterance is not interpreted against all of the assumptions in a mutual cognitive environment, however, since this will include many irrelevant assumptions and assumptions of different degrees of accessibility. Instead, speakers can be said to guide hearers to construct an appropriate context for the interpretation of an utterance, in the sense of accessing those assumptions which are involved in reaching a

⁸ This avoids a number of problems with the Gricean notion of 'mutual knowledge'. See Sperber and Wilson (1986;42).

⁹ Of course, speakers may sometimes misjudge what is mutually manifest, leading to failures of communication. As Sperber and Wilson point out, the ability to account for the fact that communication is not always successful is one of the advantages of a heavily inferential model over the more traditional '(de)coding' model of linguistic interpretation.

particular meaning – by forming premises for logical deductions, or restricting the context for reference assignment, for example. Sperber and Wilson propose a simple mechanism by which speakers judge which assumptions hearers will access in response to a given stimulus: the Principle of Relevance. This essentially states that hearers seek to optimise the communicative rewards of processing an utterance, relative to the effort that this processing demands.

Rewards come in the form of ‘contextual effects’, which are of three kinds: the strengthening of existing assumptions (increasing the hearer’s commitment to their truth), the contradiction (and elimination) of existing assumptions, or the creation of contextual implications (logical implications which arise only from the interaction of incoming and existing assumptions). Note that contextual effects are always derived from the interaction of ‘new’ information gained from the incoming utterance with ‘old’ assumptions from the cognitive environment – this is consistent with the intuition that information to which an individual has no prior point of contact is not relevant to that individual, while it is clearly a waste of effort to process information which has no new elements to it. Speakers, knowing that hearers wish to maximise the ratio of contextual effects to effort, must tailor their utterances accordingly. Thus every utterance can be said to carry a presumption of optimal relevance – a guarantee to the hearer that it is worth processing.

Note what this means for speaker and hearer, respectively. The speaker must guide the hearer to the intended interpretation via the ‘easiest’ route, indicating the contextually most accessible assumptions that will interact with the hearer’s current assumptions in such a way as to produce the intended contextual effects. This means, in turn, that the hearer may stop at the first interpretation he arrives at which is consistent with the presumption of optimal relevance, and may assume that this is the intended interpretation (this means that no effort is wasted on comparing different possible interpretations). In addition, the presumption of optimal relevance means that hearers can use the relative processing effort of an utterance as a measure of how rich the intended set of contextual effects must be. Given this presumption, a relatively costly utterance must communicate that there are relatively rich contextual effects to be gained from its interpretation. This argument is the basis of the relevance-theoretic analysis of, among other things, metaphor and irony, but will come in useful in the analysis of Hungarian FP in explaining aspects of interpretation which have been attributed to factors internal to the grammar.

3.4.2. Inferential pragmatics, exhaustivity as implicature, and communicated contrastivity

From the pragmatic perspective, two important issues arise concerning exhaustivity effects. The first is the origin and status of exhaustivity: is it a normal result of general pragmatic processes or a layer of meaning which is determined specially by the presence of features or operators? The second issue is the degree to which exhaustivity forms part of the message communicated by an utterance, as opposed to being effectively a by-product of the communicated message. I shall discuss each of these issues in turn and then indicate how adequately addressing both leads to an explanation of the difference in exhaustivity readings between FP foci and MNQs.

Most analyses of Hungarian FP suggest that exhaustivity is a ‘marked’ variant of focus, in the sense that a special grammatical operation exists to express exhaustivity, meaning that non-exhaustive focus is the default. In this way, exhaustivity is seen as ‘added’ to the meaning of a new/asserted item, whether in the lexicon (by the presence of a feature) or in the syntax (by an exhaustivity/identification operator). Pragmatic theory, however, suggests that the opposite should be the case. Thanks to what have become known (from

the Gricean model) as ‘quantity implicatures’, asserted information is generally expected to contain all relevant information in a given context; hence it is expected to be exhaustive (relative to the context). Quantity implicatures are best illustrated using the traditional heuristic for focus, *Wh*-question-answer pairs.

