

## DEFINITENESS EFFECT VERBS

## 1. DIAGNOSING DEFINITENESS EFFECT VERBS

Hungarian has a sizable class of verbs that exhibit a so-called *definiteness effect* (DE). The verbs belonging to this class (DE-verbs) display certain properties that clearly distinguish them from related verbs with similar lexical content. Descriptively, DE-verbs are verbs of change which express that something comes into existence or becomes available in a particular fashion.<sup>1</sup> The aim of any account of DE-verbs in Hungarian should be to make this sort of characterization more precise, because not every verb of change which expresses that something comes into existence or becomes available in a particular fashion is a DE-verb. In this section, I will discuss three general prohibitions that DE-verbs exhibit before turning to my account of them in section 2.

1.1. *Prohibition against definites*

Perhaps the most striking feature of DE-verbs is that they do not permit their internal argument to be realized as a definite noun phrase just in case the clause that they head lacks a focused constituent<sup>2</sup> and the aspectual value of the clause is an accomplishment or an achievement.<sup>3</sup>

- (1) a. Sára ír<sup>de</sup> egy levelt.  
Sarah wrote a letter.ACC  
'Sarah wrote a letter.'
- b. #Sára ír<sup>de</sup> a levelt.  
Sarah wrote the letter.ACC  
'Rebecca painted a picture.'
- (2) a. Rebecka festett<sup>de</sup> egy kepet.  
'Rebecka painted a picture.'
- b. #Rebecka festette<sup>de</sup> a kepet.  
Rebecka painted the picture.ACC
- (3) a. Dániel talált<sup>de</sup> egy tojást.  
Daniel found an egg.ACC  
'Daniel found an egg.'
- b. #Dániel találta<sup>de</sup> a tojást  
Daniel found the egg.ACC
- (4) a. Érkezett<sup>de</sup> egy vendég.  
arrived a guest  
'A guest arrived.'

- b. #Érkezett<sup>de</sup> a vendég.  
arrived the guest

The natural way of correcting the (b)-sentences in (1)–(4) would be to employ a corresponding verb with a verbal particle (which is typically *meg* ‘pr<sub>r</sub>’, akin to a perfective verbal prefix; see chapter 2):

- (5) a. Sára meg-írta a levelet.  
Sarah pr<sub>r</sub>-wrote the letter.ACC  
‘Sarah wrote the letter.’  
b. Rebeka meg-festette a képet.  
Rebecca pr<sub>r</sub>-painted the picture.ACC  
‘Rebecca painted the picture.’  
c. Dániel meg-találta a tojást.  
Daniel pr<sub>r</sub>-found the egg.ACC  
‘Daniel found the egg.’  
d. Meg-érkezett a vendég.  
pr<sub>r</sub>-arrived the guest  
‘The guest arrived.’

If the clause in question has a focused constituent or if it is understood as an activity, then (what superficially appears to be) a DE-verb can appear with a definite noun phrase that realizes its internal argument, as seen in (6a) and (6b), respectively, for *festette* ‘painted’.<sup>4</sup>

- (6) a. REBEKA festette a képet (és nem SÁRA)  
REBECCA painted the picture.ACC and not SARAH  
‘It was Rebecca who painted the picture (and not Sarah).’  
b. REBEKA egész délután festette a képet.  
Rebecca whole afternoon painted the picture.ACC  
‘Rebecca painted the picture the whole afternoon.’

In the case of achievements (e.g., (3) and (4)), an activity reading is excluded for independent reasons, which leaves focusing as an option:

- (7) a. DÁNIEL találta a tojást.  
DANIEL found the egg.ACC  
‘It was Daniel who found the egg.’  
b. #DÁNIEL egész délután találta a tojást.  
Daniel whole afternoon found the egg.ACC

The most straightforward assessment of these data is that the verb forms *írta* ‘wrote’, *festette* ‘painted’, *találta* ‘found’, and *érkezett* ‘arrived’ in (5)–(7) are not instances of the DE-verbs *ír<sup>de</sup>* ‘write’, *festette<sup>de</sup>* ‘paint’, *találta<sup>de</sup>* ‘find’, and

*érkezik<sup>de</sup>* ‘arrive’, respectively, but rather of corresponding non-DE-verbs (as already suggested by the lack of the superscript ‘de’). Although these corresponding non-DE-verbs would be morphologically indistinguishable from the DE-verbs, they would differ semantically, lacking a DE-meaning. If correct, a scenario emerges in which the meaning of a DE-verb and a counterpart with a verbal particle are both based on or derived from the meaning of a corresponding non-DE-verb, as schematized in (8a) and (8b) for *fest* ‘paint’. Arguably, the activity reading of *fest* ‘paint’ (*fest<sup>act</sup>*, see (6b)) is also derived, as is suggested in (8c). In this scenario, there is no direct connection between a DE-verb, a counterpart with a verbal particle, and its activity counterpart – they are related only via the corresponding non-DE-verb.

- (8) a. fest (‘paint’) ↔ fest<sup>de</sup> (‘paint’)  
b. fest (‘paint’) ↔ meg-fest (‘pr<sub>r</sub>-paint’)  
c. fest (‘paint’) ↔ fest<sup>act</sup> (‘paint’)

The alternative would be to say that there is a single DE-verb (e.g. *fest<sup>de</sup>* ‘paint’) whose DE-meaning ‘disappears’ or is ‘neutralized’ in certain contexts (e.g. in *meg-fest* ‘pr<sub>r</sub>-paint’ and in (6)), but not only does this seem less promising, it has also never been worked out.

