Toward a Lexical Representation of Phrasal Predicates[1]

FARRELL ACKERMAN
PHILIP LESOURD

1. Introduction

Many languages employ complex predicates composed of a verbal stem (V) and preverb (PV). A preverb, as we use the term here, may be a prefix, a proclitic element, or a particle which is syntactically separable from the verb with which it is construed. When the PV is a bound element (a prefix) the whole composition is a familiar synthetic morphological object (realized as a zero-level syntactic category). When the PV is unbound, the composition is expressed analytically. We will refer to compositions of the latter type as *analytic* or *phrasal* predicates.[2]

There is a general consensus that PV V compositions arise as the result of grammaticalization of earlier collocations of independent lexical items and that the prefixal, proclitic, or particle nature of the PV is a reflex of its diachronic development. Following Traugott and Heine (1991:189), we take grammaticalization to be "[a] dynamic, unidirectional historical process whereby lexical items in the course of time acquire a new status as gram-matical, morphosyntactic forms, and in the process come to code relations that either were not coded before or were coded differently".

Predicate formation is a particularly rich domain of systematic grammaticalization. Broadly construed, this domain encompasses causatives, serial verb constructions, and resultative constructions, among other types of complex predicates. Less frequently analyzed among the class of complex predicates are PV and V combinations like those exemplified by Serbo-Croatian and Hungarian. Serbo-Croatian makes use of complex predicates containing a prefix, while Hungarian employs complex predicates con-taining a particle.

Consider first the Serbo-Croatian examples in (1). In (1a) we have a simple one-place predicate meaning 'scream', which may cooccur with an adjunct expressed as a prepositional phrase or as a dative-marked nominal. The complex predicate in (1b) displays a different lexical semantics, a different case-government pattern, and a different grammatical function array:

---

[1]The authors would like to thank the participants at the complex predicate workshop for their comments concerning this paper as well as for their own thought-provoking contributions. We are also grateful to Mark Gawron, Katalin É. Kiss, John Moore, Christopher Piñón, Ivan Sag, and Gert Webelhuth for their insights concerning several aspects of the present proposal.

[2]Our use of the term "phrasal predicate" should not be taken to imply that we believe that the pieces of an analytically expressed predicate will always form a constituent in syntactic structure. Rather, we assume that the syntactic expression of a given predicate will depend on the lexically specified properties of its parts and on the syntactic construction in which it appears.

it is a two-place predicate which means 'scold' and governs the dative case for its indirect object. [3]

(1) a. *Majka* je **viknula** na dete / detetu.
mother 3sg screamed at child-ACC / child-DAT
'The mother screamed at the child/to the child.'

b. *Majka je* ***pod-viknula*** * *na dete* / ***detetu***.
mother 3sg PV-scolded at child-ACC / child-DAT
'The mother scolded the child.'

In Hungarian, the simple one-place predicate in (2a) means 'shout' and may cooccur with an adjunct in the dative case. In (2b) we have a two-place predicate formed with the separable PV *rá* 'onto'. This complex predicate displays a lexical semantics, case-government pattern, and grammatical function array different from those of the simple predicate in (2a).

(2) a. *Az anya* ***kiáltott*** *a gyereknek* / * *a gyerekre.*
the mother shouted the child-DAT / the child-SUBL
'The mother shouted to the child.'

b. *Az anya* ***rá*** ***kiáltott*** * *a gyereknek* / ***a gyerekre***.
the mother onto shouted the child-DAT / the child-SUBL
'The mother shouted at the child.'

It is evident that the use of a PV in composition with a simple predicate yields parallel effects in Serbo-Croatian and Hungarian: the addition of a PV correlates with changes in lexical semantics, valence, case government, and grammatical function assignments. Yet complex predicates in the two languages differ with respect to their form of expression: while PVs are prefixes in Serbo-Croatian (and the predicates are therefore synthetic word-forms), PVs are separable particles in Hungarian (and the predicates are phrasal).

Separable PVs present a well known problem for linguistic theory, which Nash (1982) has called an "analytic paradox". The essence of the dilemma was pointed out by Watkins (1964:1037) in connection with early Indo-European examples: on the one hand, PV V compositions appear to constitute "single semantic words", suggesting that they have a status comparable to that of ordinary lexical items; on the other hand, they permit *tmesis*, or syntactic separation, suggesting that they have the status of

[3]The following abbreviations for nominal cases are employed in glosses: ABL = ablative, ACC = accusative, ALL = allative, DAT = dative, EL = elative, ILL = illative, IN = inessive, INST = instrumental, LAT = lative, SUBL = sublative, SUP = superessive. We employ standard orthography in citing Hungarian forms, except that we write PVs as separate words in compositions in which the PV is syntactically separable.

phrases. This dual behavior seems particularly problematic for lexicalist theories, which essentially view the lexicon as a source of words and the syntax as a system for combining and ordering them.

One of our principal goals in this paper is to clarify the issues that arise if phrasal predicates are to be accommodated within a lexicalist view of syntax. In particular, we suggest that standard lexicalist assumptions concerning the division of labor between syntactic and lexical rules can be maintained if we adopt a theory of lexical representations which permits a single lexical entry to specify the properties of two (or more) cooccurring but syntactically independent words.

The arguments that we present here are based primarily on the semantic, syntactic, and morphological properties of the PV V compositions of Hungarian.[4] Yet essentially the same issues arise in the analysis of other types of complex predicates whenever we seem to find mismatches between lexical status and syntactic expression. In particular, we argue that our account of the PVs of Hungarian has implications for the analysis of periphrastic causatives like those considered elsewhere in this volume in papers by Alsina and Butt, although our conclusions differ from theirs on the direction that we should move in modifying standard lexicalist assumptions to accommodate complex predicates.

We begin by considering more explicitly why phrasal predicates present an analytic paradox. We then turn to a comparison of two ways in which this paradox may be resolved, arguing that the properties of PV V compositions in Hungarian are instructive in choosing between them. We suggest that the Hungarian evidence provides support for an approach to complex predicates which (i) permits lexical representations to be expressed by pieces that are separate in syntax, that is, by encodings which violate lexical integrity as this principle is usually understood; and (ii) recognizes the central role of grammaticalization in mismatches of this sort. We conclude by elaborating a typology of predicate forms and considering, in broad outline, how our approach might be extended to explain the observed distribution of meaning-to-form mappings.

Our discussion is programmatic, in part because we believe that an approach of the type that we advocate here could be implemented within any of a variety of contemporary syntactic frameworks, with differing consequences for the details of a formal account. More formal proposals along the lines suggested here may be found in Webelhuth and Ackerman (1992, to appear).

2. An Analytic Paradox

Phrasal predicates have been attested in a wide variety of genetically and geographically unrelated languages. They are found, for example, in

[4]A more detailed account of the phrasal predicates of Hungarian is presented in Ackerman and LeSourd 1993, where we also argue for the lexical status of the analytically expressed PV V compositions of Fox (Algonquian).

Warlpiri (Australian), Chechen-Ingush (Caucasian), Fox (Algonquian), and in Germanic languages, as well as in Hungarian and other Ugric languages.

As we noted above, the separable PV *rá* 'onto' forms phrasal predicates in Hungarian. The relevant material from (2b) is repeated in (3a). The syntactic separability of the PV becomes evident in clauses with sentential negation. In such clauses, the negative element *nem* 'not' appears immediately to the left of the verb and the PV is postposed.[5] This behavior is illustrated in (3b), where *rá* follows *kiáltott* 'shouted'.

(3) a. *Az anya* ***rá*** ***kiáltott*** *a gyerekre.*
the mother onto shouted the child-SUBL
'The mother shouted at the child.'

b. *Az anya* *nem* ***kiáltott*** ***rá*** *a gyerekre.*
the mother not shouted onto the child-SUBL
'The mother did not shout at the child.'

We provide further evidence of the syntactic independence of PVs in section 3.3 below.

For present purposes, we will assume the following diagnostics for lexical unithood (and, consequently, for association with a lexical representation): PV and V constitute a lexical unit if the semantic interpretation of PV V is idiosyncratic or non-compositional or if PV V differs from V with respect to valence or case government. Under the assumptions of some syntactic frameworks (but not others), differences between PV V and V in grammatical function assignments may also be taken as diagnostic of the lexical status of PV V compositions.

On all of these grounds, *rá kiáltott* as a whole seems to require a lexical representation comparable in all respects to that of a morphologically integrated (or synthetically expressed) word. (Compare the Serbo-Croatian examples in (1).) Yet its parts may be positioned indpendently in syntax.

Le Roux (1988), focusing on data from Dutch and Afrikaans, argues that phrasal predicates have found unsatisfactory treatments within lexicalist frameworks. She argues, correctly we believe, that the failure of lexicalist accounts may be attributed to certain standard assumptions constraining lexicalist proposals. The culprits, she suggests, are the Lexicalist Hypothesis and the Lexical Integrity Hypothesis. In effect, it is these principles (and the view of lexicalism which they reflect) which make phrasal predicates seem paradoxical.

---

[5]We refer to PVs as "postposed" in examples like (3b) only for expository convenience. For our purposes here, it makes no difference whether examples of this kind are analyzed as involving rightward movement of PV, leftward movement of V, or direct generation of these elements in their surface positions.

The Lexicalist Hypothesis and Lexical Integrity may be formulated as follows:[6]

(4) a. *Lexicalist Hypothesis:*

All morphological derivation is carried out in the lexicon.

b. *Lexical Integrity:*

Syntactic rules neither analyze nor alter word structure.

These hypotheses support a common interpretation of lexicalism which we will refer to as the Hypothesis of Morphological Lexicalism. This hypothesis may be characterized as consisting of two sets of *Cherished Beliefs* (CBs):

(5) *Hypothesis of Morphological Lexicalism:*

(CBa) (i) Information about argument structure, valence, case government (and grammatical function assignments, in some frameworks) is associated exclusively with lexical representations.

(ii) Only lexical rules may alter or determine information in these domains.

(CBb) (i) Only morphological objects may be associated with lexical representations (with the possible exception of phrasal idioms).

(ii) Morphological objects exhibit lexical integrity.

