Presuppositions and Preconditions

Ágnes Bende-Farkas
Research Institute for Linguistics
of the Hungarian Academy of Sciences
e-mail: bfarkas@nytud.hu

March 25, 1999

1 Introduction

This paper has been written with the following two tasks in mind:

1. To provide a detailed and fine-grained representation of presuppositions triggered by a particular class of Hungarian verbs, prefixed verbs requiring affected objects (e.g. *meg-talál* "find", *el-lop* "steal (away)", *be-hoz* "bring in").[1]

2. To examine the relation between presuppositions and so-called precondition states (a.o. Pustejovsky (1991), Kamp–Roßdeutscher (1994a-b), Sæbø (1994,1996)).

Work on the first task has raised some questions concerning the nature of the relationship between presuppositions and components of lexical event representations. These representations (cf. Pustejovsky (1991), Wunderlich (1994, t.a.), Kamp–Roßdeutscher (1994a-b), Sæbø (1994, 1996)) have been very useful for the treatment of an impressive array of phenomena. Applying them to Hungarian however requires a precise distinction between presuppositions triggered by verbs, and preconditions on events.

Since Dowty (1979) it has been standard practice to represent *all* culminated process and culmination verbs as involving a state prior to change (= a precondition state in the terminology of Kamp and Roßdeutscher), and one that follows change. These states involve the properties of individuals affected by change. For instance, on the two definitions of *find* from Dowty (1979) the precondition of *find an error* is that the experiencer should be ignorant either about the error in question, or about its location. On the other hand it is obvious, even trivial, that not all verbs are presupposition triggers.

[1] In this respect the present paper is a revised version of a research report within the project *The Lexicon: Theory and Applications*, conducted at the Department of General and Structural Linguistics of the Research Institute for Linguistics of the Hungarian Academy of Sciences, and funded by the National Science and Research Fund (OTKA) of Hungary.

To my knowledge the presupposition/precondition distinction has not received much attention in the literature. In Sæbø (1996) the precondition state of at least one verb is "sent" to the precondition DRS. (Cf. also a side remark in Naumann (1996) but see Horn's remarks on *persuade* vs *dissuade*, quoted in Dowty (1979) and also in this paper.) Sæbø's proposal will be discussed in detail later in this paper.

In general, a condition that has to be hold *before* some event (or the utterance of a sentence describing it) does look as a presupposition. I mean that it is easy not to distinguish between a condition on states that temporally precede an event, and what has been known or said by a discourse participant prior to the sentence that describes that event. Presumably this is because context change as understood in dynamic semantics is so easy to equate with temporal change. All in all, preconditions might be defined as a special case of presupposition. On the other hand preconditions describe the state of the world prior to the occurrence of an event, and presuppositions are related to discourse information. The two need not be the same. The null hypothesis (to be checked) in this paper is that preconditions are distinct from presuppositions. This is motivated by a very clear distinction with the relevant Hungarian data, and by a tendency to keep truth-conditions and discourse information separate.

In the case of the Hungarian data presented in this paper presuppositions involve (descriptions of) preconditions, and are morphologically marked by verbal prefixation. Preconditions on the other hand are related to (representations of) all transitions, and therefore conventional wisdom says that they belong to lexical entries of all Hungarian verbs, including those without a prefix. If this distinction is adopted the remaining task is to formally distinguish preconditions that pertain to presuppositions from those that come with the main assertion.

In this paper the presupposition/precondition problem will be cast in two frameworks. A lexical decomposition analysis (Pustejovsky (1991b) and Wunderlich (1994,t.a.)) will be couched in a compositional dynamic framework equipped with the presupposition operator ∂ from Beaver (1993). This in turn will be compared to DRT lexical entries and rules (Kamp–Roßdeutscher (1994a-b), Sæbø (1994, 1996)). Comparing how these two frameworks fare with respect to the Hungarian data is useful, I believe, for the following reasons. First, a set of well-analysed and fairly well-understood data can be a useful testing ground. Second, although the data have been well-known and systematically analyzed in the Hungarian linguistic community there have been few formal analyses to date (cf. Szabolcsi (1986; 1992), Kálmán (1995), É.Kiss (1995)).

2 The Data; Some Analysis

Hungarian prefixed verbs with effected objects have been known to have the following properties:

These verbs are the prefixed variants of Hungarian Definiteness Effect (DE)

verbs.[2] In a sense they show the dual of the Definiteness Effect in that they require their internal arguments to be familiar or specific; accordingly this effect has been termed as the Specificity Effect in É.Kiss (1995).[3] The indefinite in (1a) is predicted to denote an arbitrary member of a familiar set, satisfying the definition of specificity given in Enç (1991):

(1) *a.* János meg-talált egy hibát
John pfx-found one error-Acc
"John found one (of the) error(s)"
b. János talált egy hibát
John found one error-Acc
"John found an error"
c. János ∗(meg-)találta a/az összes/a legtöbb hibát
John pfx found+Def the /the all/the error-Acc
John (MEG) found the/all/most error(s)

(1a) behaves as expected: this sentence is appropriate only if previous discourse contains a suitable (set-denoting) antecedent for the indefinite, such that the discourse referent for the indefinite is a *proper singleton subset* of the antecedent set. If the existence of exactly one error had been presupposed a singular definite would have been used instead. The preferred interpretation of (1b) on the other hand is that John found an arbitrary (and previously unknown) error. ((1c) illustrates the Definiteness Effect: if the internal argument is a strong NP only the prefixed variant of the verb is possible).

Beside the specificity of an internal argument ther are also temporal links between a Specificity Effect sentence and previous discourse. Taken together, the temporal and individual links required for a sentence like (1a) ensure that it is appropriate only as a discourse continuation, unless its intended antecedent is highly salient in the common ground. Conversely, Definiteness Effect sentences

[2]As shown in Szabolcsi (1986;1992), there is no expletive comparable to English *there* in Hungarian; furthermore, the Definiteness Effect is systematic with unprefixed verbs that describe being, coming into existence and becoming available. It is therefore widely accepted by Hungarian linguists since Szabolcsi (1986) that the source of the Definiteness Effect in Hungarian is the lexical semantics of verbs.

[3]The duality between Definiteness Effect and Specificity Effect verbs becomes apparent if we accept that weak NPs correspond to new discourse entities, and strong NPs to familiar or specific ones, cf. de Jong–Verkuyl (1985), Zucchi (1995).

can be used to introduce new discourse topics.

(2) *a.* Tíz diák elveszett.
"Ten students were lost.
*b*1. János meg-talált egy lányt
John pfx-found one girl-Acc+Spec
"John found a girl (= one of the students)"
*b*2. János talált egy lányt
John found one girl-Acc
"John found a girl"

The discourse variant (2a–b1) can only be construed as describing two related events, the girl John found being a member of the set introduced in the (a) sentence. The preferred interpretation of variant (2a-b2) is that the two events and the two discourse entities are independent.[4]

(3) *a.* Tíz diák eltévedt, majd estére visszatalált a szállodába
Ten student pfx-lost-way, then evening-by back-found the hotel-in
"Ten students lost their way, then by evening they found their way back to the hotel"
b. ??János meg-talált egy lányt
John pfx-found one girl-Acc
"John found a girl"(=one of the students)
c. János talált egy lányt, aki a CIA-nak kémkedett
John found one girl-Acc, who the CIA-for spy-Past-3Sg
"John found a girl who was spying for the CIA"

To see that the temporal antecedent of a Specificity Effect sentence *has* to describe a precondition state consider (3a-b): the intended antecedent of the indefinite *egy lány(t)* ("a girl") in (3b) is the set of students introduced in (3a).