Strictly speaking, the prohibition against definites with DE-verbs does not rule out specific indefinites, though one has to be clear about which sense of ‘specific indefinite’ is at issue. If the speaker simply has a particular referent in mind (which is the epistemic construal), then DE-verbs are compatible with specific indefinites in this sense, as illustrated for *hoz<sup>de</sup>* ‘bring’ in (9c) (see also Bende-Farkas 2001, p. 57):

- (9) a. SÁRA hozott<sup>de</sup> egy lányt a bulira.  
sarah brought a girl.ACC the party.to  
‘Sarah brought a girl to the party.’  
b. #SÁRA hozta<sup>de</sup> a lányt a bulira.  
Sarah brought the girl.ACC the party.to  
c. SÁRA hozott<sup>de</sup> egy (bizonyos) lányt a bulira, akit  
Sarah brought a certain girl.ACC the party.to who.ACC  
régóta ismerek.  
for-a-long-time know.I  
‘Sarah brought a certain girl to the party who I’ve known for a long time.’

Less straightforward is the question of whether DE-verbs are compatible with specific indefinites in Eng’s (1991) sense of a contextually familiar set of individuals from which a novel individual is chosen. As Bende-Farkas (2001, p. 56) points out, a discourse such as the following is incoherent, which suggests that the answer is no:

- (10) a. Két diák eltévedt.  
two student got-lost  
‘Two students got lost.’

- b. #János talál<sup>de</sup> egy lányt.  
John found a girl.ACC

The girl that John finds in (10b) cannot (intentionally) be one of the students that gets lost in (10a). At the same time, however, overt partitives seem to be much more acceptable:

- (11) a. ?János talál<sup>de</sup> egyet az elévedt diákok közül.  
John found one.ACC the lost students from-among  
'John found one of the lost students.'  
b. ?Sára hozott<sup>de</sup> egyet a meghívott vendégek közül.  
Sarah brought one.ACC the invited guests from-among  
'Sarah brought one of the invited guest.'

An interfering factor in (10) is that the meaning of *talál<sup>de</sup>* 'find' (in contrast to that of *meg-talál* 'pr<sub>i</sub>-find') excludes the possibility of a previous search, and yet the coherence of the discourse in (10) would require at least a modest search by John for the lost students. Note that if one is willing to construe John's finding of a girl in (10b) as purely accidental and as unrelated to the fact that two students get lost in (10a), it is possible that the girl John finds in (10b) *just happens* to be one of the lost students. Such an accidental finding is apparently easier to construe in (11a), where there is less pressure to accommodate a preceding discourse (precisely because there is no preceding discourse). In view of these considerations, probably the safest strategy for the time being is *not* to build into the meaning of DE-verbs en bloc the prohibition that the novel referent they introduce may belong to a contextually familiar set of individuals, since this would run the risk of ruling out even accidental inclusion in such a set.

### 1.2. Prohibition against strong quantifiers

DE-verbs do not allow their internal argument to be realized as a (strongly) quantificational noun phrase:

- (12) a. \*Rebeka minden képet festett<sup>de</sup>.  
Rebecca every picture.ACC painted  
b. Rebeka minden képet meg-festett.  
Rebecca every picture.ACC painted  
'Rebecca painted every picture.'  
(13) a. Sára minden almát evett<sup>de</sup>.  
Sarah every apple.ACC ate  
b. Sára minden almát meg-evett.  
Sarah every apple.ACC pr<sub>i</sub>-ate  
'Sarah ate every apple.'  
(14) a. \*Érkezett<sup>de</sup> minden vendég.  
arrived every guest

- b. Meg-érkezett minden vendég.  
pr<sub>i</sub>-arrived every guest

Other strong quantifiers such as *a legtöbb* 'most' and *mindegyik* 'each' are also excluded, but these are morphosyntactically definite, because they trigger the definite object conjugation:<sup>5</sup>

- (15) a. \*Sára mindegyik almát ette<sup>de</sup>.  
Sarah each apple.ACC ate  
b. Sára mindegyik almát meg-ette.  
Sarah each apple.ACC pr<sub>i</sub>-ate  
'Sarah ate each apple.'

Observe that DE-verbs are compatible with indefinite weak quantifiers such as numerals and *sok* 'many, much':<sup>6</sup>

- (16) a. Rebeka festett<sup>de</sup> három képet.  
Rebecca painted three picture.ACC  
'Rebecca painted three pictures.'  
b. Dániel talál<sup>de</sup> sok tojást.  
Daniel found many egg.ACC  
'Daniel found many eggs.'

An interesting exception to the prohibition against strong quantifiers is the determiner *mindenféle* 'every kind of', which is acceptable with DE-verbs:

- (17) a. Rebeka mindenféle képet festett<sup>de</sup>. (cf. (12))  
Rebecca every-kind-of picture.ACC painted  
'Rebecca painted every kind of picture.'  
b. Sára mindenféle almát evett<sup>de</sup>. (cf. (13a))  
Sarah every-kind-of apple.ACC ate  
'Sarah ate every kind of apple.'  
c. Érkezett<sup>de</sup> mindenféle vendég. (cf. (14a))  
arrived every-kind-of guest  
'Every kind of guest arrived.'

These examples suggest that it is not universal quantification per se that is responsible for the unacceptability in the (a)-sentences of (13)–(15) but rather the sorts of entities that are universally quantified over.