CBa (i) claims that certain types of information are associated with a class of formal objects called *lexical representations.* For the sake of concreteness, we may take lexical representations to express essentially the information associated with lexical entries in standard Lexical Functional Grammar (LFG), i.e., information about semantic structure, argument structure, and grammatical structure. We will refer to the ensemble of information of these three types as *L-information.* [7]

CBa (ii) establishes a restriction on the operations which may affect L-information: such operations are exclusively the province of lexical rules.

CBb (i) asserts that lexical items (apart from idioms) are *morphological objects.* We assume that this notion may be characterized along the lines suggested in Di Sciullo and Williams 1987: a morphological object is "an

[6]The Weak Lexicalist Hypothesis, which permits the inflected forms of words to be constructed in syntax, is sufficient for our purposes here. The Strong Lexicalist Hypothesis, which would restrict both derivation and inflection to the lexicon (Lapointe 1980), will play a small role below.

[7]Mohanan has argued in her recent work (1990, this volume) that the lexical semantics of a predicate, its argument structure, and the grammatical function assignments of its arguments should be interpreted as three coordinated levels of information. Lexical representations, in the present context, may be viewed as including triplets of the information associated with these levels in Mohanan's framework.

item whose internal composition and structure is given by the set of strictly morphological principles of the language…"[8]

Taken together, CBb (i) and CBb (ii) state a view of the relationship be-tween morphological form and the organization of the lexicon: the formal expression of lexical representations is restricted to objects which display lexical integrity (apart from the case of idiomatic expressions, which might have a lexical status in some sense as listed phrases).[9] Moreover, on the as-sumption that lexical rules may only relate lexical representations, it follows that lexical rules are constrained to relate morphological objects.

It is this conclusion that renders the behavior of phrasal predicates paradoxical. The formation of predicates of this type involves the manipulation of L-information, and must therefore be carried out by lexical rules. But the resulting constructs fail to exhibit lexical integrity. Thus they cannot be classified as morphological objects, cannot be associated with lexical representations, and cannot be formed by lexical rules.

In principle there are several possible resolutions of this paradox, given the specific Cherished Beliefs that we have outlined above. We will limit ourselves in this paper, however, to an exploration of just two. Option 1 abandons CBa, while option 2 abandons CBb. In this respect they represent equally conservative moves with respect to Morphological Lexicalism. It is our intention to compare the ways in which each alternative addresses the resolution of the apparent paradox presented by the behavior of phrasal predicates. In order to facilitate this comparison, we outline the central ingredients of each option below.

In option 1, the abandonment of CBa permits L-information which could formerly be determined only by lexical rules to be determined by other types of operations as well. The preservation of CBb ensures that there is a continuing role for the notions "morphological object" and "lexical integrity" in linguistic theory: if an object participates in morpological operations, it will exhibit lexical integrity and may be associated with L-information. The abandonment of CBa, however, permits phrasal entities (i.e., non-morphological objects) to be associated with L-information. In such instances L-information is not associated with lexical representations.

---

[8]This formulation of the position of Di Sciullo and Williams is taken from Anderson 1992:306.

[9]In this connection it worth citing in full the following remarks concerning lexical integrity from Bresnan and Mchombo (1993): "A fundamental generalization that morphologists have traditionally maintained is the *lexical integrity principle,* that words are built out of different structural elements and by different principles of composition than syntactic phrases. Specifically, the morphological constituents of words are lexical and sublexical categories---stems and affixes---while the syntactic constituents of phrases have words as their minimal, unanalyzable units; and syntactic ordering principles do not apply to morphemic structures… [I]t has been hypothesized that the lexical integrity principle holds of the morphemic structure of words, independently of their prosodic or functional structure".

A cogent formulation of this option is presented in Alsina (this volume).[10] We will refer to his proposal as the Two Source view of complex predicate formation, since it posits that relevant ensembles of information may be determined not only by lexical rules but also by operations which compose information associated with phrase structure constituents.

The type of L-information which is relevant to Alsina's formulation of option 1 is argument structure (a-structure). On the basis of evidence from causatives in Chichewa (Bantu) and Catalan (Romance), Alsina argues that a given a-structure may be associated either with a morphological object (e.g., a morphological causative in Chichewa) or with a phrasal object (e.g., an analytic causative in Catalan). A-structures come to be associated with phrasal objects, however, not through lexical operations but as a result of operations defined over syntactic structures:

> By assuming the same a-structure for causative constructions in both Romance and Bantu, we derive the right syntactic expression of arguments for both, given the same mapping principles and an independently required difference regarding case-marking. By assuming, however, that the complex a-structure of causatives is formed in the lexicon (and therefore instantiated in one single word) in Chichewa, but is formed in the syntax (and therefore instantiated in two different syntactic nodes) in Catalan, we account for [their] differences... (this volume:xx)

The differences alluded to here concern precisely the status of causative expressions as morphological objects or as analytic expressions in phrase structure: the Bantu forms behave uniformly as morphophonologically integrated units in accordance with lexical integrity, while the Romance forms exhibit behavior consistent only with a phrasal representation. In particular, the pieces of the Bantu forms fail to participate in such syntactic relationships as coordination and separability, but they do participate in such reliably morphological processes as nominalization. Given the assumption that morphological derivation only relates lexical objects, the Bantu causatives must be formed in the lexicon. In contrast, the pieces of the Romance causative forms participate in syntactic relationships such as coordination and separability, but do not jointly serve as bases for morphological derivation, suggesting that the parts of these causative formations are assembled only in syntax.

The logic of Alsina's argument is clear: given consistent behavioral differences between causatives with different expression types and given their similar a-structures (a type of L-information), a-structure is orthogonal to surface expression. As we will see below, however, one can concur with this conclusion without necessarily accepting the theoretical consequences that Alsina infers from it and without adopting the theoretical apparatus he develops to obtain these consequences.

Note that CBb plays a central role in Alsina's argument: the Two Source approach to complex predicate formation assigns a crucial theoret-

---

[10]We highlight here only the most germane aspects of Alsina's analysis, in order to convey a particular implementation of option 1 in concrete terms.

ical status to the correlation between participation in morphological operations and evidence of lexical integrity, treating this conjunction of properties as diagnostic for determining the domain of composition of a predicate. On this view, languages contain complex predicates that simply do or do not participate in morphological operations and behave accordingly with respect to lexical integrity. The behavior of a complex predicate in these respects reveals its domain of composition.

The disctinction between morphological and analytic caustatives is implemented in Alsina's proposal by analyzing causative morphemes as "incomplete predicates", i.e., predicates which must combine with another predicate to obtain a full a-structure. The morphological and syntactic status of the causative morpheme is then determined by what Alsina calls the Incomplete Predicate Parameter: in some languages, an incomplete predicate must compose with another predicate in the lexicon; in other languages, an incomplete predicate may be inserted into syntactic structures like any other lexical item, composing with another predicate only through an operation defined over syntactic structures.

> Thus, the Incomplete Predicate Parameter... predicts the existence of exactly two types of languages: (a) languages like Bantu, where complex predicates can only be formed in the lexicon and where incomplete predicates, therefore, must always be affixes, and (b) languages like Romance, where complex predicates can be formed either in the lexicon or in the syntax and where incomplete predicates must compose with another predicate yielding a complete predicate in order to project a phrasal category. (this volume:xx)

We see, then, that Alsina's typology of the modes of expression of predicates is based on the observation that a complex predicate in Bantu or Romance is either a synthetic morphological object or an analytic non-morphological object. As we will demonstrate in detail below, however, the behavior of PV V predicates in Hungarian is problematic for this simple typology, since these compositions exhibit *both* morphological *and* phrasal properties. The existence of objects like these, which participate in morpho-logical processes but nonetheless exhibit phrasal behavior, calls into ques-tion the relationship between lexical integrity and morphological status. Thus we have reason to examine an option for resolving the analytic para-dox presented by phrasal predicates which does not subscribe to CBb.

We will refer to this alternative view as the Single Source theory of complex predicate formation, since it retains the assumption that manipulations of L-information are performed only by lexical rules. That is, it accepts the provisions of CBa. The Single Source view abandons CBb, permitting lexical representations to be associated with objects which do not exhibit lexical integrity. Thus it does not assume that observations concerning lexical integrity will always be instructive in establishing the domain of composition for complex predicates.

The alternative to CBb that we wish to propose retains a principle of lexical integrity, but not in a form in which failure to display lexical integrity is diagnostic of non-lexical status. In particular, we propose that lexic-

al entries may specify the properties of two (or more) coocurring words (in the sense of zero-level syntactic categories). Each word so specified will display lexical integrity. Thus the lexicon specifies the atoms of syntactic representations, as before, but not in the sense that each lexical entry corresponds to a single syntactic atom. Moreover, we propose that the composition specified by a lexical entry may or may not have the status of a morphological object. That is, the lexical rules of a particular language may or may not include morphological operations defined over a phrasal predicate as a whole.[11]

The alternative understanding of lexicalism which informs our implementation of the Single Source theory of predicate formation may therefore be formulated as follows:

(6) *An alternative interpretation of lexicalism:*

(CBa) (i) Information about argument structure, valence, case government (and grammatical function assignments, in some frameworks) is associated exclusively with lexical representations.

(ii) Only lexical rules may alter or determine information in these domains.

(CBb) (i) Lexical representations may be expressed

(a) by morphological objects, which may receive either synthetic or analytic expression in syntax, or

(b) by non-morphological objects, i.e., syntactically independent zero-level categories which do not jointly have any morphological status.

(ii) Each zero-level syntactic category specified in a lexical representation displays lexical integrity.

Here CBa is retained unchanged, while our revised version of CBb essentially denies that morphological objects will necessarily be realized as single syntactic words or that lexical entries are to be identified with zero-level syntactic categories (the so-called "lexical categories" in syntactic representations). Lexical integrity holds only of objects which are specified as syntactic atoms (i.e., words) in lexical entries. As on the Two Source account, however, both simple and complex predicates are associated with comparable ensembles of information, independently of their surface expression as synthetic or analytic objects.