[4]If the verb *talált* in (2b2) is uttered with a fall-rise intonation, typically used to convey uncertainty, the speaker can signal his/her uncertainty concerning the relation between the indefinite and a potential antecedent, i.e. whether the girl found belongs to the previously mentioned set. If the *prefixed* verb in (2b1) is uttered with the same intonation contour the uncertainty of the speaker does *not* concern the relation between the indefinite and its antecedent. This can be seen in (*i*) as well (the intonation contours of the internal arguments may also differ but this will be ignored here):

(*i*)*a.* Mi van a tíz diákkal, aki elveszett?
"What about the ten students who have been lost?"
b. Hát, János MEGTALÁLT egy lányt...
"Well, John has FOUND a girl"
=one of the students has been found but I don't know about the rest
NOT John has found a girl but I don't know whether she's one of the students
c. Hát, János TALÁLT egy lányt
"Well, John has FOUND a girl"
ONLY=John has found a girl but I don't know whether she's one of the students

Yet (3a) is not an appropriate antecedent for (3b) as its second clause is the exact opposite of the precondition for (3b), which requires the relevant discourse referent to be unavailable prior to the finding event. This is why the intended link between the two sentences cannot be established, although (3a) contains a collective/group referent that would be suitable if the presupposition of *meg-talál* involved only an individual discourse referent, without any temporal link. On the other hand there is nothing wrong with the discourse variant (3a,c), mostly because these sentences need not be linked via preconditions (so nothing goes wrong if no link can be established).

In Bende-Farkas (1995) the specificity of internal arguments was derived from presuppositions triggered by Specificity Effect verbs themselves, in line with Kiefer (1983), É.Kiss (1995). In Kiefer (1983) it was shown that these verbs pass the negation test:

(4) *a.* János meg-talált egy hibát
John pfx-found one error-Acc
"John has found an error"

b. János nem talált meg egy hibát
John not found pfx an error
"John has not found one of the errors"

It is on the basis of examples like (2) and (3) that in Bende-Farkas (1995) the presuppositions of Specificity Effect verbs were said to involve precondition states. In addition, it has been shown from examples like (2) that these presuppositions are *anaphoric* rather than accommodated (cf. van der Sandt (1992)). In this sense Hungarian Specificity Effect verbs are seen as providing evidence for the inter-relatedness of familiarity and presuppositional behaviour.

It has been observed that Specificity Effect verbs form two natural classes; these have been known in the descriptive literature as verbs with effected and affected objects, respectively. In Bende-Farkas (1995) they were distinguished formally on the basis of the presuppositions they trigger (cf. Kiefer (1983)). Verbs with effected objects (*meg-ír*, lit. "write up", or *fel-épít*, lit. "build up") will not be considered here.

There is consensus among linguists working on Hungarian that the Specificity Effect properties of verbs are encoded in the lexicon. Ultimately, a proper treatment of such verbs involves dynamic lexical semantics.

The question is, what dynamic approach is appropriate for Specificity Effect verbs, a DRT-based solution (along the lines of Kamp–Roßdeutscher (1994a-b) or Sæbø (1994,1996)) or a DPL-like treatment (Beaver (1993)), enriched with a lexical decomposition technique adapted from Pustejovsky or Wunderlich.

3 Presuppositions and preconditions

3.1 Preconditions anticipated

It has been shown in the previous part that the antecedent of a Specificity Effect sentence has to describe the so-called precondition state of the event described in the Specificity Effect sentence. This immediately evokes lexical decomposition analyses (cf. Dowty (1979), Pustejovsky (1991), Wunderlich (1994, t.a.), Kamp–Roßdeutscher (1994a-b)). According to the analyses based on Dowty (1979) culminations or culminated processes are to be captured with pairs of states: the state preceding change and the state that holds as a consequence of change (the consequent state of Moens–Steedman (1988)). These two states are each other's opposites, as the door's being open and not open in classical textbook examples. To my knowledge states prior to change have first been given more attention in Kamp–Roßdeutscher (1994a-b), where they have been termed as *precondition states*, and where they serve to establish discourse links.

Returning to Hungarian Specificity Effect verbs they constitute one more case where some component of a complex lexical structure is supplied by discourse. In the general case discourse material is not indispensable for the slots in event representations, cf. the optionality of the adjunct in *He emptied the bottle by pouring its contents into the sink* (cf. Wunderlich (1994)). What singles out Hungarian Specificity Effect verbs is the obligatory nature of this mechanism. By contrast, their unprefixed, Definiteness Effect counterparts seem to *repel* comparable links:[5]

(5) Egy fiú és egy lány elveszett. ∗János találta a lányt.
"A boy and a girl have been lost. John found the girl."

The simplest approach to Hungarian Specificity Effect verbs is to partition their lexical event structure into a presupposition part (containing the precondition) and an assertion part (containing the preparatory process and the consequent state). By contrast, Definiteness Effect verbs are to have all components

[5]This paper has only suggestions to offer concerning the Definiteness Effect in Hungarian. These involve the relevance of the ± presuppositional nature of strong and weak NPs, together with the guess that the weak–strong distinction has to do with categorial and type-theoretic differences (cf. Blutner (1990), Zucchi (1995)). Also, the following example seems to suggest that the time when something becomes known is relevant for the Specificity Effect/Definiteness Effect opposition.

(*ii*)*a*. Tíz diák elveszett
"Ten students have been lost"

b. ?János meg-talált egy lányt. Később kiderült, hogy a diákokhoz tartozik
"John (MEG) found a girl. It was found out later that she was one of the students"

c. János talált egy lányt. Később kiderült, hogy a diákokhoz tartozik
"John found a girl. It was found out later that she was one of the students"

of their event structure in the assertion part. The following two subsections contain two attempts at implementing this idea: **3.2** is on "lexical" DPL, and **3.3** on DRT. Conclusions are summarized in **3.4**.

3.2 Lexical Decomposition with *BECOME*

3.2.1 Event Structure

This part contains a brief presentation of the relevant aspects in the lexical decomposition of verb meanings (cf. Pustejovsky (1991a-b), Wunderlich (1994, t.a.)). For the sake of convenience, the terminology of Moens–Steedman (1988) will be used: an event *nucleus* is said to consist in a *preparatory process*, a *culmination* and a *consequent state*. This model is supplemented with a *precondition state*, the state prior to the culmination point. Transitions correspond to culminated processes or to culminations.

Lexical entries for culminated process verbs like *kill* or *give* are composed of a preparatory process P and a transition T. The transition itself is composed of two successive states that complement each other ($S_{1,2}, S_1 = \neg S_2$). At another level of lexical representation Dowty's *BECOME* operates on $S_{1,2}$. As the relevant verbs describe changes brought about by (external) agents P and T are linked with the CAUSE operator (also familiar from Dowty (1979)).

The verb *to empty* is represented in the following format by Wunderlich:

(6) a. *kill* $\rightsquigarrow CAUSE(x, BECOME(EMPTY(y)))(s)$
b. $[CAUSE_S(s_1, s_2) \wedge BECOME_S(s_2, s_3) \wedge EMPTY_S(s_3)](s)$

(6a) is a schematic representation at the level that precedes λ-abstraction. (It is relevant to note that the external argument x is represented as the agent of causation, and the iternal argument y as the theme affected by change.) (6b) explicitly introduces situations (times) that are part of the main situation/event time s: s_1, s_2 stands for the interval of causation, and *BECOME* operates on s_2, s_3, such that s_3 is characterised by the predicate EMPTY. That is, the (time of) the precondition state is s_2, and the (time of the) consequent state is s_3. (Here $\wedge$ is non-commutative: the time of causation precedes the time of change. It is like Cresswell's temporal AND, cf. Dowty (1979)).

(7) $kill \rightsquigarrow$ $[_P DO(x, \phi) \wedge alive'(y)] \wedge [_S \neg alive'(y)] \rightsquigarrow$
$CAUSE(DO(x, \phi), BECOME(\neg alive'(y)))$

(7) above represents the event structure of the verb *kill* in the framework in Pustejovsky (1991b). Pustejovsky's event structure differs in some points from Wunderlich's, as is already apparent from a comparison of (6) and (7). For the present paper it is more important to see what they have in common:

- These approaches share the fundamental assumption that verbs of change have complex representations in the lexicon; (both models operate with at

least two levels of lexical representation—the motivations for these levels as well as the differences between these models are of no immediate concern here);

- the components of event structure are arguments of Dowtyan operators (*DO, CAUSE, BECOME*);
- negation and adverbial modifiers can attach to different components of event structure, resulting in different readings. For instance, *John almost painted a picture* can mean either that John has almost went about painting a picture, or that he has almost finished one (Dowty (1979). Event structure is also the locus of morpho-lexical operations (causativisation a.o.).