### 1.3. Prohibition against wide-scope indefinites

DE-verbs do not allow an indefinite noun phrase that is linked to their internal argument to take scope over negation (cf. (1)–(4)):

- (18) a. \*Sára nem ír<sup>de</sup> egy levelet.  
Sarah not wrote a letter.ACC

- b. \*Rebeka nem festett<sup>de</sup> egy képet.  
 Rebecca not painted a picture.ACC  
 c. \*Dániel nem talált<sup>de</sup> egy tojást.  
 Daniel not found an egg.ACC  
 d. \*Nem érkezett<sup>de</sup> egy vendég.  
 not arrived a guest

The natural way of repairing these sentences would be to drop the indefinite article:

- (19) a. Sára nem írt levelet.  
 Sarah not wrote letter.ACC  
 'Sarah didn't write a letter.'  
 b. Rebeka nem festett képet.  
 Rebecca not painted picture.ACC  
 'Rebecca didn't paint a picture.'  
 c. Dániel nem talált tojást.  
 Daniel not found egg.ACC  
 'Daniel didn't find an egg.'  
 d. Nem érkezett vendég.  
 not arrived guest  
 'A guest didn't arrive.'

However, as suggested by the lack of the superscript 'de', the verbs in (19) are not DE-verbs, because the positive versions of these sentences involve semantically and syntactically incorporated complements which are semantically unspecified for number (where 'unspecified for number' means one or more):

- (20) a. Sára levelet írt.  
 Sarah letter.ACC wrote  
 'Sarah wrote letters (lit.: letter-wrote).'  
 b. Rebeka képet festett.  
 Rebecca picture.ACC painted  
 'Rebecca painted pictures (lit.: picture-painted).'  
 c. Dániel tojást talált.  
 Daniel egg.ACC found  
 'Daniel found eggs (lit. egg-found).'  
 d. Vendég érkezett.  
 guest arrived  
 'Guests arrived (lit. guest-arrived).'

Another way of repairing the sentences in (18) is to append the element *sem* 'neither' to the indefinite:

- (21) a. Sára nem írt<sup>de</sup> egy levelet sem.  
 Sarah not wrote a letter.ACC neither  
 'Sarah didn't write a single letter.'

- b. Rebeka nem festett<sup>de</sup> egy képet sem.  
 Rebecca not painted a picture.ACC neither  
 'Rebecca didn't paint a single picture.'  
 c. Dániel nem talált<sup>de</sup> egy tojást sem.  
 Daniel not found an egg.ACC neither  
 'Daniel didn't find a single egg.'  
 d. Nem érkezett<sup>de</sup> egy vendég sem.  
 not arrived a guest neither  
 'A single guest didn't arrive.'

Observe that indefinites headed by numerals pattern more generally like those headed by *egy* 'a' but with the difference that in this case the option of deleting the numeral is not available as a repair strategy (cf. (19)):

- (22) a. \*Rebeka nem festett<sup>de</sup> három képet. (cf. (16a))  
 Rebecca not painted three picture.ACC  
 b. Rebeka nem festett<sup>de</sup> három képet sem.  
 Rebecca not painted there picture.ACC neither  
 'Rebecca didn't paint three pictures at all.'

The difficulty in (18) and (22a) seems to be that the indefinites cannot remain in the scope of negation for some reason<sup>7</sup> and yet they cannot take wide scope over negation either, because the DE-verbs prohibit this. In (19), (21), and (22b), the indefinites have been altered so that they can remain in the scope of negation, which renders the sentences acceptable. In this connection, notice that the indefinites in (18) and (22a) must take wide scope over negation with the corresponding verbs with a verbal particle from (5):<sup>8</sup>

- (23) a. Sára nem írt meg egy levelet. (cf. (18a))  
 Sarah not wrote PRT a letter.ACC  
 'There was a letter that Sarah didn't write.'  
 b. Rebeka nem festett meg egy képet. (cf. (18b))  
 Rebecca not painted PRT a picture.ACC  
 'There was a picture that Rebecca didn't paint.'  
 c. Dániel nem talált meg egy tojást. (cf. (18c))  
 Daniel not found PRT an egg.ACC  
 'There was an egg that Daniel didn't find.'  
 d. Nem érkezett meg egy vendég. (cf. (18d))  
 not arrived PRT a guest  
 'There was a guest that didn't arrive.'

- (24) Rebeka nem festett meg három képet. (cf. (22a))  
 Rebecca not painted PRT three picture.ACC  
 'There were three pictures that Rebecca didn't paint.'

These data support the view that the reason why the indefinites in (18) and (22a) must take wide scope over negation is independent of the phenomenon of DE-verbs.

The role played by DE-verbs in this matter is that they do not permit the indefinites to take scope over negation, in contrast to the corresponding verbs with a verbal particle, which do.

## 2. ANALYZING THE DEFINITENESS EFFECT

As already hinted at in section 1.1, a leading idea of the analysis to follow is that verbs which participate in the definiteness effect are systematically polysemous in that their definiteness effect meaning is simply one of two or more meanings that they may have (e.g., recall (8)). The convention adopted was that if *V* is a verb that participates in the definiteness effect, then *V*<sup>de</sup> is the syntactic representation of *V* on its definiteness effect meaning. I speak of 'systematicity' because the polysemy in question is not an idiosyncratic property of certain individual verbs but is rather always a more general property of a class of verbs. Moreover, the polysemy is syntactically conditioned in that the definiteness effect meaning is available only if certain syntactic conditions are satisfied. In this section, I will first touch upon the syntactic side of the analysis before turning to its semantic side.