Our revised version of CBb immediately raises a question, however. Familiar accounts of "lexical insertion" deal with synthetically expressed

[11]Note that our proposal allows in principle for morphological operations which are defined over syntactically discontinuous material. That it may in fact be necessary to postulate morphological operations of this kind is suggested by the phenomenon of preverb climbing discussed in section 3.3 below.

predicates. But how are the parts of an analytic predicate associated with positions in syntactic structure?

Let us suppose that phrase structure is projected in the usual manner (in one or another framework) from each of the syntactic words which is specified in a lexical entry. In the case of Hungarian, we expect the verb of a PV V composition to determine the usual projections for a verb. The PV, as a particle, will presumably fail to determine any phrasal projections of its own, or at least no projections which include any material apart from the particle itself. In the case of a periphrastic causative which involves two categorial verbs, we expect both verbs to determine the usual set of projections.

Let us further suppose that one word in the lexical entry for a phrasal predicate is designated as the head of the predicate and that this designation is interpreted as requiring the projections of any other words in the entry to be contained within the domain of phrase structure which is projected from this head. In this way, we may insure that all of the pieces of a phrasal predicate will be realized within a unified phrase structural domain, except, of course, under the usual sorts of syntactic conditions which determine when items may de dislocated from their basic positions. In this way, we may obtain essentially the same result for Catalan causatives as that which Alsina achieves by permitting the mapping principles of LFG to be applied to the output of the operation which composes the argument structure of causatives in this language on the basis of syntactically defined structures.

Given a theory of this general type, it would not appear to be necessary to assign the ensemble of elements which make up a phrasal predicate to any particular category in lexical representations. In particular, the phrasal predicate as a whole need not be assigned to a phrasal category in the lexicon.[12] Thus we avoid having to duplicate in the lexicon the power of the syntactic component to assign strings of words to phrasal categories. At the same time, we avoid any questions about the range of syntactic constituent types which may be granted lexical representation, at least as far as the analysis of phrasal predicates is concerned.

Of course, we have proposed that phrasal predicates may be analyzed as such by morphological rules. Even here, however, our proposal need not be interpreted as implying any bracketing of the phrasal predicate as a whole within the lexical entry iteself or any lexical assignment of categorial status to the whole of the predicate. A lexical representation as such is an entity which is available to lexical rules. These rules simply map lexical entries into lexical entries, although a particular rule may of course be restricted to apply to representations of a particular form.

Permitting direct lexical representation of analytic expressions raises another question as well: why do lexical items typically display lexical integrity? It is in this connection that the process of grammaticalization is particularly instructive.

---

[12]Our proposal differs in this respect from that of Ackerman 1987, where PV V compositions were assumed to be lexically formed V-bars.

Consider, for example, the case of Nadëb, a Maku language of NW Brazil. Weir (1986) argues convincingly that the PVs of this language are historically derived from postpositions, which continue in use in their older function as well. At an earlier stage in the history of the language, she suggests, all PVs were proclitic elements, as many are now. Some PVs have now been reanalyzed as affixes, however, either generally or in combination with particular verbs. The proclitic forms are homophonous with the corresponding postpositions, while the vowels of the affixal forms have been modified to conform to the pattern of other affixes.[13]

We see, then, that contemporary Nadëb attests several stages in a diachronic process through which collocations of a free form (in this case, a postposition) and a verb may develop into an affixed word. Watkins (1964) describes a similar course of development for preverbal elements in Indo-European: an independent word is reinterpreted as part of a phrasal predicate (permitting tmesis), then becomes fixed in preverbal position, where it is ultimately reanalyzed as an affix.

These diachronic developments suggest that phrasal predicates in general have a marked status with respect to synthetically expressed lexical items. It is this marked character of analytic predicates which accounts for the historical tendency to eliminate them in favor of expressions which conform to our expectations of lexical integrity.

This marked character of analytically expressed lexical items is perhaps to be expected in any case. After all, the lexical entry for a phrasal predicate will typically be more complex than that of a synthetic expression with a similar meaning, simply because it must specify more than one word, together with information about the category to which each word belongs, whether or not it is permitted to project phrase structure, etc.[14] Moreover, lexical rules which are formulated to derive or relate phrasal predicates will typically be more complex than lexical rules which deal only with synthetic expressions, again because provisions must be made for additional structure where a phrasal predicate is involved.

We hope, then, to have demonstrated that the Single Source theory of phrasal predicates has a certain initial plausibility, and thus that it is reasonable to pursue an alternative to the Hypothesis of Morphological Lexicalism which maintains many of the basic premises of lexicalist theories, weakening but not completely abandoning the principal of Lexical Integrity.

---

[13]Craig and Hale (1988) argue that the affixed PVs of Nadëb (and several other languages) are synchronically derived from postpositions through a syntactic process of incorporation. We would argue, however, that the PV-V compositions of Nadëb (particularly those in which the PV is an affix) display many of the hallmarks of lexical formations: the proclitic form is preferred for some preverbs, the affixed form for others; in some cases in which the affixed form is the preferred or only variant, the meaning of the PV-V complex has undergone semantic drift, etc. (See Weir 1986 for discussion.)

[14]Naturally there are questions to be raised here about the types of structure that may be assigned to synthetic expressions, about whether bound morphemes may be assigned to grammatical categories, etc. Note, however, that these questions largely dissolve if we follow Anderson (1992) or Bochner (1992) in abandoning the traditional concept of the morpheme.

We turn now to empirical evidence which bears on the choice between the Two Source and Single Source accounts of complex predicate formation. To repeat the crucial point from the discussion above: the parameter defined in the Two Source approach, as Alsina frames it, predicts a simple complementarity in the expression types used for encoding L-information. Failure of lexical integrity implies non-morphological status. In contrast, the Single Source approach permits L-information to be associated with various (lexically formed) expression types and allows for morphological objects which do not display lexical integrity.

3. Phrasal predicates in Hungarian

Although Hungarian makes almost no use of prefixes in the usual sense, it employs a categorially and functionally diverse class of PVs which combine with verbal stems to form complex predicates. These elements occur exclusively as modifiers of verbs. There is no comparable class of forms which serve as modifiers of words of other categories. Although certain types of complex PVs do occur, as we will see below, sequences of PVs are typically not permitted.

In several respects, PV V compositions resemble compound words. Just as main stress is assigned to the prior member of a compound, the main stress of a PV V composition falls on the PV, provided that it immediately precedes the verb with which it is construed. Like compound members, PVs are treated like words for the purpose of vowel harmony, a pervasive process in Hungarian. PV V complexes differ from compounds, however, in the syntactic independence of their parts. Moreover, a subset of the PVs of the language may host incorporated pronominals, indicating that the PV itself is available to rules of inflectional morphology.

We provide a brief survey here of the PVs of Hungarian, then turn to evidence which bears on the lexical, syntactic, and morphological status of PV V compositions.

3.1 Types of preverbs

From a functional perspective, some PVs serve to modify the information content of the verb with which they are combined: they alter aspect, convey inchoative aktionsart, or change lexical semantics, valence, case-government properties, grammatical function assignments, etc. Other PVs (including case-marked nominals) behave like incorporated elements by saturating a position in the argument structure of the simple verb. PVs may accordingly be classified into two main functional types: information-altering and argument-satisfying. Reliable criteria for determining the status of a particular PV are elusive, however, and the boundary between these types is rather fluid and in constant diachronic flux.

In this paper, we consider only the information-altering PVs of Hungarian, sometimes termed *prefixal preverbs*. Some of these elements have synchronic counterparts in postpositions, case-markers, or adverbials. Others are historically related to such forms. From a diachronic perspec-

tive, then, PVs clearly represent formerly independent items which have become dependent on a verb.

Table 1 provides an inventory of the most common prefixal PVs of Hungarian, ranked according to their statistical frequency as determined by Jakab (1976). It is often difficult to assign a consistent sense to any given PV. The glosses provided here are meant only to suggest a "central" sense of the PV, in so far as this can be determined.[15] Whatever the meaning of a particular PV, however, the combination of a PV and a verb is typically interpreted as perfective. (The PV *meg* is historically related to the adverb *mögé* and the postposition *mögött*, both meaning 'behind', but functions primarily as a marker of perfective aspect in the contemporary language.) Information about case government is provided in the table where a PV typically mandates the use of a particular case form of a complement of the associated verb. PVs which may incorporate pronominals are marked with a following "(i)".

Some Common Hungarian Preverbs

Preverb	Gloss	Case	Preverb	Gloss	Case
1. *meg*	PERF		21. *félre*	'to side'	
2. *ki*	'out'	EL	22. *neki* (i)	'toward'	DAT
3. *el*	'away'		23. *egybe*	'together'	
4. *le*	'down'		24. *agyon*	'entirely'	
5. *fel*	'up'		25. *haza*	'home'	
6. *be*	'into'		26. *keresztül*	'through'	SUP
7. *át*	'across'	SUP	27. *ide*	'hither'	LAT
8. *össze*	'together'	INST	28. *utána* (i)	'after'	DAT
9. *vissza*	'back'		*elöre*	'before'	
10. *rá*	'onto'	SUBL	29. *tele*	'full'	INST
11. *bele* (i)	'into'	IN	30. *újra*	'again'	
12. *szét*	'apart'		31. *ketté*	'in two'	
13. *oda*	'thither'	LAT	*közbe*	'together'	
14. *elö*	'before'		32. *felül*	'above'	SUP
15. *hozzá* (i)	'up to'	ALL	33. *hélyre*	'to a place'	
16. *végig*	'til'		*széjjel*	'apart'	
17. *körül*	'around'		*ujja*	'anew'	
18. *hátra*	'back'		34. *szembe*	'opposite'	
19. *túl*	'beyond'	SUP	*tovább*	'further'	
20. *alá* (i)	'under'	DAT			

Table 1

[15]In discussing the "senses" or "meanings" of the preverbs of Hungarian, Zsirai (1933: 40) cites an appositie characterization of the prefixes of Russian provided by Karcevski: "The prefixed verb is like a complex idiogram whose exact meaning is discoverable only with knowledge of the context in which it is employed".

The semantic diversity of these PVs is evident. Their categorial diversity is also noteworthy. To cite a few examples: *ki* 'out' (2) has no synchronic analog; *be* 'into' (6) is the inessive case marker; *át* 'across' (7) and *alá* 'under' (20) are postpositions, *neki* 'toward' (22) is identical with the dative form of the third person singular pronoun, *agyon* 'entirely' (24) is a nominal (*agy* 'head') in the superessive case, and *újra* 'again' (30) is a derived adverb.