Notice that an open proposition closely resembles a *Wh*-question in an important way: both represent incomplete propositional structures. Indeed, the act of requiring a hearer to access an open proposition as part of the interpretation process – which I have argued to be the principal effect of the use of FP with MNQs and foci – may be likened to asking a question at the point of also supplying the answer. The interpretive connection between open propositions and questions has been noted by linguists in the past in the way the truth conditions of questions have been rendered using representations which closely resemble representations of focus meaning (see, for example, Erteschik-Shir 1997, Steedman 2000, in the context of Rooth 1992). The connection also exists through the use of FP structure in Hungarian (with *Wh*-words appearing in FP). For clarity of exposition, I shall continue to discuss exhaustivity effects in terms of questions and answers, assuming that the analysis carries over to open propositions. I shall then point out how the open proposition structure can be manipulated beyond this.

Consider an exchange in English such as (8).

(8) (Mary:) Who did you see? (John:) I saw SUE.

Assuming John’s answer contains normal, falling focus intonation, Mary should interpret it as meaning that Sue is the only contextually relevant individual that John saw. Note how the RT notion of constructing context is useful here. Mary’s question is extremely context-dependent and therefore only felicitous when the mutual cognitive environment contains accessible assumptions about such factors as the time, place and restricted set of individuals that Mary is interested in. For example, she may be implicitly enquiring about family members (at a celebration, say), or linguists from a particular university seen at a particular conference. Such assumptions may have become manifest as a result of previous discourse, but may also derive from other sources of evidence. In any case, a context is created by the interaction of the question asked and the cognitive environment in which it is asked and John’s reply is expected to be exhaustive within this context. Exhaustivity should not, therefore, be thought of in simply truth-conditional terms – even with spatio-temporal co-ordinates supplied, John’s answer in (8) may not be truth-conditionally exhaustive, but would still be understood as exhaustive in the relevant context (if he saw many friends at a celebration but only Sue from his family, for example)¹⁰.

In Grice’s framework, such implicatures follow from the Maxim of Quantity, which instructs speakers to be as ‘informative as is required’. This rather vague notion is made more explicit in RT, through the notion of optimal relevance. Any given piece of information should only be included in an utterance if it increases the yield of contextual effects to a greater degree than it increases the burden of processing. Recall that part of communication is the restriction of the context for interpretation. A *Wh*-question contributes to this in a particular way, seeking the assertion of some item that plays a particular role in the context. In such circumstances it is clear that any item that exists within the indicated context and which fulfils the relevant role in that context will produce contextual effects. If answering with reference to one such item improves

¹⁰ Exhaustivity could still be tied to truth-conditions by dynamically redefining models to contain only what is contextually relevant, of course. The point is that an adequate pragmatic theory is necessary to indicate how this should occur and that exhaustivity should therefore be analysed in the light of pragmatic insights.

the relevance of the utterance, answering with reference to all such items must improve it still further (by increasing the yield of contextual effects more than proportionally to the effort of processing). By this logic, an exhaustive answer always represents an optimally relevant answer, and therefore is always expected.

Thus exhaustivity is to be expected whenever something new is asserted in a restricted context (as in response to a question or in completion of an open proposition), with two exceptions: either where it is mutually manifest that the hearer does not expect an exhaustive answer, or where it is made manifest by the speaker that he or she is communicating only partial information. This is borne out by English data in the fact that non-exhaustive assertions (such as answers to *Wh*-questions) require special intonational signalling. The answer to a question introduced with the normal, falling focus intonation is typically taken to be exhaustive (witness Rooth's (1992) interpretation of English phonological focus, which works by the exclusion of contextually-supplied alternatives). If a speaker wishes to communicate that the answer to a question is non-exhaustive, a more marked phonological strategy must be employed: the so-called rise-fall-rise tone. Herburger (2000;50ff.) argues that this pattern can be reduced to the assumption that a falling tone indicates 'closure' or 'completeness', while a tone which ends in a rise indicates a sense of the utterance remaining 'open' or 'unfinished' in its relationship to the context. There is a clear sense in which an utterance which presents itself as 'incomplete' or 'unfinished' is more marked than one which is presented as a complete contribution to a discourse.

How does this fit with the facts in Hungarian? The existence of an apparent movement operation which is associated with exhaustive readings has led to the assumption that exhaustivity is the marked option in Hungarian; that this is the element of meaning which must be specially signalled. It is, however, equally possible to argue that non-exhaustive readings are the more marked. Horvath (2000;201) comes close to saying this in her description of non-exhaustive answers to *Wh*-questions, such as (9) (Horvath's (24); capitals indicate phonological stress)¹¹.