There is by now a sizeable literature on the definiteness effect in Hungarian, beginning with Wacha (1978, chapter 4) and continuing with Szabolcsi (1986), Harlig (1989, chapter 5), Szabolcsi (1992, chapter 4), Bende-Farkas (1995), Kálmán (1995), É. Kiss (1995), Maleczki (1995), Alberti (1998), Bende-Farkas (2001), Maleczki (2001), Kálmán and Varasdi (2005), and Maleczki (2005) (and this list is not necessarily exhaustive). While it would take a separate work to discuss the various proposals (and such a discussion would be complicated by the fact that certain authors continue to revise their earlier proposals), it is only recently that formally explicit analyses of the definiteness effect have begun to appear (most notably, Bende-Farkas 2001 and Kálmán and Varasdi 2005). The present approach is probably closest in spirit to Szabolcsi's (1986) original treatment, which was informally cast in Dowty's (1979) framework, though it aims to disencumber her notion of EXIST of real existence and to substitute for it the dynamic semantic notion of the introduction of a novel discourse referent.<sup>9</sup>

### 2.1. Two syntactic conditions

Basically, there are two syntactic conditions on DE-verbs. The first is that the clause that a DE-verb appears in be neutral, i.e., lack a focused constituent in preverbal position; and the second is that the direct internal argument<sup>10</sup> of a DE-verb be realized by a DP, i.e., by a noun phrase that cannot be syntactically incorporated.

On the polysemy hypothesis, the first condition amounts to saying that if a verb has a DE-meaning, then it cannot have that meaning in a non-neutral clause (which, of course, still allows it to appear with a non-DE-meaning in a non-neutral clause). If the model of Hungarian syntax that one adopts requires the verb to occupy different positions in neutral and non-neutral clauses, then then this first condition can be stated as a positional constraint. For example, in É. Kiss model of chapter 9 the verb moves to Pred<sup>o</sup> in neutral clauses and but moves to an even higher functional

projection in non-neutral clauses, thus the first condition in her approach would be tantamount to saying that DE-verbs have to occupy Pred<sup>o</sup>. However, in a model that attributed the same position to the verb in both neutral and non-neutral clauses, explicit reference would have to be made to the lack of a focused constituent. Adopting É. Kiss's model for concreteness, the first syntactic condition on DE-verbs could be formulated as the following constraint:

- (25)  $V^{de} : [Pred^o [Pred^o V_i^{de}]] [VP [V^o t_i] \dots]$

This constraint requires that a DE-verb appear in Pred<sup>o</sup>, having raised there from V<sup>o</sup>. As pointed out above, if the verb raises no further than Pred<sup>o</sup> in É. Kiss's approach, then the clause in question must be neutral, i.e., there cannot be a focused constituent in the specifier of a higher projection, hence this information does not have to be encoded separately in (25). For an example of this constraint in action, consider the relevant part of the structure assigned to the sentence in (1a):

- (26)  $Sárga, [PredP [Pred^o [Pred^o \text{ír}_i^{de}]]] [VP [V^o t_i] \text{ egy levelet } t_i]$   
'Sarah wrote a letter.'

As mentioned at the outset, the second syntactic condition is that the direct internal argument of a DE-verb be realized by a DP. An explicit statement of this condition would require reference to the link between argument structure and syntactic subcategorization, which I do not explicitly discuss here, thus the following formulation will have to suffice for present purposes:

- (27) The direct internal argument of a DE-verb is syntactically realized as a DP.

Assuming that DPs cannot be syntactically incorporated, this constraint rules out the possibility that the direct internal argument of a DE-verb is syntactically incorporated. In Hungarian, a syntactically incorporated constituent appears unfocused in preverbal position without a determiner (recall (20)). In this sense, incorporated constituents are like verbal particles. Although it is still a matter of debate whether incorporated constituents (and verbal particles, for that matter) are syntactically heads (e.g. N<sup>o</sup>s) or phrases (e.g. NPs), they are clearly not DPs. In sum, the effect of the condition in (27) is that DE-verbs do not syntactically incorporate their direct internal argument. Nevertheless, from the present perspective, there is a curious mismatch between syntax and semantics in the case of DE-verbs, because although DE-verbs do not syntactically incorporate their direct internal argument, they do *semantically* incorporate it, which is the topic that I turn to next.

### 2.2. A dynamic semantic analysis

There is both uniformity and diversity in the semantics of DE-verbs. The uniformity is seen in the idea that every DE-verb introduces a novel discourse marker

corresponding to its internal argument. The diversity is revealed in the idea that although every DE-verb specifies an *end condition* that comes to hold of its internal argument, the exact value of this end condition varies across subclasses of DE-verbs, hence there is no single end condition that does duty for all DE-verbs.

**2.2.1. The framework** The background framework presupposed here is an event semantics with a provision for the handling of discourse referents. Although event semantic frameworks (e.g., that of Krifka 1992) usually do not offer a means of dealing with discourse referents, it is feasible to extend them with a treatment of discourse referents familiar from dynamic semantic frameworks. The leading idea behind the treatment of discourse referents in a dynamic semantic framework (e.g., see Heim 1982, Krifka 1993, Chierchia 1995, Muskens 1996) is to analyze a (declarative) sentence as operating on or updating *information states* in such a way that the information about the active discourse markers thus far is inherited from the 'input information state' and any changes that the meaning of the sentence makes to the inventory of discourse markers is encoded in the 'output information state'. For present purposes, an information state can be modeled as a set of discourse referent assignment functions (or more simply, discourse referent assignments), the idea being that such functions can adequately encode the necessary information about discourse referents. In this setting, sentences can be analyzed as functions from (input) information states to (output) information states, and in what follows, such functions will be represented by expressions of the form  $\lambda I \lambda g [ \dots ]$ , where  $I$  is a variable for information states (a set of discourse referent assignments) and  $g$  is a variable for discourse referent assignments. Expressions of this type are also known as *updates*. Furthermore, in order to account for semantic composition in this framework, natural language predicates are analyzed as having both an argument for discourse referent assignments and an argument for information states. In addition, verbs are assumed to have an event argument,<sup>11</sup> as is usual in an event semantics.