3.2 The lexical status of phrasal predicates

By all of the criteria enumerated in section 2, the PV V compositions of Hungarian must be considered lexical items: PVs may modify the lexical semantics of a simple verb, including its argument structure and its selectional properties; and they may effect changes in valence, case-government properties, and grammatical function assignments.

Consider, for example the effect of combining a directional PV with a motion predicate such as *dob* 'throw'. The simple predicate in this case may be used with any type of complement which specifies a goal. In particluar, *dob* imposes no selectional restriction on the topological properties of the referent of its complement, as illustrated in (7a). In contrast, *be dob* 'throw into' selects a complement which indicates containment in an enclosed space. This complement may be expressed either by an appropriate postpositional phrase or by a nominal in the illative case (suffix *-ba ~ -be*), as shown in (7b). Finally, *bele dob* 'throw into a narrowly contained space' specifically requires an illative complement, as in (7c).

(7) a. *A fiú* ***dobta*** *a labdát* *a fal felé* /
the boy threw-3sg/DEF the ball-ACC the wall toward /
*a tó**ba**.*
the lake-ILL

'The boy threw the ball toward the wall / into the lake.'

b. *A fiú* ***be*** ***dobta*** *a labdát* *a szék alá* /
the boy into threw-3sg/DEF the ball-ACC the chair under /
*a tó**ba**.*
the lake-ILL.

'The boy threw the ball under the chair / into the lake.'

c. *A fiú* ***bele*** ***dobta*** *a labdát* *a doboz**ba*** /
the boy into threw-3sg/DEF the ball-ACC the box-ILL /
* *a szék alá.*
the chair under

'The boy threw the ball into the box / * under the chair.'

Here it is clear that the use of a PV affects both the selectional properties of the verb and its case-government pattern.

A fairly regular class of complex predicates that are formed (at least somewhat productively) with the PV *neki* 'toward' provides examples in which the use of a PV affects the valence of a verb, in conjunction with its lexical semantics and its case-government properties. In one class of predicates of this type, the use of *neki* confers a sense of incipient action (*neki ered* 'begin to rain', *neki forrosodik* 'begin to run high', *neki gyürközik* 'buckle down to something', *neki hevül* 'begin heating up', *neki lát* 'begin, buckle down', *neki vadul* 'begin to get infuriated', *neki bátorodik* 'pluck up courage', etc.). With verbs of motion, the addition of *neki* indicates action directed toward a target. In formations of both types, the addition of *neki* may derive a two-place predicate from a one-place predicate. The complex predicate then governs the dative case (suffix *-nak* ~ *-nek*) for the its non-subject argument. Examples involving verbs of motion are given in (8). Here the addition of *neki* derives two-place predicates from the one-place predicates *rohan* 'rush' and *megy* 'go'.

(8) a. *A tigris* ***neki*** ***rohant*** *a ketrec rácsá****nak***.
the tiger toward rushed the cage bars-3sg-DAT
'The tiger flung itself against the bars of the cage.'

b. *A darázs* ***neki*** ***megy*** *az ablaküveg****nek.***
the wasp toward goes the windowglass-DAT
'The wasp hits the windowglass.'

On the assumption that only the complements of a predicate may be case-governed, the dative marked nominals above must be analyzed as complements of the complex predicates *neki rohan* and *neki megy.*

A small, but regular, class of complex predicates is derived by combining the PV *bele* 'into' with a one-place predicate which denotes a state, yielding a two-place predicate, with the additional argument specifying why the state obtains for the subject. *Bele* determines government of the illative case for the non-subject argument of causal predicates of this type, just as it does in its directional use in examples like (7c) above. Representative examples are given in (9).

(9) a *A fiú* ***bele*** ***bolondult*** *a lány****ba***.
the boy into was.crazy the girl-ILL
'The boy flipped over the girl.'

b. *A fiú* ***bele*** ***vakult*** *abba a komoly betegség****be***.
the boy into was.blind that-ILL the serious illness-ILL
'The boy went blind because of that serious illness.'

Here again, then, we see that the additional of PV to a verb may affect its valence and determine the case-government properties of the resulting complex predicate.

The PV *meg* has often been identified as primarily an aspectual element: unlike many other PVs, its semantic contribution beyond aspect is generally opaque. Despite the limited semantic force of the PV itself, however, the presence of *meg* is frequently correlated not only with aspectual changes but also with semantic shifts and changes in grammatical function assignments.

Consider, for example, the verb *hatni* 'to exert an influence'. Its perfective derivative *meg hatni* has a related, but distinctly different meaning: 'to move, touch (emotionally)'. Moreover, *hatni* takes an oblique complement, for which it governs the sublative case. *Meg hatni*, on the other hand, takes a direct object complement, which appears in the accusative case by general rule. These differences between *hatni* and *meg hatni* are reflected not only in the syntax of these predicates, but also in their inflectional behavior: the transitive predicate *meg hatni* can host suffixes of the definite conjugation, which is used with definite objects, while the intransitive two-place predicate *hatni* cannot. Thus we have *meg hat-ja* 'he/she moves him/her (emotionally)', with the suffix *-ja* indicating a third person singular subject and a definite object, but not **hat-ja* 'he/she influences him/her'. We see, then, that grammatical function assignments as well as other types of L-information associated with the lexical entry of a verb may be affected by composition with a PV.

Overall, we find that many PV V compositions display all of the characteristic features of lexical formations: they differ from the verbs on which they are based in argument structure and other aspects of lexical meaning, in valence, in case-government properties, or in grammatical function assignments. In one sense, this conclusion is not particularly surprising. After all, it might be objected, it is hardly unusual to discover that some cases of a productive formation show signs of lexicalization. In itself, this fact can hardly be taken to establish that *all* exemplars of the formation are lexically formed.

It is by no means the case, however, that forms like *bele dobta* 'he/she threw it into it' in (7c) or *bele vakult* 'he/she became blind because of it' in (9b) represent isolated, idiosyncratic forms, despite the fact that the PV imposes selectional restrictions on the complement of the predicate in these cases and determines the case in which this complement may appear. More-over, will see in the following section that the PVs of Hungarian system-atically receive syntactic treatment as independednt words, *whether or not the particular PV V combination in question displays idiosyncrasies of form or meaning, or otherwise requires treatment as a listed expression.* Since both "lexicalized" and completely regular PV V combinations are alike in receiving analytic expression in syntax, there is nothing to be gained by supposing that compositons of the first kind are lexically formed or listed, while those of the second kind are syntactically derived.

Similar considerations militate against an analysis of the PV V compositions of Hungarian as idioms, and thus simply as lexically listed phrases of some kind. Some PV V compositions do indeed typically receive figurative interpretations. Thus *bele bolondult* in (9a) will ordinarily be interpreted as 'he/she flipped over him/her', although it might also be given a literal reading as 'he/she went crazy because of him/her'. Other PV V combinations have completely literal and compositional interpretations, however, which can in no way be viewed as idiomatic: compare again *bele vakult* 'he/she became blind because of it'. Moreover, there is once again no difference in syntactic behavior which distinguishes PV V combinations with a figurative interpretation from those which are interpreted literally. Furthermore, we will see in section 3.4 that PV V compositions regularly enter into morphological processes of derivation on a par with ordinary verbs and must accordingly be regarded as morphological objects, not as non-morphological objects which must for one reason or another be listed in the lexicon.

We conclude, then, that the overall treatment of phrasal predicates in Hungarian supports an analysis on which all PV V compositions, and not simply those with one or another idiosyncratic property, are lexcially derived. This conclusion in turn supports our contention that L-information, including information about a-structure, may be associated with lexical items irrespective of their synthetic or analytic mode of expression.

3.3 The syntactic independence of PV and V

In general a PV in Hungarian will appear immediately to the left of the categorial verb of a clause unless discourse or grammatical considerations mandate another order. Under appropriate conditions, however, the PV may appear in a variety of other positions. Table 2 provides a schematic present-ation of the relative positions permitted to PV and V within a clause.[16] A further complication raises a point of particular interest: a PV which is syn-tactically associated with one of a set "auxiliary" verbs may be construed with the verb of a complement clause, despite the fact that the PV and the verb of the complement jointly constitute a single lexical item on our ana-lysis. Constructions of this type involve what Farkas and Sadock (1989) have called *preverb climbing.*

Clausal Organization and Preverbs

direct order	(X) **PV V** …
discontinuous order	(X) **PV** Y **V** …
inverted order	X **V** (Y) **PV** …

Table 2

[16]The terminology employed in Table 2 and many of the examples given below to illustrate the various ordering possibilities are adapted from Simony 1902, Klemm 1928, 1940, 1942, and Soltész 1959.

Examples illustrating some of the constructions in which we find the direct order (without preverb climbing) are given in (10): (10a) represents the unmarked order for affirmative, declarative clauses; (10b) illustrates a negative construction in which predicates of different clauses are contrasted; (10c) exemplifies an emphatic imperative construction; and (10d) includes a subordinate clause introduced by the complementizer *nehogy* 'that… not, lest', which requires a subjunctive form of the verb.

(10) a. *A fiú* ***körbe*** ***járta*** *a házat.*
the boy around walked-3sg/DEF the house-ACC
'The boy walked around the house.'

b. *Nem* ***ki*** ***ment*** *belöle* ***benn*** ***szorult*** *a pára.*
not out went out.of -3sg inside confined the steam
'The steam didn't go out of it; it remained inside.'

c. ***El*** ***pusztulj*** *elölem.*
away ruin-IMP away-1sg
'Get away from me!'

d. *Az anyja vigyaz a gyerekére*
the mother watches the child-3sg-SUBL
nehogy ***el*** ***essen****.*
lest away fall-SUBJ
'The mother watches her child, lest it fall down.'