- (9) Kit hívták meg?
'Who did they invite?'
- a. JÁNOST hívták meg.
John-acc invited-3pl Perf
'They invited JOHN (and nobody else).'
- b. Meghívták *(például / többek között) JÁNOST.
Perf-invited-3pl for-example / among others John-acc
'They invited JOHN, for example / among others.'

Horvath notes (with an implicitly Gricean perspective) that

Since the pragmatically "normal" way of providing information e.g. in contexts like (*wh*-)questions (as in [(9)]) is to be maximally informative, any time a less than exhaustive identification of the relevant entities is provided, namely when Focus is left in situ, as in [(9b)], in Hungarian, the sentence sounds well-formed only if some explicit indication of the given information being incomplete/non-exhaustive is provided (e.g., by adding 'for example' or 'among others', or at least some rising intonation on the listed element(s) signalling the list being unfinished due to problems with recall).

¹¹ See also Roberts (1998;133) for a range of native speaker judgements which support these claims.

To this extent, the Hungarian situation appears to resemble that in English (even down to the use of rising intonation to signal an ‘unfinished’ or ‘incomplete’ act of communication). Horvath herself attempts nevertheless to link the Hungarian facts to the existence of an ‘exhaustivity operator’ which is said to determine movement to FP. She argues that the necessity to signal non-exhaustivity in Hungarian indicates that a syntactically encoded strategy “takes precedence over leaving the choice of exhaustive vs. non-exhaustive interpretation open for pragmatics”. But if this were the case, one would not expect explicit signalling of non-exhaustivity to be a necessary, marked operation also in English, which (as Horvath convincingly argues) does not have any kind of syntactic encoding of exhaustivity or focus. In any case, it seems odd that the obligatory signalling of exhaustivity should necessitate the signalling also of non-exhaustivity – rather one would expect it to *remove* this necessity, as the latter is then redundant. These problems are easily removed by recognising – as pragmatic principles in any case suggest – that exhaustive interpretations are the norm (as Horvath’s own reference to what is ‘pragmatically normal’ would seem to concur).

The resulting picture is one in which exhaustivity is indeed a property of FP foci. This exhaustivity is the result of general principles of inferential pragmatics, however, and as such need not be attributed to *ad hoc* features or operators. How, then, should one treat the claim that MNQs do not typically have exhaustive readings, when, as argued above, they do appear to be structurally – and otherwise also interpretively – parallel to FP foci? It turns out that this claim may be inaccurate; that MNQs are in fact exhaustive, although they may have a quite different impact in context to that of FP foci. To appreciate this requires an appreciation of the different levels at which exhaustivity may manifest itself. It may be a ‘background’ issue: a corollary of the act of asserting something against an open proposition, by the logic of pragmatic inference, but not a key part of what the speaker intends to communicate. On the other hand, the exhaustivity implicature may be brought to the fore as a key part of the message conveyed, in which case some sense of contrast with expectations or alternatives is felt to be part of what is communicated (only in the latter cases should Hungarian FP be translatable using an English *It*-cleft, *contra* É. Kiss 1998).

Again, RT is of help in explaining the distinctions involved. The two types of exhaustive interpretation can be related to two of the three categories of contextual effects. Recall that one of these is ‘contextual implications’: inferences made possible (and manifest) by the combination of newly communicated and old assumptions. Such contextual implications are available in the absence of any expectations of (or knowledge of alternatives to) the incoming newly asserted information. Thus relevance may be achieved without any necessary sense of contrast. An open proposition in such a context acts to establish (or possibly merely to remind the hearer of) the existing assumptions in combination with which the contextual implications are produced. The FP constituent – the newly asserted information itself – is understood to be exhaustive in the sense that the hearer may reasonably assume that the speaker has not held back any relevant information, but this exhaustivity is not felt to be part of the essence of the message conveyed.

Another kind of contextual effect is the contradiction and elimination of existing assumptions. This clearly relates to the notion of contrast to alternatives in context – a fairly good definition of the impact of exhaustivity when it forms part of the message conveyed. In a situation in which it is mutually manifest that the hearer entertains certain possibilities (or even a loosely defined set of possibilities) for the completion of an open proposition, the speaker’s explicit use of that open proposition in conjunction with some expression in FP will communicate not only the encoded whole proposition, but also the contradiction of the alternatives to the FP expression, given that it is, by default, exhaustively asserted. In other words, speakers may

effectively manipulate the exhaustivity implicature to produce contrast and thereby provide the hearer with a different kind of contextual effect.