More technically, the models assumed here include a universe of discourse  $A$  ( $a, b, c, \dots$ ), which contains as pairwise disjoint subsets a set  $O$  of ordinary individuals ( $x, y, z, \dots$ ), and a set  $E$  of events ( $e, e', e'', \dots$ ). The models also include a set  $D$  of discourse referents ( $1, 2, 3, \dots$ ), which can be identified with the set of positive integers, and a set  $G$  of discourse referent assignments ( $g, v, g', \dots$ ), which is the set of (total) functions from  $D$  to  $A$ . If  $d$  is a discourse referent, then  $g = v^{[d-a]}$  means that  $g$  is identical to  $v$  except that  $g(d) = a$ . The more compact statement  $g = v^{[d]}$  means that there is an  $a$  such that  $g = v^{[d-a]}$ . In this case, the sortal status of  $a$  is determined by the predicate in question. Finally, in addition to an interpretation function, the models also include the usual (static) assignments to variables, but these do not figure explicitly in the semantic representations.

**2.2.2. Uniformity in novelty** As mentioned above, the unity in the semantics of DE-verbs stems from the claim that they all introduce a novel discourse referent. This idea is implemented as in (28), where an intransitive DE-verb  $v^{de,1}$  is analyzed as a

four-place relation between discourse referent assignments  $g$ , information states  $I$ , events  $e$ , and predicates  $P$  such that a discourse referent 1 is introduced so that the corresponding relation  $v^{de}$  holds between  $e$  and  $g(1)$  and  $P$  holds between  $g, I$ , and  $g(1)$ , as in (28a), and the analysis of a transitive DE-verb is parallel but with an extra argument  $x$  for the verb's external argument, as in (28b).<sup>12</sup> Evidently, this analysis takes seriously the idea that a DE-verb has the force of a (dynamic) existential quantifier built into its meaning.

- (28)  $v^{de,1} \rightsquigarrow$   
 a.  $\lambda P \lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[1]}] \wedge V(e, g(1)) \wedge P(g, I, g(1)) \wedge I(g)]$ ,  
 if  $v^{de,1}$  is intransitive  
 b.  $\lambda P \lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[1]}] \wedge V(e, x, g(1)) \wedge P(g, I, g(1)) \wedge I(g)]$ ,  
 if  $v^{de,1}$  is transitive

For an extended application of the present approach, let us work through the analysis of the following text:

- (29) Sára  $ir^{de,5}$  egy levelet. Feladtas.  
 Sarah wrote<sup>5</sup> a letter<sub>ACC</sub> she-mailed-it<sub>s</sub>  
 'Sarah wrote a letter. She mailed it.'

The semantic derivation of the (dynamic) event predicate corresponding to the first sentence in (29) is detailed in (30).<sup>13</sup>

- (30) a. Sára (Sarah)  $\rightsquigarrow$  Sarah  
 b.  $ir^{de,5}$  ('write<sup>5</sup>·')  $\rightsquigarrow$   
 $\lambda P \lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[5]}] \wedge write(e, x, g(5)) \wedge P(g, I, g(5)) \wedge I(g)]$   
 c. egy levelet ('a letter<sub>ACC</sub>')  $\rightsquigarrow$   $\lambda y \lambda I \lambda g [letter(y) \wedge I'(g')]$   
 d.  $ir^{de,5}$  egy levelet ('write<sup>5</sup> a letter<sub>ACC</sub>')  $\rightsquigarrow$   
 $\lambda P \lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[5]}] \wedge write(e, x, g(5)) \wedge P(g, I, g(5)) \wedge I(g)] (\lambda y \lambda I \lambda g [letter(y) \wedge I'(g')]) =$   
 $\lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[5]}] \wedge write(e, x, g(5)) \wedge letter(g(5)) \wedge I(g)]$   
 e. Sára  $ir^{de,5}$  egy levelet ('Sarah write<sup>5</sup> a letter<sub>ACC</sub>')  $\rightsquigarrow$   
 $\lambda x \lambda e \lambda g [\exists v I (v) \wedge g = v^{[5]}] \wedge write(e, x, g(5)) \wedge letter(g, I, g(5)) \wedge I(g)] (Sarah) =$   
 $\lambda e \lambda g [\exists v I (v) \wedge g = v^{[5]}] \wedge write(e, Sarah, g(5)) \wedge letter(g(5)) \wedge I(g)]$

As seen in (30a), proper names are treated simply as constants. The analysis of  $ir^{de,5}$  'write<sup>5</sup>·' in (30b) is an instance of the pattern in (28b). Since the internal argument of

$i^{de5}$  'write<sup>5</sup>' is a (dynamic) predicate of ordinary objects and not an individual-denoting argument, we are forced to analyze *egy levelet* 'a letter.ACC' in (30c) as a (dynamic) predicate of ordinary objects, but this causes no difficulty, because it is feasible to analyze indefinite DPs such as *egy levelet* 'a letter.ACC' in this way. In (30d) and (30e), respectively, the result of functionally applying the meaning of  $i^{de5}$  'write<sup>5</sup>' first to the meaning of *egy levelet* 'a letter.ACC' and then to the meaning of *Sára* 'Sarah' is given.