3.2.2 *BECOME*

With Pustejovsky and Wunderlich *BECOME* is assumed to work according to the definition in Dowty (1979) (provided Dowty's intervals correspond to temporal projections of events and situations in (6)).

(8) $[\![BECOME(\phi)]\!](I) = 1$ iff there is an interval J containing the initial bound of I s.t. $\neg\phi$ is true at J, and
there is an interval K containing the final bound of I s.t. ϕ is true at K.

(8) says that the interval I of change is evaluated relative to what holds at its initial and final segment. (8) is agnostic about the interval of change itself.

In Dowty (1979) *BECOME* has narrow scope w.r.t. nominal quantifiers in a sentence. This is motivated by the fact that if negation had wide scope over the existential quantifier it could yield false sentences. In the translation of *John built a house* the initial state should *not* as a rule say that there is no house John built (it can be true that he built ten houses before he built the one in question). Another argument concerns the nature of the transition described by means of BECOME: if *every* were in the scope of BECOME, as in (9c), then the translation of *John opened every window* would admit situations where one or more windows become open independently of John's acting on them:

(9) *a.* $\forall y.[window'(y) \rightarrow \exists P.[P(j)CAUSE\ BECOMEopen'(y)]]$
b. $\exists P.\forall y.[window'(y) \rightarrow \exists P.[P(j)CAUSE\ BECOMEopen'(y)]]$
c. $\exists P.[P(j)\ CAUSE\ \forall y.[window'(y) \rightarrow BECOMEopen'(y)]]$

The appropriate translation for *open* is (9a) or (9b) (for differences irrelevant here cf. Dowty (1979:276-277)). The important thing is that nominal quantifiers have wide scope over *BECOME*, therefore they have scope over the negation in the precondition state contained in *BECOME*.

3.2.3 Dynamics

In this part decomposed verb meanings are incorporated into a compositional dynamic framework. Here it is a partial framework similar to Beaver (1993), Dekker (1993). Partiality is motivated by the presence of presuppositions. (Alternatively, presuppositions could be included in the *possibilities* of Groenendijk–Stokhof–Veltman (1994); that task is well beyond the scope of this paper.) Additional tools will be introduced that help in the treatment of temporal entities and plurals. The dynamic system is in fact a lifted variant of Beaver (1993) and Dekker (1993): sets of assignments are used, which amounts to individual discourse referents being matched with sets and not urelements (van den Berg (1992,1993)).

(10) *a.* $[card(x) = n] = 1$ iff $|g(x)| = \mathbf{n}$;
b. $[x \subseteq y] = 1$ iff $\forall g : g(x) = g(y)$ or $g(x) = \perp$;
c. $Var = Var_e \cup Var_i; Var_e \cap Var_i = \emptyset$;
d. $Con = Con_e \cup Con_i; Con_e \cap Con_i = \emptyset$;
e. $D = D_e \cup D_i; D_e \cap D_i = \emptyset$;
f. $D_i := \mathcal{I}$; $\langle \mathcal{I}, <, \circ \rangle$;
g. $t_{1,2,3} \in Term_i: t_1 = t_2 + t_3$ iff $t_{2,3} \subseteq t_1 \wedge \forall t : t_{2,3} \subseteq t \rightarrow t_1 \subseteq t$;
h. $BECOME(\phi)(t_1) = 1 \Leftrightarrow \exists t_{2,3}: t_1 = t_2 + t_3 \wedge \mathbf{F}(\phi)t_2 \wedge \mathbf{T}\phi(t_3)$;
i. $t_0 \in Con_i: [t_0] = I_0$.

In (10a) the predicate *card* yields the cardinality of the set that corresponds to a discourse referent. ([ ] corresponds to the static component of meaning.) $\subseteq$ in (10b) is the subset relation with non-singletons, and equality with singletons (cf. van den Berg (1992, 1993)).

(10c-i) show that variables, individual constants and the domain of individuals in the model are factored into disjoint sets for "genuine" individuals and temporal objects. The temporal domain D_i is a set $\mathcal{I}$ of intervals. $\mathcal{I}$ together with a strict precedence relation $<$ and overlap, $\circ$, forms an *interval structure* (Landman (1991)). In (10g) the operation $+$ on two interval (variable)s yields the smallest interval that contains these two intervals. In (10h) *BECOME* is defined on the sum on two intervals: the formula in its scope is stably false ($\mathbf{F}$) at the first interval and stably true ($\mathbf{T}$) at the second (Landman (1991)).[6] In (10i) a distinguished temporal constant t_0 is defined for I_0, the interval of speech.

[6] The definition of Landman (1991) has been chosen instead of (8), for reasons discussed in Landman (1991). In this paper nothing hinges on the choice between Dowty's or Landman's *BECOME* however.

The following are the definitions of the dynamic component ($\doteq$ is equality restricted to *defined* cases):

(11) *a.* $S \doteq \{\langle w,g\rangle | w \in W, g \subseteq \mathcal{P}(G)\}$
$\forall g,h : \langle w,g\rangle \wedge \langle w,h\rangle \in S\colon \forall g' \in g, h' \in h :$
$Dom(h') = Dom(h) = Dom(g') = Dom(g) := D_S$;

b. $S[\![x \subseteq y]\!] \doteq S$ if $\forall g : \langle w,g\rangle \in S : g(x) = g(y)$ or $g(x) = \perp$;

c. $S[\![\exists x.\phi]\!] \doteq S[\![\epsilon_x]\!][\![\phi]\!]$, where
$S[\![\epsilon_x]\!] \doteq \{\langle w,h\rangle | \exists g\colon \langle w,g\rangle \in S \wedge Dom(h) = Dom(g) \cup \{x\} \wedge$
$\forall y \in Dom(g)\colon g(y) = h(y)\}$;

d. $S[\![\neg\phi]\!] \doteq \{\langle w,g\rangle \in S | \nexists h\colon g \leq h \wedge \langle w,h\rangle \in S[\![\phi]\!]\}$

e. $S[\![\phi \wedge \psi]\!] \doteq S[\![\phi]\!][\![\psi]\!]$

f. $S[\![\partial(\phi)]\!] \doteq S[\![\phi]\!]$ iff $\forall \langle w,f\rangle \in S\colon \exists g\colon \langle w,g\rangle \in S[\![\phi]\!]$.

In (11a) information states are defined as sets of ordered pairs of possible worlds and sets of partial assignments. All the assignments in an information state have the same domain, noted as D_S. In (11b) the subset relation is given a dynamic definition, following van den Berg (1992,1993). Existential quantification in (11c) is defined with the help of domain extension ϵ_x (the domain of an information state S is *increased* with x; x has to be genuinely new relatively to D_S). Conjunction in (11d) corresponds to function composition in the now standard way. In (11e) negation is defined as set complementation. Presupposition is defined in (11e): truth-conditionally and in terms of its *output* $\partial(\phi)$ is equivalent to ϕ. The difference lies the conditions they impose on the information state they update. In order for $\partial(\phi)$ to be a successful update for S *all* assignments in S have to have a continuation in $S[\![\partial(\phi)]\!]$, whereas updating with ϕ alone does not pose such requirements on S. According to (11f) information in a presupposition is either to be explicit in S or compatible with it (i.e. all world-assignment pairs in S are to be at least extendable with ϕ).

Verbs are translated with an additional argument place for temporal variables. Culmination and culminated process verbs are decomposed as in **3.1.1**. English *find* is decomposed following Dowty (1979). According to Dowty *find* concerns either knowledge about the existence of an object, or about its location:

(12)*a.* find $\rightsquigarrow$

b. $\lambda\mathcal{P}\lambda x.\mathcal{P}(\lambda y.\exists z.[place'(z) \wedge BECOME[know'(x,[be-at'(y,z)])]])$, or

c. $\lambda\mathcal{P}.\lambda x.\mathcal{P}(\lambda y.[BECOME[know'(x,[exist'(y)]]$

Examples in this paper that are about finding errors look more readily translatable with (12c), as learning that something previously unknown exists. Nevertheless (12b) will be adopted here, because finding errors (in programs) involves search in some (textual) space. In addition, the predicate *exist* is not without its problems. (12c) is in fact suggestive of a partial dynamic redefinition more radical than the fragment offered in this paper. This however is not plausible given Dowty's or Landman's *BECOME*, for reasons that will be discussed later.