The examples in (11) illustrate the direct order in sentences with preverb climbing. Both (11a) and (11b) involve the phrasal predicate *be csukni* 'to close'. Yet in (11a) the PV *be* 'into' appears before the auxiliary verb *akar* 'want', while *csukni* appears as the head of a subordinated phrase. In (11b) the PV is positioned before the copula *van* in a predicative construction in which the subordinate verb appears as a gerundial form. In (11c) the PV *el* 'away' appears before the modal verb *kell* 'must' and is further separated from the finite, subjunctive verb form with which it constitutes a semantic unit by an explicit marker of subordination, the complementizer *hogy* 'that'. In each case, the PV which immediately precedes the auxiliary arguably forms a "single semantic word" with the verb of the subordinate structure.

(11) a. ***Be*** *akarom* ***csukni*** *az ajtót.*
into want-1sg/DEF close-INF the door-ACC
'I want to close the door.'

b. *Az ajtó* ***be*** *van* ***csukva***.
the door into is close-GER
'The door is closed.'

c. ***El*** *kell hogy* ***menjek***.
away must that go-1sg.SUBJ
'I have to go.'

The phenomenon of preverb climbing is just one of a number of complex and interesting problems posed by Hungarian constructions involving auxiliary verbs. In Ackerman 1984, 1987 the various combinations in which an auxiliary coocurs with another predicate are interpreted as analytically expressed lexical items with multiple heads. On the basis of object agreement facts and the distribution of morphosyntactic categories, it is argued that the auxiliary constitutes the *categorial head* of the composition, while the associated verb serves as the *functional head*. This proposal employs a distinction between types of heads which has been developed elsewhere in the LFG literature (for purposes other than the analysis of complex predicates), most notably in Simpson 1983.[17] (For an alternative analysis of preverb climbing within the framework of Autolexical Syntax, see Farkas and Sadock 1989.)

While PVs which have undergone clitic climbing are generally fixed in preverbal position, the PV V complex receives discontinuous expression in simplex clauses under a variety of conditions, as illustrated in (12). Several of the constructions shown here involve negation. In (12a), for example, strong denial is indicated by interposing a negative element between PV and V. The imperative construction in (12b), which is employed to convey the desirability of preventing a particular state of affairs, again involves an interposed negative particle, as does the subordinated structure in (12c), where *hogy… ne* 'that… not' is used in place of *nehogy* 'lest'. Example (12d) involves negation in the second of two adverbial clauses paired with *addig… amig…* 'while still (not), until'. In (12e), on the other hand, the PV V complex is interrupted not by a negative element but by the particle *is* 'also'.

(12) a. *Hogy honnan származott azt* ***el*** *nem*
that from.where originated that-ACC away not
felejti.
forget-3sg/DEF
'As to where he came from, that he won't forget.'

[17] A comparable distinction is employed in the analysis of analytic predicates both in the Australian descriptive tradition (e.g., Dixon 1976) and in Soviet work (e.g., Zhirmunskii and Sunik 1963). Several recent analyses of complex predicates have appealed to similar distinctions between types of heads. In the present volume, for example, notions of this kind are employed by Alsina, Baker, and Butt.

b. ***El*** *ne* ***késs***.
away not late-IMP
'Don't be late!'

c. *Az anyja vigyaz a gyerekére*
the mother watches the child-3sg-SUBL
hogy ***el*** *ne* ***essen***.
that away not fall-SUBJ
'The mother watches her child, lest it fall down.'

d. *Addig nem beszéltünk amig a pincér*
still not talked-1pl while the waiter
el *nem* ***ment***.
away not went
'We didn't talk until the waiter left.'

e. ***Meg*** *is* ***öntözném*** *azt a könnyeimmel.*
PERF also water-1sg-COND that-ACC the tears-1sg-INST
'I would also water that with my tears.'

Example (e) is particularly striking here, since it indicates that even the semantically "bleached" PV *meg* may participate in discontinuous PV V constructions.

The examples in (13) illustrate the remaining ordering possibility, the inverted order. Some constructions with this word order again involve negation, as in (13a), or the use of an adverb with negative connotations, as in (13b). The inverted order is also used in constructions in which a focused or questioned constituent appears in immediate preverbal position, as in (13c) and (13d).[18] With certain predicates, the inverted order may be employed to convey progressive aspect, as illustrated in (13e). (Recall that the use of a PV otherwise typically yields a perfective reading.)

(13) a. *A fiú nem* ***járta*** ***körbe*** *a házat.*
the boy not walked-3sg/DEF around the house-ACC
'The boy didn't walk around the house.'

b. *Rosszul* ***csinálta*** ***meg***.
badly did-3sg/DEF PERF
'He/she did it badly.'

[18]Kiss (1987) argues that the phrase structure of Hungarian includes a position immediately to the left of the verb which is occupied by a focused constituent when there is one and may be occupied by a PV instead when no constituent is focused.

c. *A fiú a házat* ***járta*** ***körbe***.
the boy the house-ACC walked-3sg/DEF around
'It was the house that the boy walked around.'

d. *Ki* ***járta*** ***körbe*** *a házat.*
who walked-3sg/DEF around the house-ACC
'Who walked around the house?'

e. ***Emelkedik föl*** *a hold.*
rising up the moon
'The moon is rising.'

In these examples, the postposed PV appears immediately after the verb. In general, however, it is possible for the PV to appear further to the right, with elements interposed between V and PV.

We close this section by presenting two additional ways in which the pieces of Hungarian complex predicates participate in phrasal syntax. We show (i) that a PV may be "stranded" in certain constructions through the deletion of the associated verb and (ii) that a PV may be used alone in response to yes/no questions.

Hungarian exhibits what might be called verb gapping: in a sequence of chained clauses, each of which contains a directional PV and a motional V, the repeated occurrences of V may undergo ellipsis. The effect of this process is illustrated in (14).

(14) a. *Azután nyugodt léptekkel* ***ki sétáltam*** *a folyosóra*
then calm steps-INST out walked-1sg the hall-SUBL
'Then I walked calmly out into the hall…

b. ***el*** *Ø a hátsó lépcsöhöz*
away the back stair-ALL
over to the back stairs…

c. ***föl*** *Ø a hatodik emeletre*
up the sixth floor-SUBL
up to the sixth floor…

d. ***be*** *Ø a fogadó terembe*
into the receiving room-IN
into the reception room…

e. ***át*** *Ø a be-csukott franciaajtón.*
across the into-closed French.door-SUP
through the closed French door.'

In (14b-e) the verb *sétáltam* 'I walked' has been deleted. What remains in each clause is the PV and the oblique complement of a PV V composi-tion, the complement appearing in the case governed by the complex pre-dicate. Note that this Hungarian construction, unlike that of the English gloss, cannot be analyzed as involving coordinated prepositional phrases, since Hungarian has only postpositions.

A standard way of responding affirmatively to a yes/no questions in Hungarian is to repeat the predicate: with simple verbs this entails repeating the categorial verb, while the convention is to repeat only the PV of a PV V composition, as indicated in (15). The PV then stands for the phrasal predicate as a whole.

(15) a. ***Át*** ***dolgoztad*** *azt* *a* *fejezetet?*
across worked-2sing/DEF that-ACC the chapter-ACC
'Did you rework that chapter?'

b. ***Át*** Ø.
across
'I did'

Unlike verb gapping, which is subject to semantic constraints on the nature of participating predicates, the convention for responding to yes/no questions with a PV is applicable to all PV V compositions.

The data presented in this section show that PVs and Vs in Hungarian are treated as independent syntactic words: the pieces of a phrasal predicate may be positioned separately in syntactic structures, while operations of phrasal syntax have access to the individual components. Thus the PV V complexes of Hungarian consistently fail to display lexical integrity. On the Two Source account of the derivation of complex predicates, we are forced to conclude that the phrasal predicates of Hungarian are not formed in the lexicon, against the evidence for the lexical status of these compositions that was reviewed in the preceding section. We turn next to evidence that the PV V complexes of Hungarian are morphological objects, raising a further problem for the Two Source model.

3.4 Phrasal predicates are morphological objects

Despite the fact that the components of PV V compositions are clearly treated as separate words in syntax, several lines of evidence indicate that the PV V complex as a whole has a morphological status.

As shown in (16) and (17) below, derived nouns and adjectives may be based either on predicates consisting of a verb alone, or on phrasal predicates. The (b) examples illustrate nominalizations formed with the suffix *-ás*, while the examples in (c) and (d) show adjectives derived with *-ható* 'able' and *-hatatlan* 'unable', respectively. The form in (17e) is an adjective derived with the suffix *-andó*, which conveys a sense of modality.

(16) a. ***old**-ani*
'to dissolve'

b. ***old**-ás*
'(chemical) solution'

c. ***old**-ható anyag*
'dissolvable substance'

d. ***old**-hatatlan anyag*
'insoluble substance'

(17) a. ***meg old**-ani*
'to solve'

b. ***meg-old**-ás*
'solution'

c. ***meg old**-ható feladat*
'solvable task'

d. ***meg-old**-hatatlan feladat*
'unsolvable task'

e. ***meg-old**-andó feladat*
'a task needing solution'

Since PVs do not otherwise occur as modifiers of nouns or adjectives, the forms in (17b-e) can only have been derived from the complex predicate in (17a); they cannot have been formed by combining *meg* with forms like those in (16b-d). Note also that the meaning of each of the deverbal forms corresponds to the meaning of the base, whether simple or phrasal. Thus examples like these demonstrate clearly that phrasal predicates may serve as bases for category-changing operations. On standard assumptions, these operations must reflect the application of lexical rules.

Not surprisingly, some derivational processes are sensitive to the transitivity of the base. With only a few exceptions, the suffix *-ható* 'able' is added exclusively to transitive verb stems. Now we noted in 3.2 above that the addition of a PV may alter the transitivity of a verb. There we contrasted the intransitive two-place predicate *hatni* 'to influence' with the transitive two-place predicate *meg hatni* 'to touch, move (emotionally)'. In accordance with the transitivity condition on the suffixation of *-ható*, it is possible to form the adjective *meg hatható* 'touching, moving (emotionally)', but not the adjective **hatható* 'influenceable'. In other words, the derivation of a predicate via the combination of a PV and a V may establish the input conditions for a morphological operation.