The claim regarding MNQs is that they are typically of the former type, relating to simple contextual implications, while FP foci are associated with the contradiction of existing assumptions. The reasons for this boil down to the nature of the different kinds of expressions and what it may mean for each to be 'exhaustive'. An obvious difference between numeral quantifiers and full NP foci is a degree of abstractness that the former possess, being values rather than denoters of entities. Entities may be recognised and characterised relative to other entities in a given context (as evidenced by the regular underspecification and high context-dependence of referring expressions), whereas other elements tend to be conceptualised in other ways. É. Kiss (1994:29-30) implicitly makes a similar point: "a focused phrase can only express identification with exclusion if it denotes an entity, that is, if it is a DP or PP", other expressions requiring special contexts to produce contrastive readings¹². From the present perspective, there is nothing special about entity-denoting expressions; they simply tend to interact with general pragmatic processes in particular ways. The use of an open proposition which is to be completed by an individual entity directs the hearer to any existing manifest assumptions about possible completions of that open proposition (that is, alternatives to the item in FP), leading to a typically contrastive interpretation.

In contrast, an open proposition that wants only a numerical quantifier signals rather the promise of contextual implications to be drawn from processing the quantifier that is asserted in FP. Any given numeral does in fact have potential alternatives: other numerical values. Nevertheless, numerals do not tend to interact with context in the same way as entity-denoting expressions, for reasons related to Krifka's (1999) observation (made within a Roothian 'alternative sets' analysis) that expressions like numerals which by definition form part of a scale have automatic, 'ever present' sets of alternatives. In RT terms, such alternatives are always manifest, but unlikely to be relevant in a given context, precisely because they have no special connection to any particular context. Hence numeral quantifiers in FP are exhaustive, but typically in a trivial way that is not felt to be a relevant part of the message conveyed. Still, particular contexts can restrict the alternative numeral values to a particular set, producing a contrastive interpretation. In analyses like that of Szabolcsi (1997), which separate MNQ position (PredOp) from Focus position, this kind of interpretation must involve a string-vacuous movement (from PredOp to Focus). Given that the interpretation is dependent on contextual factors, however, it seems superfluous to invoke structural processes to account for it as well. The present approach is able to deal with such cases without the need for *ad hoc* processes. Quite simply, it may be manifest within a given cognitive environment that there is a certain set of numerical values which may fit into an open proposition, or it may merely be manifest that there is some numerical value to be found. The former case gives a contrastive interpretation, the latter non-contrastive.

It should be noted that contrastive and non-contrastive forms of exhaustivity typically differ in the levels of contextual effects derived. As Sperber and Wilson (1986:114) point out, the elimination of previously held assumptions can be a particularly significant form of contextual effect, since it may have knock-on effects. If the assumption in question had served as a premise for the deduction of other assumptions, for example, these too will have to be eliminated. In this way, a chain of contextual effects could be set in motion, which in some cases could result in significant reorganisation of the cognitive environment. Moreover, it is quite

¹² Szabolcsi (1994) tries to represent this at the semantic level, arguing that occupants of her Focus position must be set-denoters, but this is difficult to reconcile with the existence of exhaustively focused prefix VMs, for example. Practically any expression seems capable of being an FP focus, given the right context.

possible for an FP focus (as an act of assertion) to have contextual implications at the same time as causing the elimination of existing assumptions (as a contrast with manifest alternatives). Thus there are potentially greater contextual effects to be gained from contrastive FP foci than from non-contrastive uses of FP.

The notion of optimal relevance suggests that relatively weak contextual effects should be obtained only where relatively low processing effort is required, while interpretations involving richer contextual effects should be available even in contexts which demand more effort. This idea gains some support from consideration of the contexts in which different uses of FP are likely to come about. For a non-contrastive use (such as may be found with MNQs), all the speaker need do is access an existing assumption corresponding to an open proposition and use this as a context for the processing of the item in FP. In order for the hearer to draw the appropriate contextual implications, the relevance of the proposition must be quite accessible to the hearer. For example, (3e) is likely to achieve relevance in conjunction with some contextually salient (not only manifest) assumptions such as ‘if the number of students who misunderstood the question is unusually high, we can conclude that the question was very badly worded’ or ‘if over a certain number of students misunderstand any question, their teachers tend to be blamed for preparing the students badly’. Only in a context that contains some such accessible assumptions is the open proposition structure of the utterance likely to be made relevant by the derivation of contextual implications without incurring excessive effort.