Accordingly (12b) is considered as the lesser of two evils, and (13a) is translated as (13b):

(13) *a.* John found an error $\rightsquigarrow$
b. $\exists t_{1,2,3}.\exists z.\exists x.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge error'(x) \wedge card(x) = 1$
$\wedge place'(z) \wedge \neg know'(j, be - at'(x, z), t_2) \wedge know'(j, be - at'(x, z), t_3)]$

Hungarian *talál* and *meg-talál* are taken to mean roughly the same as English *find*. The main difference concerns the status of the precondition state of *meg-talál*.[7] There is another difference between *find* and *meg-talál*: the choice of *(meg)-talál* is also determined by information available to the *speaker* whereas the translation of *find* in (13b) highlights only the information of the experient. ((13b) involves logical omniscience of course.) Sometimes Hungarian *(meg)talál* will be rendered with *known-where*, abstracting away from the experient.

3.2.4 Presuppositions

To begin with the beginning, a simple Hungarian non-Specificity Effect-sentence in isolation as (14a) (=(1a) can be translated as (14b):

(14) *a.* János talált egy hibát $\rightsquigarrow$
("John found an error")
b. $\exists t_{1,2,3}.\exists x.\exists z.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge error'(x) \wedge card(x) = 1 \wedge$
$place'(z) \wedge \neg know'(j, be - at'(x, z), t_2) \wedge know'(j, be - at'(x, z), t_3)]$

For all purposes, (14) is just like its English counterpart (13b). (14b) says that there is a new discourse referent x that is an error, and that John doesn't know where it is at the initial stage t_2 of an interval t_1, and he knows where it is at the final stage t_3 of t_1. What is relevant here is the novelty x (and that of t_1). Nevertheless (14b) is a bit strange, for the novelty of x requires that no information should be available about it prior to updating with (14a), while the precondition part of (14b) implies precisely that some kind of information about x is available before the finding event proper. (And this translation of *talál/find* has been chosen as the lesser of two evils, cf. (12b) vs (12c).) This problem will be set aside until Specificity Effect sentences are discussed. Till then, (14b) will be assumed to pose no problems, and will be used as a contrast for Specificity Effect cases.

[7] The argument structure of Hungarian *talál*, a Definiteness Effect verb, should also differ from that of *find*. A proper formal definition for this verb is yet to be given.

As a first attempt the Specificity Effect counterpart of (14) can be rendered as (15b), where **P** marks the persupposition and **A** the assertion part:

(15)*a.* János meg-talált egy hibát $\rightsquigarrow$
("John found a (specific) error")

b. $\mathbf{P}: \partial(\exists t_1.\exists y.\exists z.[error'(y) \wedge place'(z) \wedge card(y) > 1 \wedge t_1 < t_0$
$\wedge \neg know'(j, be-at'(y,z,t_1))])$
$\mathbf{A}: \wedge \exists t_{2,3,4}.\exists x.[x \subset y \wedge error'(x) \wedge card(x) = 1 \wedge t_{2,3,4} < t_0 \wedge t_3 \subseteq t_1$
$\wedge t_2 = t_3 + t_4 \wedge \neg know'(j, be-at'(x,z,t_3) \wedge know'(j, be-at(x,z,t_4))]$

In (15) the presupposition part contains a past interval t_1 and a discourse referent y such that the location of y is unknown at t_1. The assertion part is basically identical to the non-Specificity Effect translation in (14b), except that the discourse referent x for the error found by John is a proper part of the discourse referent y from the presupposition, and the time t_3 of the precondition state is a subinterval of the interval t_1 from the presupposition. The assertion part of (15) contains the complete event structure of *meg-talál*, which does not quite correspond to the initial hypothesis, according to which the event structure of this verb is to be partitioned into an assertion and a presupposition part. The solution in (15) is necessary however to guarantee the applicability of *BECOME*.

The specificity of *egy hiba* is follows from two pieces of information in (15): first, the discourse referent x for the error is new, it is introduced with an existential quantifier, just as in the Definiteness Effect sentence (14). Second, x is dependent on the discourse referent y introduced in the presupposition. This dependency in the case of an indefinite is the proper subset relation.

(15a) is meant to convey that the existence of more than one error is presupposed, and that John found a proper (singleton) subset of this set. If the existence of exactly one error were presupposed instead, the appropriate internal argument for *meg-talál* would be a definite, and not an indefinite, as in (15). It is apparent on the other hand that an indefinite internal argument of a Specificity Effect verb cannot be independent from the presupposition this verb triggers. That is, the discourse referent x in (15) cannot be entirely new. This dependency on the other hand is neither equality (that is, not always), nor Skolemization, or some other relation. Partitive–specificity is usually taken for granted by linguists who work on this phenomenon; nevertheless it is not obvious why this dependency should be the proper subset relation. This issue is to be taken up in further work; here I can only suggest that a Hungarian Specificity Effect verb can re-set the relevant context set (cf. Westerstahl (1985)). The discourse referent y introduced in the presupposition part can be seen to provide the domain of the existential quantifier from the assertion part. The advantage of this proposal that prefixation and and the presupposition involved by it is subsumed under A-quantification in the sense of Partee (1995) (cf. also Filip (1996)).

It has been said that the presupposition of a Specificity Effect verb is anaphoric: in (2a-b1), repeated here as (16) the discourse referents from the presupposition are identified with discourse referents from (immediately) preceding discourse. As in (2a-b1) the antecedent of the indefinite in (16b) is the subject of (16a); the temporal antecedent is the consequent state of the event in (16a):

(16) *a.* Tíz diák elveszett
"Ten students became lost"
b. János megtalált egy lányt
"John found a girl" (=one of the students)

In (15) the presupposition part contains existential quantifiers that introduce novel discourse referents. This however can be problematic if these are to be equated with discourse referents already present in context. Accordingly the presupposition in (17), the translation of (16), contains only free variables. Binding from a previous existential quantifier is guaranteed by existential disclosure (Dekker (1993)).

(17) *a.* $\mathbf{C} : \exists t_{1,2,3}.\exists x.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge student'(x) \wedge card(x) = 10$
$\wedge known - where'(x, t_2) \wedge \neg known - where'(x, t_3)]$
b. $\mathbf{P} : \partial(t_4 < t_0 \wedge P(y) \wedge card(y) > 1 \wedge \neg known - where(y, t_4)) \wedge$
$\mathbf{A} : \exists t_{5,6,7}\exists z.[t_{5,6,7,} < t_0 \wedge t_6 \subseteq t_4 \wedge t_5 = t_6 + t_7 \wedge girl'(z) \wedge z \subset y$
$\wedge card(z) = 1 \wedge \neg know - where'(j, z, t_6) \wedge know - where'(j, z, t_7)]$
c. $\hookrightarrow t_6 \subseteq t_3; z \subset x; student'(z).$

In (17) the consequent state t_3 of the first event with the time t_4 of the presupposition is assumed to be equated by means of existential disclosure. What can be inferred is that the time t_6 of the precondition state (of the finding event) is a subinterval of the consequent state t_3 of the getting-lost event. Also, the discourse referent y is equated with the group of ten students introduced in (17a); from this it can be inferred that the girl found by John is one of the students who had been lost.

A problematic feature of (15) and (17) is redundance: information in the presupposition part contains very much the same information as the precondition in the assertion part. (18) offers a more economical solution: the subformula for the precondition state appears only in the presupposition. The assertion part is defective in that it supplies only the consequent state of the event structure for *meg-talál*.