Furthermore, the *output* of a category-changing derivational process may itself be a phrasal predicate: the PV component of a phrasal predicate remains separable (under appropriate conditions) in adjectives derived by suffixing *-ható*. This effect may be observed when the adjective is used predicatively in a clause in the present tense, since under these circumstances the copula does not appear. An example of this type is given in (18a). Here a focused element (given in capital letters) is positioned immediately before the predicate adjective, and the PV is postposed *from within the base from which this adjective was derived.*

(18) *EZ A FELADAT* ***old-****ható* ***meg***.
this the task solve-able PERF
'It's this task that's solvable.'

The continued syntactic independence of PVs in adjectives formed with *-ható* is a special property of this formation, however, and not a general property of adjectives derived from phrasal predicates. Adjectives derived with *-hatatlan* 'unable' contrast in this respect with adjectives derived with *-ható*. As shown in (19), a PV within the base of an adjective in *-hatatlan* is inseparable. Moreover, PVs are inseparable in comparative forms of adjectives in *-ható*, which are derived by adding the suffix *-bb*.[19]

(19) a. *EZ A FELADAT* ***meg-old****-hatatlan.*
this the task PERF-solve-not.able
'It's this task that's unsolvable.'

b. **EZ A FELADAT* ***old****-hatatlan* ***meg***.
this the task solve-not.able PERF
'It's this task that's unsolvable.'

(20) a. *EZ A FELADAT* ***meg-old****-ható-bb.*
this the task PERF-solve-able-COMP
'It's this task that's more solvable.'

b. **EZ A FELADAT* ***old****-ható-bb* ***meg***.
this the task solve-able-COMP PERF
'It's this task that's more solvable.'

Overall, then, we are led to the following conclusions. Phrasal predicates may be inputs to category-changing processes, which are presumably to be stated as lexical rules. Moreover, category-changing operations may derive analytically expressed lexical items. Whether a particular derivational process yields analytic or synthetic forms must be stated, however, as part of the lexical rule in question.

---

[19]As observed by Majtinskaja (1959), derivatives with *-ható* generally retain more verbal properties than those, for example, with *-hatatlan*. She notes in particular that derivatives with *-ható* may govern complements in left-branching complex NPs, while derivatives with *-hatatlan*, with few exceptions, may not. In the following example, an adjective derived with *-ható* functions attributively and governs a pronominal form in the ablative case: *töle vár-ható lelkiismeretességgel* (3sg-ABL expect-able scrupulousness-INST 'with scrupulousness expectable from him/her' (Majtinskaja 1959:73). Despite these differences in verbal properties, the point remains that derivatives in *-ható* are adjectives, as demonstrated, for example, by the fact that they form comparatives.

Further evidence bearing on these issues is provided by a process by which PVs are reduplicated.[20] The use of a reduplicated PV conveys a sense of repeated and completed action. Thus reduplication of *neki* 'toward' in *neki rohant* 'rushed at' in (21a) yields the reading 'rushed at again and again'. (For the unreduplicated form, see example (8) above.) Note, however, that the sense of repetition is imputed to the action denoted by the phrasal predicate as a whole. Thus reduplication is appropriately stated as an operation on phrasal predicates. In the output of reduplication, however, the PV is inseparable: negation with *nem* ordinarily requires the postposing of a PV, but *neki-neki* remains in preverbal position in (21b), while postposing this reduplicated form as in (21c) results in an ungrammatical structure. Here again, then, we find that a morphological process takes a phrasal predicate as its input and determines the separability of the components of this predicate in its output.

(21) a. *A tigris* ***neki-neki-rohant*** *a ketrec rácsának.*
the tiger toward-toward-rushed the cage bar-3sg-DAT
'The tiger kept rushing at the bars of the cage.'

b. *A tigris nem* ***neki-neki-rohant*** *a ketrec rácsának.*
the tiger not toward-toward-rushed the cage bar-3sg-DAT
'The tiger did not keep rushing at the bars of the cage.'

c. **A tigris nem* ***rohant neki-neki*** *a ketrec*
the tiger not rushed toward-toward the cage
rácsának.
bar-3sg-DAT
'The tiger did not keep rushing at the bars of the cage.'

As we noted briefly above, some of the prefixal PVs of Hungarian occur in inflected forms. The inflectional endings used with PVs of this class are identical with the suffixes used with nouns to index grammatical features of a possessor. In (22), for example, *bele* 'into' is inflected like a noun with a third person singular possessor.

(22) *A fiú* ***belé-je*** *kötött.*
the boy into-3sg bound
'The boy picked a quarrel with him/her.'

The complex predicate in this example has an idiosyncratic, noncompositional meaning: the combination of *bele* 'into' with *köt* 'bind' is interpreted as 'quarrel with'. Standard arguments concerning the lexical

[20]For a discussion and analysis of reduplicated PVs (and other types of multiple PVs), see Piñón 1991.

status of idiosyncratic expressions therefore lead us to conclude that the combination *bele köt* is listed as such in the lexicon. Consider further that the third person possessive suffix *-je* in (22) indexes one of the arguments of the complex predicate as a whole, namely the person with whom the subject quarrels. Thus the Strong Lexicalist Hypothesis, which requires inflectional rules as well as rules of derivational morphology to be stated in the lexicon, would direct us to analyze the entire expression *beléje kötött* as a lexical formation. Note, however, that the decision to represent inflected forms of PVs in lexical entries raises the possibility that complex predicates which include such inflected forms might serve as bases for rules of derivational morphology, yielding cases of "inflection inside derivation".

In fact this is exactly what we find. When an inflected PV is reduplicated, the possessive marker which is suffixed to the PV is included in the reduplicated material:

(23) *A tigris* ***nek-em-nek-em****-rohant.*
the tiger toward-1sg-toward-1sg-rushed
'The tiger kept rushing at me.'

Reduplicated forms of inflected PVs, like reduplicated PVs in general, are inseparable, confirming that the entire PV V complex forms the base for the process of reduplication: the inseparability of the resulting PV is a property of the morphological formation in question.

Inflected forms of prefixal PVs display another interesting property as well: they do not cooccur with nominal expressions which overtly express the argument indexed by the inflectional ending of the PV. When an overt nominal appears, the PV occurs in its uninflected form. Thus (24a) is grammatical, but (24b) is not. Moreover, an argument which may be expressed by the inflectional ending of a PV may not be expressed by an independent pronominal form: (24c) is not a possible paraphrase of (22).

(24) a. *A fiú* ***bele*** *kötött a* ***szomszéd-já-ba****.*
the boy into bound the neighbor-3sg-ILL
'The boy picked a quarrel with his neighbor.'

b. **A fiú* ***belé-je*** *kötött a* ***szomszéd-já-ba****.*
the boy into-3sg bound the neighbor-3sg-ILL
'The boy picked a quarrel with his neighbor.'

c. **A fiú* ***bele*** *kötött* ***bel-éje****.*
the boy into bound him/her-ILL
'The boy picked a quarrel with him/her.'

The complementary distribution exhibited by an oblique lexical NP and a possessive marker on the PV in examples like (24a-b) suggests that either

type of expression can serve to satisfy the oblique complement requirement of the phrasal predicate (Ackerman 1990). Let us suppose, then, that (24b) is prohibited because it contains two oblique complements competing to satisfy a requirement of the predicate which must be satisfied uniquely. In LFG terms (and by comparable conditions in other frameworks), (24b) is ungrammatical because it violates the principle of Functional Uniqueness: the function requirements of a predicate can be satisfied only by a single token of a complement bearing a function selected by the predicate.

This account still does not explain why (24c) is impossible: why can a pronominal oblique argument be expressed only by an inflectional suffix on the PV? Here an analysis in terms of blocking seems promising.

On the analogy of the well known phenomenon of blocking in word formation, Andrews (1990) has suggested that the availability of a morphological expression which satisfies certain function requirements of a predicate may block the use of a functionally equivalent syntactic expression. In this case, we might suppose that the availability of the morphologically derived form *beléje kötött* 'quarrels with him/her' would block the use of the functionally equivalent, but syntactically derived expression *bele kötött beléje*.

Although alternative analyses for the observed patterns are certainly possible, it is worth noting that attributing the ungrammaticality of expressions like (24c) to morphological blocking would provide another reason for analyzing phrasal predicates as morphological objects. After all, it is phra-sal predicates hosting inflectional morphology which serve as morphological blockers on this account.

While we have concentrated here on demonstrating that a phrasal predicate as a whole has a morphological status, we should also point out that morphological rules must be allowed to have access to the components of phrasal predicates as well. This is clear in the case of the PV, of course, from the fact the PVs may occur in inflected forms and may undergo reduplication. The same point may be made with respect to the verb stem by considering the rule which determines the form of the causative suffix.

The causative suffix has two variants: *-at* is suffixed to monosyllabic stems, as in (25a), while *-tat* is suffixed to disyllabic and longer stems, as in (25b). In causative forms which correspond to phrasal predicates, however, only the shape of the verb stem itself is relevant to the selection of an allomorph, as we see in (25c). Here *-at*, rather than *-tat*, is suffixed to the verb in the combination *fel ir* 'prescribe', literally 'write up'.

(25)	a.	*ir* 'write'	*ir-**at*** 'make write'
	b.	*olvas* 'read'	*olvas-**tat*** 'make read'
	c.	*fel ir* 'prescribe'	*fel ir-**at*** 'make prescribe'

Note, however, that the meaning of the causative form in (25c) corresponds to the meaning of the "semantic word" defined by the PV and the V together. Here again, then, we have a reason to suppose that a phrasal predicate as a whole may serve as the base for a morphological process.[21]

In sum, we find that morphological rules may refer to either component of a PV V composition, or to both together. This is exactly what we expect if these phrasal predicates are represented as such in the lexicon and are thus accessible to rules of derivational morphology.

3.5 Coordination

Granting lexical representations to phrasal predicates provides a way to account for the fact that the PV V compositions of Hungarian may participate in processes of word-formation. The fact that the pieces of phrasal predicates may appear in coordinate structures presents a challenge to this proposal, however, since coordination is often assumed to be exclusively a syntactic process. For Alsina (this volume), for example, the fact that coordinate structures occur in the periphrastic causatives of Catalan but not in the synthethic causatives of Chichewa provides evidence that structures of the former type are syntactically derived.