In order to transform the (dynamic) event predicate in (30e) into an update (i.e., function from information states to information states) that is the logical type of sentence meanings, the event variable has to be existentially bound. This can be accomplished by an assertion operator  $s\lambda^3$  (' $s\lambda^3$ ' is also mnemonic for Hungarian *állít* 'claim, assert') that introduces a novel discourse referent for the event argument, as in (31), where  $E$  is a variable for relations between discourse referent assignments, information states, and events:

$$(31) \quad s\lambda^3 \rightsquigarrow \lambda E \lambda \Lambda \lambda g [\exists v [I(v) \wedge g = v^{[3]}] \wedge E(g, I, g(3))] \wedge I(g)$$

Applying  $s\lambda^3$  to the (dynamic) event predicate in (30e), we obtain the following:

$$(32) \quad s\lambda^3 \text{ Sára } i^{de5} \text{ egy levelet ('Sarah write}^5 \text{ a letter.ACC')} \rightsquigarrow \\ \lambda E \lambda \Lambda \lambda g [\exists v [I(v) \wedge g = v^{[3]}] \wedge E(g, I, g(3))] \wedge \\ I(g) [\lambda e \lambda \lambda g' [\exists v' [I(v') \wedge g' = v'^{[5]}] \wedge \\ \text{write}(e, \text{sarah}, g'(5)) \wedge \text{letter}(g'(5)) \wedge I(g)]] = \\ \lambda \Lambda \lambda g' [\exists v' [I(v') \wedge g' = v'^{[3]}] \wedge \exists v'' [I(v'') \wedge g' = v''^{[5]}] \wedge \\ \text{write}(g'(3), \text{sarah}, g'(5)) \wedge \text{letter}(g'(5)) \wedge I(g)] \\ \text{def S-i}$$

This formula denotes a function from (input) information states  $I$  to (output) information states ( $\lambda g I \dots$ ) such that the discourse referent assignments  $g$  update  $I$  with new assignments to the discourse referents 3 and 5 so that Sarah writes  $g(5)$  in an event  $g(3)$ ,  $g(5)$  is a letter, and  $I$  holds of  $g$ . In other words,  $I$  is updated to contain only those assignments  $g$  such that Sarah writes a letter  $g(5)$  in an event  $g(3)$ .

The second sentence of (29) has an implicit subject pronoun that is anaphorically dependent on *Sára* 'Sarah' and an implicit object pronoun that is anaphorically dependent on the indefinite description introduced by  $i^{de5}$  'write<sup>5</sup>', which is instantiated as *egy levelet* 'a letter.ACC'. The (dynamic) event predicate corresponding to this sentence is given in (33a), and the result of applying  $s\lambda^3$  to it is shown in (33b).

$$(33) \quad \text{a. Feladja ('she mail it}_5 \text{')} \rightsquigarrow \lambda e \lambda \Lambda \lambda g [\text{mail}(e, \text{sarah}, g(5)) \wedge I(g)] \\ \text{b. } s\lambda^7 \text{ Feladja ('she mail it}_5 \text{')} \rightsquigarrow \\ \lambda E \lambda \Lambda \lambda g' [\exists v [I(v) \wedge g' = v^{[7]}] \wedge E(g, I, g'(7))] \wedge \\ I(g') [\lambda e' \lambda \lambda g' [\text{mail}(e', \text{sarah}, g'(5)) \wedge I'(g')]] = \\ \lambda \Lambda \lambda g' [\exists v' [I(v') \wedge g' = v'^{[7]}] \wedge \text{mail}(g'(7), \text{sarah}, g(5)); \wedge I(g)] \\ \text{def S-ii}$$

Observe that the meaning of the verb *feladja* 'she mail- it<sub>5</sub>' does not introduce a novel discourse referent for its internal argument—rather, it simply makes use of one (namely, 5) that has already been introduced. Of course, in combination with the assertion operator the sentence does introduce a novel discourse referent for the event argument of the verb. The meaning of the sentence, then, both 'tests' the input information state  $I$  to verify that the value that  $g$  assigns to 5 is mailed by Sarah and updates  $I$  with the information that  $g$  assigns to 7 an event in which Sarah mails  $g(5)$ .

In order to semantically conjoin the two sentences of (29) to yield a text, we require a notion of dynamic conjunction that applies to two updates to yield a new update. Technically, dynamic conjunction is implemented by applying the update denoted by the first sentence to the information state that results when the update denoted by the second sentence is applied to the input information state. The syntactic marker of dynamic conjunction is *és* (Hungarian *és* means 'and'), as defined in (34), where  $S$  and  $T$  are variables for updates.

$$(34) \quad \text{és} \rightsquigarrow \lambda S \lambda T \lambda g [\text{S}(g, \lambda v [T(v, I)])]$$

The result of applying *ÉS* to the two sentences in (29) (in their order of occurrence) is shown as follows:

$$(35) \quad s\lambda^3 \text{ Sára } i^{de5} \text{ egy levelet } \text{és} \quad s\lambda^7 \text{ Feladja} \rightsquigarrow \\ \text{'Sarah write}^5 \text{ a letter.ACC and she mail it}_5 \text{' } \\ \lambda S \lambda T \lambda g [\text{S}(g, \lambda v [T(v, I)]) (\text{S-i}) (\text{S-ii})] = \\ \lambda \Lambda \lambda g' [\text{S-i}(g, \lambda v' [\text{S-ii}(v', I)])] = \\ \lambda \Lambda \lambda g' [\exists v' [I(v') \wedge g' = v'^{[3]}] \wedge \exists v'' [I(v'') \wedge g' = v''^{[5]}] \wedge \\ \text{write}(g'(3), \text{sarah}, g(5)) \wedge \text{letter}(g'(5)) \wedge \\ \exists v''' [I(v''') \wedge g' = v'''^{[7]}] \wedge \text{mail}(g'(7), \text{sarah}, g(5)) \wedge I(g)]$$

The resulting formula for the text denotes a function from (input) information states  $I$  to (output) information states ( $\lambda g I \dots$ ) such that  $I$  is updated with assignments  $g$  that assign to 5 a letter that Sarah writes and mails, to 3 an event in which she writes  $g(5)$ , and to 7 an event in which she mails  $g(5)$ .