(18) *a.* $\mathbf{C} : \exists t_{1,2,3}.\exists x.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge student'(x) \wedge card(x) = 10]$
$\wedge known - where'(x, t_2) \wedge \neg known - where'(x, t_3)$
b. $\mathbf{P} : \partial(t_4 < t_0 \wedge P(y) \wedge card(y) > 1 \wedge \neg known - where(y, t_4))$
c. $\mathbf{A} : \exists t_{5,6}\exists z.[t_{5,6} < t_0 \wedge t_5 = t_4 + t_6 \wedge girl'(z) \wedge card(x) = 1]$
$\wedge z \subset y \wedge know - where'(j, z, t_6)$

In (18) the same inferences can be obtained as with (17). One of the important differences between the two translations is that in (18) one of the operands of + is from the presupposition part. This is because the presupposition operator is to be allowed to operate on one component of *BECOME* (assuming for the time being that *BECOME* is applicable in this case). Also, (18) conforms better to the initial hypothesis: preconditions of Specificity Effect verbs are presupposed and supplied by context. By contrast, preconditions of Definiteness Effect verbs are assumed to come together with other components of event structure.

That Definiteness Effect verbs have a less readily decomposable event structure is shown by other data on modification:[8]

(19)
a. János majdnem talált egy hibát
"John almost found an error"—no "almost finished finding an error" reading
b. $[_T$ *almost* $[_T \ldots]]$
c. **not:**$[_T[_P][_{S_1}][_{S_2}$ *almost* $[_{S_2} \ldots]]]$

After this excursus on the event structure of Definiteness Effect verbs, and returning to presuppositions of Specificity Effect verbs it has to be noted that if their presuppositions are equated with preconditions, as in (18), the precondition state is no longer the exact opposite of the consequent state, and hence *BECOME* on its usual definition is not applicable directly. It could be applied indirectly: let $\neg\phi$ be the quantifier-free part of the the presupposition; let ψ be the consequent state. $\neg\phi$ entails $\neg\psi$ (if ten students cannot be found then one girl of that group cannot be found either). Then *BECOME* can be applied to partly inferred material.

The question is whether it is desirable to rescue the applicability of *BECOME* to Specificity Effect cases like (2/18). At first sight it may seem that *BECOME* operates on Definiteness Effect verbs (because these verbs have have preconditions of the right kind), and for the sake of uniformity it ought to be applicable to Specificity Effect verbs as well. Reconsidering the translation of the Definiteness Effect sentence in (14) it is not clear that *BECOME* is necessary for a dynamic treatment of Hungarian Definiteness Effect verbs. Ultimately this involves the rejection of the initial hypothesis formulated in **1**. This issue will be discussed in more detail in **3.4**.

μThe previous statement seems to undermine the initial distinction proposed in the expository part of this paper. True, problems with *BECOME* emerged gradually, while this text was being written up. Nevertheless I think that maintaining the precondition/presupposition distinction has indeed been the simplest and most plausible-looking hypothesis. If it proves to be untenable then it has to be replaced with another, presumably less straightforward hypothesis. The mismatches between the static and omniscient logical setting of *BECOME* and a

[8] In contrast with (19), a Specificity Effect sentence with *majdnem* "almost" has only the "almost finished P-ing" reading.

partial dynamic logic became apparent only when they were actually attempted to be brought together. μ

First, in most cases the precondition of a Definiteness Effect verb involves *lack* of information (about some discourse referent). Clearly, if a version of *BECOME* were applicable in this case, it would encompass a transition from ϕ undefined to ϕ true, just like that meaning of *find* which involves learning about the existence of something.

At this point it is useful to recall that Dowty's static translation of English *find*, which was assumed to be applicable to Hungarian *talál* for expository reasons, in effect runs counter to the novelty condition imposed by Hungarian Definiteness Effect verbs.

(20) *a.* find $\rightsquigarrow$
$\lambda\mathcal{P}\lambda x.\mathcal{P}(\lambda y.\exists z.[place'(z) \wedge BECOME[know'(x,[be-at'(y,z)])]])$
b. John found an error $\rightsquigarrow$
c. $\exists t_{1,2,3}.\exists z.\exists x.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge error'(x) \wedge card(x) = 1 \wedge place'(z)$
$\wedge\neg know'(j, be-at'(x,z), t_2) \wedge know'(j, be-at'(x,z), t_3)]$

(13a), repeated here as (20b) says that prior to the finding event John knew about an error x but he didn't know where it was. Now the corresponding Hungarian Definiteness Effect verb *talál* requires that the person who finds an error (or the speaker) have *no* prior knowledge about it. Lack of information corresponds to undefinedness and not to negation. The problem is, (13a), that corresponds to this meaning of *talál/find*, has been found problematic.

Assuming that Definiteness Effect *BECOME* could be defined as a transition from ϕ undefined to ϕ defined, and assuming that *BECOME* also operates on Specificity Effect verbs, this would give us two versions of this operator. One version would be a transition from ϕ undefined, the other from *not-*ϕ.

A similar distinction has already been noted in the earlier literature Generative Semantics, cf. Horn (1978), discussed in a note from Dowty (1979):

(21) *a.* John persuaded Bill not to date girls
b. John dissuaded Bill from dating girls

According to Horn of the above pair only (21b) seems to presuppose that Bill had dating in mind prior to the persuading/dissuading event. The contrast between (21a) and (21b) involves the presence vs absence of explicit intentions prior to change. According to Dowty (1979) the relevant difference is one of scope (i.e. in translations of (21a-b) the scope of negation varies). Even if Dowty's solution is applicable to (21a-b) it can't work with standard Hungarian Definiteness Effect verbs (especially as these verbs rarely incorporate negation as in the case of *dissuade*).

Even if the problem of two *BEOME* operators could be overcome and, say, Landman's operator from (10) would be applicable to Hungarian Definiteness

Effect verbs, updating with $BECOME(\phi)$ would introduce too much information:

(22) *a.* János talált egy hibát $\rightsquigarrow$
("John found an error")

b. $\exists t_{1,2,3}.\exists x.\exists z.[t_{1,2,3} < t_0 \wedge t_1 = t_2 + t_3 \wedge error'(x) \wedge card(x) = 1$
$\wedge place'(z) \wedge \neg know'(j, be - at'(x, z), t_2) \wedge know'(j, be - at'(x, z), t_3)]$

(14b), repeated here as (22b) can correspond to updating context in several steps, because dynamic conjunction corresponds to sequencing (cf. (11e)). That is, the formula in (22b) can in principle be broken up into several update sequences; then the discourse referents in the consequent state $know'(j, be - at'(x, z), t_3)$ would be familiar relative to the context that contains the precondition.

The initial hypothesis (preconditions are presupposed in the Specificity Effect case and come with the main assertion in the Definiteness Effect case) has not received much support in this part. Instead, the balance seems to be tipped in favour of the following hypothesis: preconditions are explicit with Hungarian Specificity Effect verbs, and are underspecified with their Definiteness Effect counterparts. Neither verb class seems to involve the *BECOME* operator. This issue will be taken up again at the end of the **3.3**, which contains a DRT-based analysis of the same Hungarian data. This is not as large detour as it looks, on the contrary, because the DRT approach to be presented lacks *BECOME* altogether, and components of event structure are supplied indirectly by meaning postulates. Also, the question whether preconditions belong to the presupposition or assertion component of lexical representation has been raised independently in Sæbø (1996).

3.3 DRT

3.3.1 Preliminaries: Healing

This part follows the simplified exposition of Kamp–Roßdeutscher (1994a-b), given in Sæbø (1994, 1996).

A discourse representation structure (DRS) is rendered as an ordered pair of sets: the first set contains the universe of that DRS and the second its conditions, as in (23):

(23) *John saw a girl* $\rightsquigarrow$
$\langle\{e, t, t_0, x, y\}, \{AT(t, e), t < t_0, john(x), see(e), girl(y)\}\rangle$

Sentences with presuppositions are represented with an assertion DRS **A** and a

presupposition DRS **P**.