Less accessible assumptions may be invoked, however, if richer contextual effects can be drawn. This can easily happen in the case of contrastive use of FP. Rather than the open proposition as such being necessarily contextually presupposed, this kind of use of FP may constitute a requirement to construct the open proposition. When not presupposed as such, in the sense of being a salient assumption in that form, an open proposition can be still manifest, where it may be derived as an entailment of some other assumption. For example, the assumption ‘Someone loves Mari’ is an entailment of the assumption ‘Péter loves Mari’. If the latter assumption is manifest, the former is therefore also manifest, via a process of logical inference, and thus may be used as the open proposition in the processing of (10).

- (10) JÁNOS szereti Marit.
 János loves Mari.ACC
 ‘It’s JÁNOS who loves Mari.’

This extra act of logical inference represents extra mental effort, but is rewarded by the comparatively rich contextually effects which may be drawn from the elimination of assumptions.

To summarise, the facts concerning MNQs and exhaustive focus fit in various ways with a relevance-theoretic account of exhaustivity, which allows certain important differences in interpretation to follow from differences in context, rather than requiring exhaustivity to be structurally encoded. This resolves the problem of how MNQs and foci appear to inhabit the same position, FP, yet do not, on face value, derive the same interpretation from it. Up to this point, it would still be possible to maintain a view of FP as being a position to which actual foci (of a certain size) move (see Horvath 2000 for independent arguments against this idea, however). While the interpretive differences in terms of exhaustivity have been explained pragmatically, this explanation implied that the inhabitants of FP are essentially similar kinds of object, in representing the (focused) completion of an open proposition. In section 4, I propose a more radical

realignment of the burden of explanation towards inferential pragmatic processes, leading to a new, broader and strictly procedural analysis of Hungarian FP¹³.

4. VMs and the FP procedure

As mentioned in section 2, if one attempts a surface structural characterisation of the properties of FP, rather than a characterisation based on its apparent interpretive properties, the position is definable only as a stressed position immediately preceding an unstressed verb. As noted there, this kind of definition, along with the facts of complementary distribution, suggests that not only focused expressions and MNQs, but also VMs occupy FP. In the following, I shall continue to pursue the strongest hypothesis, taking complementary distribution as evidence of a single position¹⁴.

There is one element of the interpretation of verbal prefixes (henceforth PFXs) which they share with other VMs such as bare objects nominals (henceforth BONs) and which seems to have a natural connection to the use of a special, verb adjacent position. This is the sense in which all VMs can be said to form a ‘complex predicate’ with the verb. Although it covers a variety of interpretive phenomena, this generalisation is suggestive of a possible characterisation of the significance of immediately pre-verbal position and has been utilised in various other accounts, often described in terms of VMs being (syntactically and/or semantically) ‘incorporated’ into the verb (e.g. É. Kiss 1987,1994; De Hoop 1994). The possibility that these facts may in turn relate to the interpretation of (other) FP constituents is not considered in these accounts, however.

The principal forms of complex predicate interpretation in FP are as follows. PFXs combine with verbs to form a variety of new meanings, from the transparently compositional (such as *kimegy* (out-go) ‘to go out’) to the entirely unpredictable (such as *feltesz* (up-put) ‘to assume’). BONs enter into a slightly different kind of complex predicate with the finite verb. This is much more regularly compositional, showing up in a subtle (but consistently reported) intuitive contrast between the interpretation of a BON and that of a full object noun phrase. Consider Kiefer’s (1994:444) comment on an example parallel to (3c): “The correct translation ... would be something like ‘be engaged in doing something’, as in ‘be engaged in letter-writing’ rather than

¹³ For reasons of space, one significant omission from this paper is proper discussion of the negative particle. It is clear that *nem* in FP is sometimes parallel to foci and MNQs in appearing with an open proposition (note these cases of negation, like focus, have been analysed in terms of ‘alternative sets’ by Erteschik-Shir (1997:100), while it may on other occasions act more like a prefix, attaching to the verb. Section 4 should therefore be at least suggestive of how negation would be dealt with in my account of FP. Ideally, the analysis might link the distribution and interpretation of *nem* in FP also to the restriction of the mostly ‘negative’ exclusive adverbials; a matter for future research.