This extended application of the present dynamic semantic approach to the text in (29) has shown how the meaning of a DE-verb introduces a novel discourse referent for its direct internal argument and can bind further occurrences of this referent beyond the syntactic scope of its clause.

2.2.3. *Accounting for the prohibitions* The analysis presented in the previous section can account for the three prohibitions of DE-verbs that were discussed in section 1.

The first prohibition, against definites (see section 1.2), follows from the fact that DE-verbs introduce a novel discourse referent for their direct internal argument.

Although a full demonstration of how this prohibition is derived would require a more detailed treatment of definites than I can provide here, the idea (following Heim 1982) is that definites are *familiar* in the sense that they presuppose that their discourse referent is already assigned to a salient individual satisfying the descriptive content in question in the input information state.<sup>14</sup> To see how this idea is implemented in the present framework, let us consider the semantic derivation of the unacceptable sentence in (1b). Since *írde* 'write', like DE-verbs in general, takes a (dynamic) predicate argument for their internal argument, the definite DP *ag levelet* 'the<sub>g</sub> letter.ACC' should be analyzed as a predicate and not as a individual term:

$$(36) \text{ } a_g \text{ levelet ('the}_g \text{ letter.ACC')} \rightsquigarrow \\ \lambda x \lambda \Delta \Delta g [V \nu [I(\nu) \rightarrow x = \nu(9)] \wedge \text{letter}(\nu(9))] \wedge I(g)]$$

In this analysis, the meaning of *ag levelet* 'the<sub>g</sub> letter.ACC' denotes a relation between updates and ordinary individuals  $x$  such that every assignment  $\nu$  in the input information state  $I$  assigns the discourse referent 9 to  $x$ , which is a letter. Observe that no new information is added to  $I$ , which is meant to capture the idea that definites are familiar.

Given the analysis of *ag levelet* 'the<sub>g</sub> letter.ACC' in (36), it is sufficient to derive the verb phrase of (1b) (cf. (30d)) to see what goes wrong:

$$(37) \# \text{írja}^{de,9} \text{ } a_g \text{ levelet ('write'}^9 \text{ the}_g \text{ letter.ACC')} \rightsquigarrow \\ \lambda P \lambda x \lambda \Delta \Delta g [ \exists \nu [I(\nu) \wedge g = \nu^{[9]}] \wedge \text{write}(e, x, g(9))] \wedge \\ P(g, I, g(9)) \wedge I(g)] [ \lambda \nu \lambda \Delta \Delta g [ V \nu [I(\nu) \rightarrow y = \nu(9)] \wedge \\ \text{letter}(\nu(9)) \wedge I(g)] ] = \\ \lambda x \lambda \Delta \Delta g [ \exists \nu [I(\nu) \wedge g = \nu^{[9]}] \wedge \text{write}(e, x, g(9))] \wedge \\ V \nu [I(\nu) \rightarrow g(9) = \nu(9)] \wedge \text{letter}(\nu(9))] \wedge I(g)]$$

The problem is that whereas the meaning of *írja*<sup>de,9</sup> 'write'<sup>9</sup> introduces the novel discourse referent 9 for its internal argument, the meaning of *ag levelet* 'the<sub>g</sub> letter.ACC' presupposes that this referent is familiar. Technically, a conflict arises because the meaning of the verb updates the input information state with a novel assignment of 9 to a letter, and yet the meaning of the definite presupposes that all of the assignments in the input information state already assign 9 to a letter. More generally, it is clear that this kind of conflict will always arise between DE-verbs and definite DPs for their direct internal argument.

The prohibition against strong quantifiers (see section 1.2) follows from the fact that DE-verbs take a predicate and not an individual argument as their direct internal argument. The problem is that strong generalized quantifiers such as *minden vendég* 'every guest' (see (14)) and *mindentyik almát* 'each apple.ACC' (see (15a)) cannot be analyzed as predicates of individuals, which would be necessary in order for DE-verbs to apply to them.<sup>15</sup>

The apparent exception to this prohibition is the determiner *mindentyik* 'every kind of' in (17), presumably because this determiner is second-order, quantifying

over sets of individuals. Since DE-verbs provide a predicate argument that may be quantified over, it is expected that they should be compatible with *mindentyik* 'every kind of'. For an idea of what is at issue, consider the following static semantic analysis of the sentence in (17c):

$$(38) \text{ Érkeznek}^{de} \text{ mindentyik} \text{ vendég ('arrive every-kind-of guest')} \rightsquigarrow \\ VP \uparrow P \subseteq \text{guest} \wedge P \neq \emptyset \rightarrow \exists e \exists x [\text{arrive}^{de}(e, x) \wedge P(x)]$$

Informally, this formula states that for every kind of guest there is an event in which such a guest arrives. Although the recasting of this static analysis in a dynamic framework would require us to address more precisely the interaction of DE-verbs with DPs headed by *mindentyik* 'every kind of', the basic point is that DE-verbs allow in principle for their predicate argument to be quantified over.