(24) *Jane owns a house and a hotel. The hotel is on a square.* $\rightsquigarrow$
$\mathbf{C}: \langle \{x, y, z\}, \{Jane(x), house(y), hotel(z), owns(x, y), owns(x, z)\} \rangle$
$\mathbf{A}: \langle \{u\}, \{square(u), on(v, u)\} \rangle$
$\mathbf{P}: \langle \{v\}, \{hotel(v)\} \rangle$
$\mathbf{C} + \mathbf{A} + \mathbf{P}$: $f: v \mapsto z$

The mini-discourse in (24) contains a presupposition pertaining to the definite *the hotel*. This is represented in the separate DRS **P**. Presupposition resolution roughly amounts to mapping discourse referents from the universe of the presupposition DRS, U_P into the universe of the context DRS U_C. This mapping has to satisfy a number of principles: the merge of **P** and **A** is to be proper (without free variables), just as the presupposition DRS **P** is to be proper.[9]

In Kamp and Roßdeutscher's approach culmination and culminated process verbs instantiate event concepts. Each event concept C comes with a precondition $PRE(C)$ and a consequent state $RES(C)$. Axioms of change of state concepts (Kamp–Roßdeutscher (1994a-b)) link pairs C and $ANT(C)$. Roughly, $ANT(C)$ corresponds to the opposite of an event (e.g. *healing* and *falling ill*). According to the axioms in (25) the precondition of $ANT(C)$ is the same as the consequent state of C, and conversely. The state that precedes *falling ill*, that is, *being healthy* is of the same kind as the state that follows *healing*:

(25) *a.* $PRE(ANT(C)) \equiv RES(C)$
b. $RES(ANT(C)) \equiv PRE(C)$

As mentioned at the end of the previous subsection, in this framework transitions are not rendered with *BECOME*, mainly because events are primitives in DRT. Precondition states and consequent states are linked with meaning postulate (26) to corresponding events. The exact mechanism of the insertion of (26) is not clear: postulates are assumed to be "there" even if there is no explicit need for them.

(26) $\langle \{s_1, s_2, u, v\} \{s_1 : PRE(C)(u, v), s_2 : RES(C)(u, v), s_1 < s_2\} \Rightarrow$
$\langle \{e\}, \{e : C(u, v), Theme_1(e) = u, Theme_2(e) = v, s_1)(e)(s_2\} \rangle$

(26) guarantees that for any two states such that the earlier one is the precondition of some concept C, and the later one is the consequent state of C there is an event e instantiating C, and e follows the precondition state and precedes the consequent state.)(stands for temporal *abutment*, that is, immediate precedence, without intervening temporal "gaps".

Before analysing the Hungarian data it is useful to see how discourse links are established through preconditions and consequent states. One of the problems

[9] This is different from the properties of ∂ from Beaver (1993) used in the previous subsection: ∂ allows for binding into and out of the presupposition.

discussed in by Kamp–Roßdeutscher (1994b) is the possibility of concluding (27c) from (27a-b). If t' follows t DRT should enable the identification of the consequent state of the first event with the precondition state of the second.

(27) *a.* John comes down with typhoid at t.
b. He recovers at t'.
c. He recovers from THE TYPHOID at t'.

(28) below is Sæbø's rendering of Kamp and Roßdeutscher's original example. The context DRT **C** contains information about an event e of falling ill of typhoid ($ANT(HEILEN)$), together with its consequent state s. This is described as $PRE(HEILEN)$, on account of (25b). The complete assertion DRS **A'** contains a recovery event e' toghether with its precondition state s' and consequent state s''. The problem is, from **C** and **A'** alone one cannot infer that the recovery was from typhoid (i.e. $s'' \mapsto s$), because there is no mechanism to guarantee that s is the same as s''.

(28) $\mathbf{C}: \langle \{e, t, t_0, s, y\}, \{ANT(HEILEN)(e, j, y), typhoid(y), AT(t, e), PRE(HEILEN)(s, j, y), e)(s\}\rangle$
$\mathbf{A}: \langle \{e', t', s', z\}, \{HEILEN(e', j, z), AT(e', t'), RES(HEILEN)(s', j, z), e')(s'\}\rangle$
(after adding postulate (26) about preconditions:)
$\mathbf{A}': \langle \{e', t', s', z, s''\}, \{HEILEN(e', j, z), AT(e', t'), RES(HEILEN)(s', j, z), e')(s', PRE(HEILEN)(s'', j, z), s'')(e'\}\rangle$
s'' cannot be matched to s in **C**. Sæbø's proposal:
$\mathbf{A}'': \langle \{e', t', s', z\}, \{HEILEN(e', j, z), AT(e', t'), RES(HEILEN)(s', j, z), e')(s'\}\rangle$
$\mathbf{P}: \langle \{s''\}, \{PRE(HEILEN)(s'', j, z), s'')(e'\}\rangle$
$\mathbf{C} + \mathbf{A}'' + \mathbf{P}: f: s'' \mapsto s, z \mapsto y, typhoid(z)$

In order to guarantee the inference sought in (27c) Sæbø proposes to treat the precondition of $HEILEN$ as presuppositional and represent it in a separate DRS **P**. Then the function responsible for presupposition resolution maps s'' to s in the universe of **C**, and this yields the information that the state that preceded recovery was a state of typhoid.

This proposal is not extended to other verbs in Sæbø (1996), nor is it discussed in more detail. It is acknowledged moreover that sentences like *John has just recovered from a serious illness* are not unproblematic (the discourse referent for the illness should be familiar).

Sæbø's proposal raises two questions. The first is related to the properties of DRT. The second question is empirical: it concerns presuppositionality in verbs. These will be discussed after the presentation of the Hungarian data.

3.3.2 Hungarian Data and DRT

In this part the Hungarian data will be represented in DRT. Definiteness Effect verbs will be represented as having their complete event structure in the assertion DRS. As in the previous subsection, this will be done mainly for the sake of contrast, and the initial hypothesis is assumed for expository reasons. It has to be noted however that in (29) the precondition state and consequent state s, s' is redundant; they are inserted here because they are allowed by (26). Otherwise nothing requires (or prohibits) their presence.

(29) János talált egy lányt $\rightsquigarrow$
(John found a girl)
$\mathbf{A}: \langle \{e, t, t_0, s, s', x, y\} \{john(x), girl(y), AT(t, e), t < t_0, FIND(e, x, y), s)(e,$
$PRE(FIND)(s, y), e)(s', RES(FIND)(s', y)\}\rangle$

Specificity Effect verbs are represented with their precondition state in the presupposition DRS (assuming a very rudimentary treatment of collective discourse referents):

(30) Tíz diák elveszett. János meg-talált egy lányt. $\rightsquigarrow$
(Ten students got lost. John found a (specific) girl)
$\mathbf{C}: \langle \{e, t, t_0, s, X\}, \{student(X), card(X) = 10, AT(t, e), t < t_0,$
$GET - LOST(e, X), e)(s, RES(GET - LOST)(s, Y)\}\rangle$
$\mathbf{A}: \langle \{e', t', s', x, y\}, \{john(x), girl(y), AT(t', e'), t' < t_0, y \subset Y, card(y) = 1$
$FIND(e, x, y), e')(s', RES(s', y), s'')(e')\}\rangle$
$\mathbf{P}: \langle \{Y, s''\}, \{card(Y) > 1, PRE(FIND)(s'', Y)\}\rangle$
$\mathbf{C} + \mathbf{A} + \mathbf{P}$: $f: s'' \mapsto s, Y \mapsto X$
$RES(GET - LOST)(s, X) = PRE(FIND)(s'', Y), card(Y) = 10.$

In (30) the precondition state of *meg-talál* is equated with the consequent state of *elvész* "become lost" by means of the DRT presupposition resolution mechanism.

On the other hand the precondition state of *talál* in (29) is not guaranteed to be mapped onto states in the context DRS, just as in the case of "non-presuppositional" *HEILEN* in (28). This gives this verb a measure of independence when compared to its Specificity Effect counterpart (cf. (5), repeated here as (31)). Obviously the DRS in (29) is not sufficient to account for the ungrammaticality of in (31) but at least the ± presuppositional distinction can provide a necessary condition.

(31) Egy fiú és egy lány elveszett. *János találta a lányt.
"A boy and a girl had been lost. John found the girl."