¹⁴ ‘Single position’ analyses of FP are often dismissed on the basis of pre-infinitival foci, which are not in complementary distribution with VMs for all speakers. Brody (1995) instead accounts for VM distribution by finite verb movement in the presence of focus, but see Koopman and Szabolcsi (2000) for arguments against this (while Koopman and Szabolcsi’s own account comes at the expense of a proliferation of highly abstract grammatical machinery). I shall ignore this problematic issue in this paper, other than to note that it almost certainly involves greater complexity than is typically recognised. A detailed investigation of the information-structural properties of infinitives and the foci that may precede them in different constructions is required before ‘single position’ analyses of the kind to be presented in this section can be properly evaluated.

‘be writing a letter’.” Clearly, this implies that the object nominal must be read as in some sense part of the verbal predicate, not simply as an argument of the verb.

How might the complex predicate interpretation of VMs fit with the uses of FP discussed in the previous sections? VMs are not typically interpreted in the context of a presupposed open proposition, so on the face of it appear to be interpretively quite different to foci and MNQs. Nevertheless, there is one common factor: in each case, the element found in FP is in some way dependent on some other part of the sentence in order to make its full contribution to the meaning of the sentence in which it appears. VMs must combine with the verb before they can form part of a meaning representation, as part of a complex predicate. Foci and MNQs, on the other hand, fail to achieve the correct interpretation unless an open proposition is identified and established as the context for the contribution of the FP element. In both cases, there is a kind of dependence on some other part of the sentence, which must be satisfied via inferences made in the process of building a representation of sentence meaning.

This generalisation, the one unifying factor across all the kinds of expression that can inhabit FP, can be expressed as a procedural rule; in effect a definition of what FP encodes. In order to state this concisely, I introduce the term ‘I-dependent’ (for ‘interpretationally dependent’¹⁵) to describe those expressions which depend on some other part of the sentence in which they appear in order to be able to make their contribution to the meaning of the sentence. The interpretive content of FP can now be captured as in (11).

(12) **Interpretation of FP:** Treat (all or part of) the constituent in FP as I-dependent.

The introduction of this kind of procedural rule means that grammatical configurations may encode a set of instructions for constructing a relevant interpretation, rather than directly encoding truth-theoretically definable semantic information. This fits well with the reasonable assumption, fundamental to RT, that the aim of a language user in producing any given utterance is to guide the receiver to accessing a meaning (a set of assumptions with relevant contextual effects). If some of this guidance is structurally encoded, the whole communicative process may be more efficient, since this effectively converts a two-stage process (decoding plus inferences to establish relevance in use) into a single-stage process (direct decoding of indications of *how* the utterance is relevant). It is worth noting in this context that Vallduví (1992) argues for a view of ‘information packaging’ (which includes equivalents of focus and topic) as a set of encoded instructions for the process of interpretation. Whatever grammatical machinery is employed (whether features and syntactic projections, operators, or any other means of formalisation), any pragmatically-based aspect of interpretation must be cashed out at some level in terms of procedures. Therefore, rather than complicating these areas of the grammar with superfluous levels of computation, it seems the simplest analysis to state that positions like FP directly encode procedures. As we have seen, this also allows for the derivation of diverse interpretive effects without the proliferation of syntactic positions.

The current analysis suggests that there are two basic ways to contribute information to a meaning representation, I-dependently or I-independently. The latter strategy implies the incremental building of propositional forms and appears to apply to the effects of all the non-FP positions of the Hungarian sentence. The ‘topical’ positions, Topic and Q-position, necessarily host I-independent elements (as is suggested by Szabolcsi’s analysis of them as direct denoters of witness sets). It is logical that topical material must be I-

¹⁵ I do not intend to imply any connection to Erteschik-Shir’s (1997) use of the term *I-dependence*, the name of a syntactic constraint in which the *I* appears to relate to ‘identification’.

independent. Topical material is the informational ‘point of departure’ for the interpretation of a sentence. In order to fulfil this function, it must be highly accessible in a given context in and of itself, not only in reference to other information. Post-verbal constituents divide into two distinct types, as signalled by the presence or absence of phonological stress. Post-verbal unstressed material is part of a presupposed open proposition, while are asserted but not I-dependent elements. In the unmarked case (recall that non-exhaustive ‘narrow foci’ must be indicated by rising intonation and/or other explicit signalling), this in fact means being a constituent part of some broader focused part of the sentence; a sub-part of the ‘comment’, in traditional ‘topic-comment’ terminology. As I-independent material, post-verbal stressed items add incrementally to the asserted information contained in the utterance, contributing their semantic information according to normal compositional rules. This contrasts with an FP item’s need to combine with some other part of the sentence in order to be considered to have made its contribution to the meaning of the utterance.