In Hungarian as well, pieces of a phrasal predicate may occur in coordinate structures. In particular, Hungarian permits at least some use of coordinated PVs, provided that the PV V structure as a whole has a coherent interpretation.[22] The expression illustrated in (26) is based on the more or less semantically compositional phrasal predicate *fel nevelni* 'to raise' and the idiomatic phrasal predicate *el nevelni* 'to spoil'.

(26) *a gyermekeinket* ***fel*** *és* ***el*** *nevelni*
the children-1pl-ACC up and away grow-INF
'to raise and spoil our children'

Since PVs construed with an infinitival form of a verb are typically syntactically separable (in preverb climbing constructions, for example), examples like (26) have a straightforward analysis on a syntactic account of PV V composition. PVs contained in nominalizations in *-ás*, on the other hand, are inseparable components of a complex word, as we observed in the preceding section. Yet here, too, coordinate PVs are permitted:

---

[21]More precisely, we see that the *form* of *fel irat* 'make prescribe' corresponds to the form of the causative of the simple verb *ir* 'write', while the *meaning* of *fel irat* corresponds to the meaning of the PV V composition *fel ir* 'prescribe'. Bochner (1992) has argued that multilateral relationships of this kind should be analyzed in terms of networks of lexical rules, raher than simply by deriving one expression from another. The point remains, however, that the phrasal predicate *fel ir* must be available to the lexical rules which determine the properties of the corresponding causative form.

[22]How generally coordination of preverbs is permitted, and the precise character of the constraints on such coordinate structures, remains to be fully investigated.

(27) ***ki**-és-**be**-rohangal-ás*
out-and-in-run-NOM
'running in and out'

For cases of this type, assuming that all coordinate structures are syntactically derived would entail permitting a syntactically formed expression to serve as the base for a word-formation rule, an undesirable result on lexicalist assumptions.

An alternative to this approach, of course, would be to permit some coordinate structures to be lexically formed. It will apparently be necessary in any case to permit some lexical derivation of such structures, since coordinated nouns may appear as compound members in Hungarian (as, indeed, in English):

(28) ***gáz**-és-**víz**-vezeték-szerelö*
gas-and-water-main-repairer
'gas and water main repair person'

In fact examples like (28) demonstrate that the possibility of conjoining PVs is just one more respect in which PV V compositions resemble compounds in Hungarian.

Since examples like (26)-(28) involve only coordination of zero-level categories, they present no special problem for the theory of lexical representations. There is no reason in principle why coordinated zero-level categories cannot be represented as such in the lexicon, since the coordinate structures themselves will belong to zero-level categories. Thus the base of the nominaliztion in (27) may be assumed to include a lexically represented coordinate structure.

In general, however, we expect to find that argument-taking expressions which form parts of phrasal predicates such as periphrastic causatives may occur as the heads of coordinated phrasal categories. Coordinate structures of this kind cannot be directly formed in the lexicon without permitting the lexical representation of phrasal categories, something we have sought to avoid.

This problem arises, however, only if we regard lexical items as "chunks" of material to be inserted under some node in phrase structure. The view of lexical entries that we have advocated here presupposes an alternative understanding of lexical insertion, one in which lexical entries essentially constitute rules which *sanction the occurrence* of lexical material in syntactic sturctures. On this view of lexical insertion, we are free to say that individual pieces of a complex predicate may occur in a coordinate structure provided that each occurrence of such an element is sanctioned by a lexical rule through the coocurrence of some element or elements in the structure containing the conjunction. As in other cases of "across-the-board" phenomena, we expect that permissible conjunction

structures must conform to conditions of parallelism, in part reflecting requirements of semantic coherence.

On this view of the nature of lexical entries, the fact that Catalan permits conjoined structures in causatives follows from the fact that the lexical entries for these predicates specify analytic expressions and may therefore sanction discontinuous material. The fact that the synthetically expressed causatives of Chichewa may not be formed from conjoined expressions remains unsurprising, since conjoined structures do not typically occur within single non-compound words. Thus our proposed account of the nature of lexical represenations is compatible with Alsina's observations concerning conjunction.

3.6 Summary of results

We have argued above that the PV V compositions of Hungarian are analytic expressions which must be represented as such in the lexicon, since they display all of the usual properties of words, apart from the fact that they violate our expectations concerning lexical integrity. Morover, we have seen that PV V complexes may serve as bases for nominalization, adjective formation, and verb formation via reduplication. Whether a PV remains separable in the output of a morphoplogical process depends on the formation in question. PVs remain separable in derived adjectives formed with *-ható* 'able', but not in other types of derived adjectives or in nominalizations. Reduplication yields inseparable PVs, even though the ouput of this process is verbal. Thus it is clear that the phrasal predicates of Hungarian are morphological objects: they participate like words in morphological operations and their structure is determined by morphological principles. What morphological principles do not determine about a PV V composition is the syntactic distribution of its parts. This is determined by constraints on phrase structure and other principles of syntax.

These conclusions present a fundamental problem for the Two Source theory of complex predicate formation that we outlined in section 2. On that account, lexical derivation is assumed to be limited to objects which display lexical integrity. Since phrasal predicates must therefore be composed in the syntax, their ability to participate in processes of derivational morphology is mysterious. But if phrasal predicates may be formed in the lexicon, then we cannot use the behavior of a predicate with respect to lexical integrity as a criterion for determining whether the predicate is lexically or syntactically formed.

We have already noted (in section 3.2) that the PV V compositions of Hungarian cannot simply be treated as idioms, and thus as some type of listed phrase. First of all, PV V complexes have a morphological status comparable in many respects to that of simple verbs, while idioms are not morphological objects. Moreover, while some PV V compositions reflect unproductive patterns of formation or have non-compositional meanings, many others are regularly formed and have no idiosyncratic properties, so that there is no reason to suppose that they are listed expressions.

It is of course logically possible that the PV V combinations of Hungarian might themselves have two sources, such that just those occurrences of PV V which manifest phrasal behavior would be syntactically composed, while those occurrences which are involved in morphological operations would be lexically derived. Yet PV V combinations of all types manifest phrasal properties under appropriate conditions, irrespective of the compositionality of their meanings or the regularity of the patterns of formation which they reflect. Thus this approach would not only entail importing the determination of such lexical information as non-compositional meaning into syntax, but would also require the duplication of dozens of minor predicate formation operations in both the lexical and the syntactic component of the grammar of Hungarian. Moreover, in the case of adjectives derived with *-ható* 'able', we find that a PV V composition may manifest phrasal behavior even where it occurs as part of a morphologically derived form. Here, then, one and the same occurrence of a PV V complex would have to be accorded both a syntactic and a lexical derivation.

It seems to us, then, that there is no viable alternative to the analysis of the PV V compositions of Hungarian as lexically formed analytic expressions which at the same time is compatible with the overall program of lexicalist theories of syntax. We consider the implications of this conclusion in more detail in the following section.

4. The typology of complex predicates

In the preceding section, we observed that phrasal PV V compositions in Hungarian are associated with the same types of information as comparable predicates in languages like Serbo-Croatian in which PVs are prefixes. We noted in particular that the additon of a PV may result in changes in the lexical semantics, valence, case-government pattern, and grammatical function assignments of a verb, indicating that the PV V complex as a whole is associated with L-information. We also noted that these phrasal predicates have a morphological status, since they participate in processes of derivational morphology and there are morphological conditions on the separability of PVs.

These results require us to augment the typology of modes of expression posited previously on the basis of Chichewa and Catalan. Overall, we have identified three ways in which compex predicates may be expressed:

(29) *Expression types of complex predicates*

i. Synthetic expressions, which display lexical integrity.

ii. Analytic expressions which exhibit no morphological behavior.

iii. Analtytic expressions which are also morphological objects.

Expressions of all three types are associated with comparable ensembles of information. Thus the association of a predicate with L-information (including a-structure) is orthogonal both to its status as a synthetic or analytic

expression and to its status with respect to participation in morphological processes.

This diversity of expression types raises three general questions. How is L-information associated with expressions of different types? What do entities that participate in morphological operations share? What do entities whose parts participate in syntactic operations share?

On the Two Source account of complex predicate formation developed by Alsina, synthetic expressions are lexically derived while analytic expressions are syntactically formed. For Alsina, L-information is associated with a complex predicate in different ways according to the domain within which it is derived: he postulates both lexical and syntactic mechanisms by which a-structures may be determined. Since processes of derivational morphology are restricted to the lexicon, only objects which display lexical integrity are predicted to have morphological status. Syntactically formed expressions will not display lexical integrity, but are also predicted to exhibit no morphological behavior.

The three-member typology identified above requires different answers to our fundamental questions, since the behavior of analytic predicates like the PV V compositions of Hungarian resembles that of synthetic expressions in some respects and that of clearly syntactically derived expressions in others. As we have seen in detail in the preceding section, the status of a predicate with respect to lexical integrity does not correlate reliably with the type of operation in which it may participate.

On the Single Source account, both synthetic and analytic predicates are formed in the lexicon. Since complex predicates may be accorded lexical representations regardless of their mode of expression, synthetic and analytic predicates may be associated with L-information in a uniform manner. In other words, the single source of complex predicates is lexical rules: composition and alteration of L-information in syntax are precluded.

What those predicates which participate in morphological operations have in common is their lexical status. Note, however, that the lexical representation of analytic expressions does not in and of itself entail the existence of morphological rules in a particular language which are applicable to such expressions. Thus phrasal predicates may or may not exhibit morphological behavior.

Lexical integrity does not hold of lexical items as such, but rather is a property of the zero-level categories specified in lexical representations. Analytically expressed lexical items and syntactically derived expressions are alike insofar as both consist of more than one zero-level category.

The Single Source theory of predicate formation abandons the Hypothesis of Morphological Lexicalism in that it (i) denies that the principle of lexical integrity holds of lexical items as such and (ii) permits morphological rules to apply to lexically formed analytic expressions as well as to individual words. What this approach retains from standard lexicalism, however, is a frequently defended distinction between lexical and syntactic rules: while lexical rules have the power to alter the argument structures of

words (and other aspects of lexical meaning), syntactic rules do not. The Single Source account also retains a central role for a principle of lexical integrity: syntactic rules neither analyze nor alter the internal structure of zero-level categories (with the usual provisos about the status of inflectional morphology).