β The first problem concerns the status of inferential links in DRT: Kamp and Roßdeutscher concede that the inference sought in (27) is not guaranteed by the DRT mechanism for anaphora resolution, as the relevant discourse referents cannot always be equated. To remedy this situation they propose justification,

a mixture of anaphora and accommodation. The proposal in Sæbø (1996) is to dispense with justification. By making the precondition state of *HEILEN* presuppositional the mapping sought by Kamp and Roßdeutscher is yielded by the algorithm of presupposition resolution (cf. van der Sandt (1992)). It follows from Sæbø's proposal that inferential links comparable to (27) are to be established by means of presuppositions, as a subcase of temporal anaphora. Arguably this is more like temporal specificity than temporal definiteness, which is harder to detect.

The second question is whether all culmination and culminated process verbs are to be analysed as presupposition triggers. It would be well beyond the scope of this paper to make claims concerning event structure in languages other than Hungarian, yet two remarks are in order.

First, telic verbs for recovery in Hungarian are prefixed, e.g. *meg-gyógyul* ("become healthy"), *kigyógyul* ("recover from a specific illness"), and *be-gyógyul* ("be healed", of wounds and lesions). That is, they can be taken as Specificity Effect verbs and then they are presuppositional. That is, the Hungarian data provide support for Sæbø's proposal as far as the particular case of *HEILEN* is concerned.[10]

Second, the contrast in (21), and the Hungarian Specificity Effect/ Definiteness Effect distinction (as opposed to the relative uniformity of the corresponding English verbs) shows that languages (or, indeed, verb pairs in the same language) vary exactly with respect to how much prior information needs to be represented. From Sæbø's proposal one could predict that only verbs presuppositional in this sense can link up to previous material. This prediction is borne out by Hungarian Specificity Effect/Definiteness Effect verbs but so far this is a fairly small and isolated sample of data. β

3.4 Preconditions Again

This part contains the final balance for the two dynamic approaches to lexical decomposition. According to the initial hypothesis Hungarian Specificity Effect verbs differ from their Definiteness Effect pairs in the partitioning of their event structure: preconditions of Specificity Effect verbs have been assumed to be part of their presuppositions. Definiteness Effect verbs have been assumed to come with preconditions too, which were thought to come with the main assertion.

This hypothesis rests on the assumption that preconditions are necessary requisites of verb meanings, being part of truth-conditions. (Indeed, *John brought me a chair that was/had been here* is at least odd.) Then it can be said that the difference between Specificity Effect and Definiteness Effect verbs shows up at the level of discourse information, or information packaging (disregarding the weak–strong distinction of NPs). From this perspective the relevant question

[10] The corresponding prefixless verb, *gyógyul*, is atelic. It is used in progressive or habitual sentences.

has been what discourse status is to be assigned to a piece of truth-conditionally relevant piece of information.

Owing to two factors, the sharpness of the Specificity Effect/Definiteness Effect distinction and mismatches between static and dynamic frameworks the initial hypothesis has been found problematic:

- explicit preconditions are safe in static and omniscient frameworks;
- the static formulation of preconditions in interval semantics is necessary for reasons of scope (cf. Dowty (1979) and brief remarks on (8) and (9) in this paper);
- at least for the case of the Hungarian Specificity Effect preconditions are explicitly needed only when pertaining to presuppositions; in this case *BECOME* is not directly applicable, because the precondition is not the complement of the formula describing the consequent state;
- in *dynamic* frameworks preconditions as components of *BECOME* are redundant, at least for Hungarian Definiteness Effect verbs;
- lexical decomposition in dynamic frameworks (especially partial ones) should render lack of positive information with undefinedness and not with negation; this in itself is an argument against current definitions of *BECOME*, as two versions of this operator would be needed, one for undefinedness, and one for negative information.

In other words, it is suggested that in dynamic frameworks preconditions are needed only when presupposed (or when discourse links need to be established through them). This is sympathetic to the DRT approach: (26) is inserted in a DRS only when a link needs to be built. My proposal involves something stronger, in effect, taking sides with Sæbø (1996): at least for Hungarian, all insertions of (26) are either presupositional or anaphoric.

BECOME in its static formulation is not directly applicable in Specificity Effect cases. It has been argued that it is redundant for Hungarian Definiteness Effect sentences as well.

4 Conclusion; Open Questions

Three further problems are briefly sketched in this part. The first is related to the representativity of the data. Second, the presupposition/precondition dilemma will be taken up again. The third question is about the nature of the dependency between Specificity Effect presuppositions and internal arguments (viz. why this has to be the subset relation).

4.1 Representativity

A very small set of examples has been analysed in this paper. Such toy samples inevitably raise the question of representativity. That is, can all Hungarian prefixed verbs with affected objects said to be presuppositional, given the productivity of prefixation in this language? In this part three more cases are given to show that negation has invariably narrow scope with prefixed verbs and indefinite arguments. By contrast, negating a Definiteness Effect verb+indefinite pair is odd.

The case of verbs prefixed with *el-* (lit. "away") is clear as this prefix involves a familiar Source (even if implicit, as in 32a)). In (32a) the owner or the former location of the dog may be familiar (A. Komlósy, p.c.). Also, *el-lop* passes the negation test: (32b) says that there is a (specific) dog John did not steal.

(32) *a.* János ellopott egy kutyát
John pfx-stole one dog-Acc
b. János nem lopott el egy kutyát
John not stole pfx one dog-Acc
c. ?János nem lopott egy kutyát
John not stole one dog-Acc
? "John didn't steal a single dog"

Prefixes like *be-* (lit. "in") are more problematic since they are definitely not used to highlight Sources. Rather, they are used for familiar (deictically or anaphorically given) Goals. Yet *be-hoz* ("in-bring") passes the negation test: when uttered with neutral intonation (33a) means that there is a specific chair John did not bring in.

(33) *a.* János nem hozott be egy széket
John not brought in one table-Acc
"John hasn't brought in(pfx) a chair"
b. ?János nem hozott egy széket
John not brought one chair-Acc
? "John did not bring a single chair"

In the following example it is hard to see how the indefinite can be specific:

(34) János kinyitott valahol egy ablakot, attól van itt huzat
John out-opened somewhere one window-Acc, this-from is here draught
"John has opened a window somewhere, this is why there is a draught here"

Nevertheless the indefinite has wide scope over negation in (35a):

(35) *a.* János nem nyitott ki egy ablakot.
John not opened out one window-Acc
"John hasn't opened a window"
b. ?János nem nyitott egy ablakot
John not opened one window-Acc
? "John hasn't opened a single window"

It has to be noted that the prefixless variants of negated sentences in (32b, 33b, 35b) are all odd (when uttered with a neutral, "flat" intonation contour). It is simply not the case that the *a* and *b* sentences are each other's duals with respect to scope, with wide scope for Specificity Effect and narrow scope for prefixless, Definiteness Effect cases. Rather, there may be two factors at play here (these may even be related). First, the *b* sentences are Definiteness Effect sentences and as such correspond to *thetic* judgments (cf. Ladusaw (1994)), so they are not *about* some individual. The Specificity Effect sentences in the *a* examples are *categorial* statements; that is, they can be about some individual: apparently prefixation contributes to what has been termed as individuation in (cf. Filip (1996)). At this stage of work however I am not sure whether the indefinites in (34) and (35a) are specific according to Enç's definition or whether they merely have widest scope in their clauses. It is clear that their Definiteness Effect counterparts, the **b** sentences do not contain ordinary new indefinites. The second factor is is that (34) and (35a) involve a contextually restricted set of discourse referents, even if Enç's stronger definition is not applicable to them. That is, (34) and (35a) seem to have antecedent sets, even if these are not familiar, as in partitive-specific cases.