Finally, the third prohibition, against wide-scope indefinites (see section 1.3), is also due to the fact that DE-verbs take a predicate argument as their internal argument. If the indefinite DP representing the direct internal argument of a DE-verb is a predicate and not a quantifier, then it does not bear scope and hence cannot move out of the scope of negation, as seen in (18), which contrasts with (23), in which the object DPs are quantifiers and therefore can move out of the scope of negation. However, the problem in (18) is that the indefinite DPs cannot remain in the scope of negation either,<sup>16</sup> unlike in (19), where the indefinites are nouns or NPs (but not DPs), thus a conflict arises. A way to resolve this conflict is to append the element *sem* neither to the indefinites, thereby making them negative polarity items and allowing them to remain in the scope of negation, as in (21).

In conclusion, the idea that DE-verbs take a predicate argument and introduce a novel discourse referent corresponding to their direct internal argument, as implemented in the dynamic semantic analysis in the previous section, is successful in accounting for the three prohibitions that DE-verbs exhibit and which are discussed in section 1.

## NOTES

- Note that this characterization excludes the classical example of a DE-verb, namely, *van* 'there is', because it is not a verb of change, and in this respect it is not consonant with Szabolcsi's (1986) original classification. However, although I will focus on DE-verbs that are verbs of change, one can think of the class of DE-verbs as being divided into two nonoverlapping subclasses, a small closed one containing *van* 'there is' (and perhaps *akad* 'occur, turn up': *Akadat egy problémát* 'turned-up a problem') and a large open one containing verbs of change.
- By 'focused constituent' is meant an identificational focus in preverbal position – see chapter 9.
- A clause without a focused constituent is also called 'neutral'.
- Since Hungarian has both an indefinite and a definite object conjugation (which are not glossed here), the exact form of the verb depends on the (in)definiteness of the direct object noun phrase, the indefinite conjugation being the 'elsewhere' choice.
- A focused constituent is marked by SMALL CAPS.

- 5 The situation with *a legtöbb* 'most' is less straightforward, because a noun phrase headed by *a legtöbb* 'most' can only appear in clauses with a focused constituent, but DE-verbs are excluded from such clauses to begin with, if my reasoning above is correct.
- 6 *Kevés* 'few, little' could also be listed here, but a noun phrase headed by *kevés* 'few, little' obligatorily appears in the preverbal focus position, and so it is not immediately apparent whether such clauses should count as neutral or not. Arguably, however, such clauses are neutral, because it is the inherent negative meaning of *kevés* 'few, little' ( $\approx$  *nem sok* 'not many, not much') that attracts it to the focus position.
- 7 According to Anna Szabolcsi (pers. comm.), indefinites headed by *egy* are so-called positive polarity items, which seems descriptively correct. Presumably, this would also generally be true of indefinites headed by numerals. One effect of *sem* 'neither' would then be to create a negative polarity item out of a positive polarity item.
- 8 A verbal particle normally appears after its host verb in negative sentences.
- 9 Early versions of the present approach were presented at the Sixth Symposium on Logic and Language in Budapest on 30 Aug. 1998 and at the Fifth International Conference on the Structure of Hungarian in Budapest on 21 May 2001. See van Geenhoven (1998) for a Semantic account of incorporation in the same vein, though she does not discuss Hungarian, where as I point out below, DE-verbs do not syntactically incorporate their direct internal argument.
- 10 In case of more than one internal argument, the 'direct internal argument' is the theme/patient argument.
- 11 The term 'event' is used in its broad sense, as covering processes and states as well.
- 12 By convention, a superscript indicates the discourse referent introduced and a subscript, the intended antecedent discourse referent.
- 13 In what follows, tense will be ignored and the question of how proper names should be treated in a dynamic framework will be set aside (see Muskens 1996).
- 14 Strictly speaking, Heim does not attribute a uniqueness presupposition to definites.
- 15 McNally (1998) analyzes existential *there* as taking a predicate argument in order to account for the parallel restriction in English.
- 16 Recall footnote 7 for the suggestion that such DPs are positive polarity items and that the addition of *sem* neither makes them negative polarity items.

## WEAK AND STRONG ACCOMPLISHMENTS

## 1. DISTINGUISHING ACCOMPLISHMENTS

Traditional tests for distinguishing accomplishments from activities in English (e.g. see Dowry 1979, chapter 2.2.3) include compatibility with temporal *in*-phrases and the availability of two interpretations when modified by *almost*, as seen by the contrasts in (2)–(6), where *paint a picture* and *write a paper* are accomplishment verb phrases and *paint pictures* and *write papers*, activity verb phrases. Following Rapp and von Stechow (1999), the two readings of *almost* will be called the 'counterfactual' and the 'scalar' interpretation, respectively.

- (1) a. Rebecca painted a picture.  
b. Rebecca painted pictures.
- (2) a. Rebecca painted a picture in an hour.  
b. #Rebecca painted pictures in an hour.
- (3) a. Daniel wrote a paper.  
b. Daniel wrote papers.
- (4) a. Daniel wrote a paper in three days.  
b. #Daniel wrote papers in three days.
- (5) a. Rebecca almost painted a picture.  
counterfactual: Rebecca did not begin painting a picture  
scalar: Rebecca did not finish painting a picture  
b. Rebecca almost painted pictures.  
counterfactual: Rebecca did not begin painting pictures  
(no scalar interpretation)
- (6) a. Daniel almost wrote a paper.  
counterfactual: Daniel did not begin writing a paper  
scalar: Daniel did not finish writing a paper  
b. Daniel almost wrote papers.  
counterfactual: Daniel did not begin writing papers  
(no scalar interpretation)

Despite initial appearances, I want to argue that the two aforementioned criteria do not diagnose a single class of accomplishments. In particular, the criterion of compatibility with *in*-phrases picks out a larger class of accomplishments than the availability of two readings when modified by *almost*. I will refer to as 'weak accomplishments' those accomplishments that are compatible with *in*-phrases but which