Note how the concept of I-dependence thus contributes to understanding the observations of Varga (1983), Kálmán (1985) and others that the presence of roughly equal stress on all major constituents corresponds to ‘neutral’ interpretation. A lack of de-stressed elements indicates that there is a classic ‘topic-comment’ structure, with purely I-independent elements combining incrementally to build a meaning representation. Indeed, it is a notable advantage of the unified, I-dependence analysis of FP that it produces a general correspondence between interpretation and prosodic structure. De-stressed material can be identified with the material on which an I-dependent element must depend (that is, the material with which an FP element must, one way or another, combine before it can make its contribution to sentence meaning). Thus, VMs combine with the verb to form a complex predicate and in these circumstances it is the verb alone which de-stresses. Exhaustive foci (including MNQs), on the other hand, are dependent on an open proposition and typically appear with all the material that follows them (that is, the verb and all post-verbal constituents) de-stressed. This material corresponds exactly to the open proposition, minus any Topic and any elements which are phonetically unrealised due to pro-drop (the latter, highly contextually accessible elements may be assumed to be incorporated into the mental representation of any open proposition by the same processes which allow the resolution of explicit anaphora). Thus, I-dependence appears to have a consistent phonological reflex¹⁶.

The fact that FP is the only I-dependent position can be used to explain the distribution of different kinds of expression in the Hungarian sentence. An item which is incapable of being interpreted I-independently will perforce only surface in FP¹⁷. This gives a potential way in to the study of ‘exclusive adverbials’ and non-increasing MNQs, whose parallel behaviour and restriction to FP (as mentioned above) is otherwise puzzling: the question now becomes why these items should be intrinsically I-dependent. Although I offer no answer to this complex question here, this new perspective at least opens a promising avenue of research.

VMs may appear also to be intrinsically I-dependent, but sub-sets of them – ‘literally directional’ PFXs and bare objects of result – can in fact have I-independent readings, which in turn interact with the aspectual interpretation of the sentence. The current analysis predicts that these VMs must appear outwith FP, and this

¹⁶ Roberts (1998), following the descriptions of Varga (1983), attempts to link the stressed/unstressed distinction to interpretation as focus/non-focus, but only I-dependence allows a generalisation which explains also the de-stressing of verbs which follow VMs, thus capturing the full range of the prosodic phenomenon.

¹⁷ All such items may also appear as part of a presupposed open proposition; that is, post-verbally but de-stressed. This probably should be analysed as a context in which I-dependence is neutralised or made irrelevant, presumably because an open proposition is an indication of an existing assumption which should be manifest as a whole, rather than constructed piecemeal, according to normal interpretive procedures.

prediction is borne out: in the relevant instances, these VMs appear post-verbally and stressed. According to Kiefer (1994), the relationship between aspectual readings and VM position is complex, with both FP and post-verbal positions producing either (broadly) progressive or perfective readings, depending on whether the VM found there is a PRX or a BON. This casts doubt upon any direct syntactic encoding of aspect in Hungarian, but fits well with the I-dependence account, in which all that need be attributed to syntactic encoding is a broad procedural generalisation. This allows the observed aspectual distinctions to be derived from the procedures by which different structures are interpreted, in interaction with the particular properties of the lexical items involved, which prompt certain inferences about the temporal structure of events described. It is not within the scope of this paper to discuss the details of such interactions and inferences. It is worth noting, however, that post-verbal readings of VMs do not seem to involve complex predicate formation but rather add information to the asserted part of a sentence in the manner of ‘information focus’. This explains the restriction of post-verbal PFXs to the ‘literally directional’, as the only PFXs semantically well enough defined to add information I-independently to the sentence, and the way these seem to have an adverbial, rather than predicate-internal interpretation (Kiefer1994:430). Such observations support the linking of complex predicates, on the one hand, and information-structural phenomena, on the other, to the broader notion of I-dependence.

Having dealt with the usual (‘neutral’) I-dependent interpretation of VMs in terms of complex predicate formation, it is important to note that – just as in the case of MNQs – no special operation is required to capture the possibility of VMs also taking on an exhaustive/contrastive focus reading, as illustrated in (13) (example (104) from É. Kiss 1994).