4.2 Preconditions vs Presuppositions Again

4.3 Dependencies: Presupposition as Domain Restriction?

(36) *a.* János meg-talált minden hibát $\rightsquigarrow$
(John (MEG) found every error)
b. $\mathbf{P}: \partial(\wedge t_1 < t_0 \wedge P(y) \wedge card(y) > 1 \wedge \neg known - where'(j, y, t_1)) \wedge$
c. $\mathbf{A}: \exists t_{2,3}.t_{2,3} < t_0 \wedge t_3 = t_1 + t_2 \wedge x \subseteq y \wedge \forall x.error'(x) \rightarrow know - where'(j, x, t_2)$

(37) *a.* János nem talált meg egy hibát
"John has not found (MEG) one error"
b. János nem talált meg minden hibát
"John has not found every error"

(38) *a.* János elrejtett tíz csapdát a programban
"John concealed ten traps in the program"
b. Minden hallgató megtalált egy hibát.
"Every student (MEG) found an error"
c. De a vírust senki sem találta meg.
"But nobody found the virus"

(39) *a.* János járt egy festő műtermében és
John went one painter studio-his-in and
b. meg-vett (tőle) egy festményt
meg-bought (from-him) one painting-Acc
"John visited the studio of a painter and (MEG) bought a painting (from him)"

(40) *a.* Honnan/Kitől vetted (#meg)?
Where-from/Who-from bought-2Sg (meg)?
b. Melyiktől vetted meg?
Which-from bought-2Sg meg?

REFERENCES

Beaver D. 1993: *The Kinematics of Presupposition.* ILLC: Amsterdam.

Bende–Farkas Á. 1995a: Discourse and Prefixation. In Kenesei I. ed. 1995: *Approaches to Hungarian.* **5.** JATE: Szeged.

Bende–Farkas Á. 1995b: *Presuppositions and the Lexicon.* Ms, Research Institute for Linguistics of the Hungarian Academy of Sciences Budapest.

Berg van der, M. 1992: Dynamic Generalized Quantifiers. In Does v.d.J.–Eicjk v.J. eds: *Generalized Quantifier Theory and Applications.* ILLC: Amsterdam.

Berg van der, M. 1993: Full Dynamic Plural Logic. In: Bimbó K.–Máté A. eds.: *Proceedings of the Fourth Symposium on Logic and Language.* Budapest.

Berg van der, M. 1994: A Direct Definition for Dynamic Generalized Quantifiers. In Dekker P.–Stokhof M. eds.: *Proceedings of the 9. Amsterdam Colloquium.* ILLC: Amsterdam.

Blutner R. 1990: Type Shifts in Dynamic Logic and the Definiteness Effect. In: Kálmán L.–Pólos L. eds.: *Prapers from the Second Symposium on Logic and Language.* Akadémiai: Budapest.

Crouch R. 1994: *The Temporal Properties of English Conditionals and Modals.* Ph.D. thesis, University of Cambridge.

Dekker P. 1993: *Transsentential Meditations.* Ups and Downs in Dynamic Semantics. Doctoral dissertation, University of Amsterdam.

Dowty D. 1979: *Word Meaning in Montague Grammar.* Reidel: Dordrecht.

Enç M. 1991: The Semantics of Specificity. *Linguistic Inquiry.* **22**:1–25.

Farkas D. 199: *On Specificity.* Ms, UCSC.

Filip H. 1996: Quantification, Aspect, Lexicon. In: Kruijff G-J, Morrill G., Oehrle D. eds. 1996: *Proceedings of FORMAL GRAMMAR Conference.* ESSLLI'96: Prague.

Fillmore Ch. 1971: Types of Lexical Information. In: Steinberg D.–Jakobovits L. eds.: *Semantics: an Interdisciplinary Reader.* Cambridge University Press.

Goldberg J. –Kálmán L.–Szabó Z. 1990: *External Presuppositions versus Discourse Presuppositions.* Paper presented at a workshop on Presupposition, Lexical Meaning and Discourse Processes of ESPRIT Working Group 3315.

Groenendijk J. –Stokhof M.–Veltman F. 1994: Dynamic Quantification and Update Semantics: This Might Be It. In Cooper R.–Groenendijk J. ed.: *Integrating Semantic theories.* Dyana Deliverable 2.

de Hoop H. 1992: *Case Configuration and Noun Phrase Interpretation.* Doctoral dissertation, University of Groningen.

Horn L. 1978: Lexical Incorporation, Implicature and the Least Effort Principle. *Papers from the Parasession on the Lexicon.* CLS: Chicago.

de Jong F.–Verkuyl H. 1985: Generalized Quantifiers: the Properness of Their Strength. In: van Benthem J.–ter Meulen A. eds.: *Generalized Quantifiers in Natural Language.* Dordrecht: Foris.

Kálmán L. 1989: *How Abstract Is Lexical Semantics?* Ms. HAS: Budapest.

Kálmán L. 1995: Definiteness Effect Verbs in Hungarian. In: Kenesei I. ed.: *Approaches to Hungarian.* **5.** JATE: Szeged.

Kamp H.–Reyle U. 1993: *From Discourse to Logic.* Kluwer.

Kamp H.–Roßdeutscher A. 1994a: Remarks on Lexical Structure and DRS-Construction. *Theoretical Linguistics* **20**:2/3: 96-163.

Kamp H.–Roßdeutscher A. 1994b: DRS-Construction and Lexically Driven Inference. *Theoretical Linguistics* **20**.

Kiefer 1983: *Az előfeltevések elmélete.* [The Theory of Presuppositions. In Hungarian.] Budapest: Akadémiai.

Kiefer F. 1991: *A szöveg időszerkezete.* [Temporal Structure in Discourse. In Hungarian.] Ms: Budapest.

É.Kiss K. 1994: Genericity, Predication and Focus. In Z. Bánréti, ed.: *Papers in the Theory of Grammar*. H.A.S. Budapest.

É.Kiss K. 1995: Definiteness Effect Revisited. In: Kenesei I. ed.: *Approaches to Hungarian*. **5.** JATE: Szeged.

Ladusaw W.A. 1994: Thetic and categorial, stage and individual, weak and strong. In: *Proceedings of Semantincs and Linguistic Theory IV*. (M. Harvey and L. Santelmann, eds.) Cornell University, Ithaca.

Landman F. 1991: *Structures for Semantics*. Kluwer.

Moens M. –Steedman M. 1988: Temporal Ontology and Temporal Reference. *Computational Linguistics*. **14**: 15-28.

Partee B. 1984: Nominal and Temporal Anaphora. *Linguistics and Philosophy* **7**: 243-386.

Partee B. 1995: Quantificational Structures and Compositionality. In Bach E.–Jelinek E.–Kratzer A.–Partee B.H. eds.: *Quantification in Natural Languages*. Kluwer.

Pustejovsky J. 1991a: The Generative Lexicon. *Computational Linguistics* **17**/4:409-441.

Pustejovsky J. 1991b: The Syntax of Event Structure. *Cognition* **41**: 47–81.

SæbøK.J. 1994: Anaphoric Presuppositions and Zero Anaphora. The *Proceedings* of the 9^{th} Amsterdam Colloquium. ILLC: Amsterdam.

Sæbø K.J. 1996: Anaphoric Presuppositions and Zero Anaphora. *Linguistics and Philosophy* **19**:187–209.

van der Sandt R. 1992: Presupposition Projection as Anaphora Resolution. *Journal of Semantics* **9**:333-377.

von Stechow A. 1996: The Different Readings of *Wieder* 'Again': A Structural Account. *Journal of Semantics* **13:**87–138.

Steedman M. 1996: Temporality. In: ter Meulen A.–van Benthem J.eds.: *Handbook of Logic for Linguistics*. Elsevier.

Szabolcsi A. 1986: From the Definiteness Effect to Lexical Integrity. In Abraham W.–de Meÿ S. eds.: *Topic, Focus and Configurationality.* Benjamins: Amsterdam.

Szabolcsi A. 1992: *A birtokos szerkezet és az egzisztenciális mondat.* [Possessive Constructions and Existential Sentences. In Hungarian.] Akadémiai: Budapest.

Verkuyl H. 1993: *A Theory of Aspectuality.* Cambridge University Press.

Westerstahl D. 1985: Determiners and Context Sets. In: van Benthem J.–ter Meulen A. eds.: *Generalized Quantifiers in Natural Language.* Dordrecht: Foris.

Wunderlich D. 1994: Models of Lexical Decomposition. To appear in Weigand E. et al. ed.: *Lexical Structures and Language Use.* Tübingen: Niemeyer.

Wunderlich D. t.a.: CAUSE and the Structure of Verbs. To appear in *Linguistic Inquiry.*

Zucchi A. 1995: The Ingredients of Definiteness and the Definiteness Effect. *Natural Language Semantics* **3:** 33-78.