- (13) János nem KI szaladt (hanem BE szaladt).
 János not out ran but in ran
 ‘János did not run OUT (but he ran IN).’

Just as in the case of MNQs, the distinction between contrastive and non-contrastive readings in FP is a product of inferential processes, affected by differences in contextual factors, and it therefore requires no string-vacuous change of syntactic position or any *ad hoc* semantic process. The contrastive reading does not preclude the formation of a complex predicate, however, since the open proposition invoked in such situations is one which relates to existing assumptions which themselves contain complex predicate meanings. It is therefore part of the presupposed information that whatever completes the open proposition does so by forming a complex predicate with the verb. The pragmatic analysis accounts for É. Kiss’s (1994:44) observation that non-directional PFXs cannot be interpreted in this way: only the directional kind are semantically clearly enough defined to enter into contrast with each other in context.

To summarize, the import of FP is the very general procedural requirement to interpret its occupant I-dependently. This may be fulfilled in different ways. VMs are able to combine with the verb to form (certain kinds of) complex predicates and this is their usual function. In so doing, they fulfil the requirement for I-dependent interpretation. A constituent which cannot do this, such as a full NP – which furthermore is semantically rich in information and therefore otherwise expected to quite unmarkedly add this information I-independently to the meaning of a sentence – requires some other kind of structure to depend on, if it is to conform to the interpretive requirement. This is provided by the identification of a contextually accessible open proposition.

5. Conclusion/theoretical implications

Analysing Hungarian FP from the perspective of a cognitively realistic theory of inferential pragmatics leads to somewhat different conclusions to those typically reached by purely syntactic approaches. In particular, the relationship between FP and exhaustive readings is seen to follow from general pragmatic principles, rather than being a matter of stipulation using abstract syntactic devices. Pragmatic reasoning suggests that it is useful to think of exhaustivity and contrastivity as separate notions, though neither is a grammatical or semantic primitive. They are rather epiphenomena of inferential processes applied in different contexts. A full appreciation of the role of inference and context proves to obviate the need for separate positions for exhaustive foci and MNQs, such as Szabolcsi's Focus and PredOp.

Admitting the possibility of procedural encoding points to a way to explain further aspects of surface distribution without the need for complex covert syntactic operations. Although the range of interpretations found across the items which can occupy FP is quite diverse, this is unproblematic, since independently necessary inferential processes work in context to bridge the gap between the general procedural rule and the particular interpretive effects of the different kinds of expression which can serve as input to this rule. This ability to generate diverse results from a single representation is missed by accounts which restrict themselves to purely syntactic or formal semantic modes of explanation. In addition to simplifying syntax-semantics mapping, a unified, procedural view of FP also allows for a very transparent relationship between syntax and phonology. Bringing surface structure closer to both its realization in phonology and its interpretation is not only conceptually desirable in terms of theoretical elegance, but also has clear implications for theories of child acquisition of Hungarian; syntactic structures being much more easily accessible from surface forms on this view.

A pragmatically-informed notion of procedural encoding therefore potentially offers a high degree of theoretical parsimony, by reducing the amount of machinery necessary at the syntactic level, while arguably increasing the embeddability of linguistic models into more general models of cognition. This kind of approach may therefore justify a radical reassessment of many areas of grammar, of which present account of FP is intended as one example.

The proposals outlined in this paper may therefore be taken as an attempt to illustrate the potential advantages to be gained from introducing procedural encoding into the syntax-semantics interface, with an accompanying redistribution of the burden of linguistic explanation towards pragmatics. Despite challenging certain common assumptions of mainstream linguistic theory, this approach is essentially 'generative' in essence. At the same time, it allows for analyses which approach the Montagovian ideal that each syntactic operation has a unique interpretive correlate, although ironically this is achieved by abandoning the assumption that interpretation necessarily proceeds via truth-theoretic semantics. There is no reason in principle why our 'knowledge of language' should not include instructions for manipulating the elements of language alongside (or even instead of) declarative structures which impose static constraints on those

elements. Furthermore, there appear to be a number of potential advantages to employing this kind of knowledge, both in terms of processing efficiency and simplification of the grammar¹⁸.

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¹⁸ A similar point is made by Kempson *et al* (2000), who develop the framework called Dynamic Syntax. This framework assumes the radical position that *all* syntactic processes are procedural, taking the form of transitions between incomplete tree structures. It remains to be seen how the present proposal might fit into such a framework.

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