On the Single Source account, the complex predicates of the various langauges that we have considered in this paper may be classified as shown in Table 3. The region in the table which is enclosed by a double border provides a schematic summary of the information contained in lexical representations. Items in boldface indicate properties which the analytic predicates of Hungarian share with synthetic expressions in Chichewa and Serbo-Croatian on the one hand, and with the analytic causatives of Catalan on the other.[23]

	Chichewa Serbo-Croatian	Hungarian	Catalan
Lexical Information	sem-structure a-structure gf-structure	sem-structure a-structure gf-structure	sem-structuure a-structure gf-structure
Morphological Form	**synthetic morphological object:** **[X Y]$_{V}$**	**analytic morphological object:** **[X]$_{Prt}$, [Y]$_{V}$**	non-morphological object: [X]$_{V}$, [Y]$_{V}$
Syntactic Expression	single syntactic atom: [X Y]$_{V}$	**two syntactic atoms:** **[X]$_{Prt}$, [Y]$_{V}$**	**two syntactic atoms:** **[X]$_{V}$, [Y]$_{V}$**

Table 3

Both synthetically and analytically expressed predicates are represented as such in the lexicon. Only expressions with one or another idiosyncratic property will necessarily be listed, of course; completely regular forms may be derived as needed. The lexical entry for each predicate specifies what we have called L-information, including information about the semantic struc-ture of the predicate, its argument structure, and the grammatical functions assigned to its arguments. In particular, the argument structure of causa-tives is determined by lexical rules in both Chichewa and Catalan.

[23]We have designated the PVs of Hungarian as particles (Prt) in this table simply to indicate that they are non-projecting heads in phrase structure. As we noted in section 3.1 above, the PVs of Hungarian are categorially diverse.

The lexical representation of each predicate also specifies its morphological form. Thus the causatives of Chichewa and the PV-V compositions of Serbo-Croation will have lexical entries which specify that these predicates are expressed by single zero-level categories. The PV V complexes of Hungarian and the causatives of Catalan, on the other hand, will have entries which specify pairs of zero-level categories: these predicates are phrasal.

The analytic predicates of Hungarian, like the synthetic predicates of Chichewa and Serbo-Croatian, fall within the domain of rules of derivational morphology. Thus the PV V combinations of Hungarian have the status of morphological objects. Following Alsina (this volume), we assume that the causatives of Catalan display no morphological behavior as units. From the point of view of the Single Source theory of predicate formation, this property of Catalan causatives simply reflects the absence in Catalan of morphological rules which are defined over the appropriate type of analytic expressions.[24]

The syntactic realization of a predicate is determined by the expression type specified in its lexical entry, together with the principles which map lexical representations into syntactic structures. We have suggested above that lexical entries are appropriately construed as rules which sanction the occurrence (or cooccurrence) of lexical material in syntactic structures. We have also proposed that the relative positions in phrase structure of the pieces of analytic predicates are determined in part by their status as heads or non-heads of the corresponding lexical items. Since the verb is the head of a PV V composition in Hungarian, the PV must occur within the projection of the verb (except, of course, where preverb climbing is involved). In the case of an analytic causative in Catalan, the causative verb is the head of the composition, so the projection of the complement verb is contained within the projection of the causative verb.

If a theory of this kind can be maintained, then it may be unnecessary to stipulate in lexical entries either the order or the constituent structure relations (apart from head status) of the zero-level categories which jointly serve as the expression of an analytic predicate. Thus we have indicated in Table 3 that the lexical entries for the phrasal predicates of Hungarian and Catalan simply include a list of zero-level categories.

For Catalan, Alsina (this volume) has proposed an explicit account of the principles which determine the syntactic expression of the arguments of a causative predicate, adapting the mapping theory of LFG to permit the determination of grammatical function assignments on the basis of syntactically derived argument structures. We see no reason in principle why a parallel account cannot be given within the Single Source theory of predicate formation. The only substantive difference involved is the domain

[24]We should point out, however, that if pronominal clitics in Catalan are appropriately analyzed as affixes, as has often been suggested for French and Spanish, then phenomena involving clitic climbing might in fact require an analysis of Catalan causatives as morphological objects. This is clearly an area that merits further investigation.

within which the relevant argument structures are composed. The Single Source model postulates that the argument structure of an analytic predicate is composed in the lexicon by the operation which assembles the zero-level cateogories in terms of which the predicate is expressed. Given a lexical representation of the argument structure of the causative predicate as a whole, we are free to assume that the assignment of gramatical functions to the arguments of the predicate proceeds essentially as Alsina has proposed.

For Hungarian, of course, we have done no more than to present the outline of a possible theory of the syntactic expression of phrasal predicates. Nevertheless, it seems clear that the position within the clause that a PV occupies in any given construction is determined by general syntactic principles.

Consider, finally, the possible implications of the Single Source theory of predicate formation for an understanding of the process of grammaticalization. The example of Hungarian indicates that a system of analytic predicates may be robust and stable, despite fluctuation in the status of individual items. As we observed in section 2, however, there is nonetheless a clear tendency across languages toward eliminating phrasal predicates by reanalyzing them as synthetic expressions. How and why, then, would phrasal predicates initially be introduced into a language?

Weir (1986) suggests that the initial change that led to the development of PVs in Nadëb was phonological: a postposition came to be phonologically dependent on a following verb and was then reanalyzed as a constituent with it. But why should cliticization have taken place, or led to an adjustment in phrase structure, just here, where it would ultimately be possible to reanalyze the sequence of a postposition and a verb as a synthetic predicate?

The Single Source theory suggests a different starting point for the process of grammaticalization. Ordinary compositional interpretation will sometimes yield a semantic representation for a complex syntactic structure which is essentailly equivalent to the result of composing the interpretation of a single possible predicate with the interpretations of its arguments. Thus, for example, the interpretation of a verb together with a subcategorized postpositional phrase may be essentially equivalent to the interpretation which would result from composing some possible predicate with the object of the posposition, construed as a direct argument of the predicate. In a case of this type, the verb and the postposition may be reinterpreted as a single analytic predicate with a unified argument structure. On the Single Source account of predicate formation, this step requires the establishment of a lexical representation for the analytic predicate. Thus the initial stage in grammaticalization is lexicalization.

This sort of reinterpretaion would perhaps be most likely in cases in which the cooccurence of a verb and a complement expression has become conventional or idiomatic, leading to the lexical listing of phrasal expressions. The establishment of a coherent set of analytic lexical items would be expected, however, to lead to the introduction of a lexical rule stating the properties which typical exemplars of the class have in common. Once

such a lexical rule is established, it may be used to generate regular expressions which need not be listed as such.

On the account of the syntactic realization of analytic predicates that we have sketched above, grammaticalization need not lead at first to changes in clause structure, since the projections determined by the pieces of a newly established analytic predicate may be the same as those which occurred in syntactic structures prior to reanalysis. The lexical entries of analytic pre-dicates are nonetheless subject to changes which typically follow a path whose course is dictated by considerations of markedness. In particular, it appears that non-head items within a lexical representation are frequently reanalyzed as particles, that is, as non-projecting heads in syntax.

In the case of an analytic predicate consisting of a postposition and a verb, this type of reanalysis may lead to the reinterpretation of the postposition as a PV, with the former object of the postposition now interpreted as a complement of the predicate as a whole. Thus the restructuring of a lexical representation may lead to changes in clause structure. These syntactic changes may be expected in turn to result in changes in prosodic structure, setting the stage for phonological developments such as cliticization. Cliticization may then contribute to the reanalysis of syntactically independent PVs as affixes, as Weir (1986) has documented for Nadëb, resulting in a simplification of lexical entries. Again we may expect the process to begin with the reinterpretation of a few items, leading to the establishment of new derivational patterns and ultimately to the elimination of whole classes of analytic predicates.

On this account, then, at least one motivation for the initial introduction of phrasal predicates is semantic. Coocurring lexical items may be reinterpreted as jointly expressing a single argument structure. Since argument structure is lexically determined, cooccurring items which express a single argument structure must be represented together in a single lexical entry. Rather than providing the motivation for grammaticalization, phonological change may sometimes be a consequence of the reorganization of lexical entries which were initially introduced through the lexicalization of phrasal expressions.

5. Conclusion

The existence of analytic predicates like the causatives of Catalan or the PV V complexes of Hungarian presents a fundamental challenge to central assumptions of lexicalist syntactic theories. If only lexical rules may alter or determine "lexical information" and only objects which obey the princi-ple of lexical integrity may be lexical items, then how are we to analyze phrasal predicates which otherwise display properties ordinarily taken to be diagnostic of lexical status?

We have considered two approaches to the resolution of this "analytic paradox", which we have called the Two Source and Single Source theories of complex predicate formation. The Two Source account, following Alsina (this volume), abandons the standard lexicalist assumption that only

lexical rules may determine the argument structures of predicates, permitting argument structures to be composed on the basis of syntactically derived representations. The Single Source account maintains the assumptions of standard lexicalism in this respect, but adopts a weakened version of the principle of lexical integrity, permitting lexical entries to specify the properties of analytic expressions.

The Two Source account of predicate formation is based on the proposition that complex predicates may be classified into two types: synthetic expressions which participate in processes of derivational morphology and analytic expressions which do not. The facts of Hungarian show that this two-way classification of expression types is inadequate: the PV V compositions of Hungarian are clearly analytic expressions, but nonetheless participate on a par with simple verbs in a variety of morphological processes, including category-changing operations.

The Hungarian data suggest (i) that the lexical integrity is a property of zero-level syntactic categories, not a property of lexical items as such and (ii) that lexical entries may specify unified argument structures for analytic expressions. If these conclusions are warranted, however, then the rationale for the Two Source approach is fundamentally undermined and the analysis of complex predicates does not require abandoning the lexicalist position that argument structures are determined only by lexical rules.

Of course, the notion that expressions reflecting the application of lexical rules need not respect lexical integrity is by no means novel. Dowty (1979:302), for example, in his work in Montague grammar, has proposed that rules for verb-particle combinations and resultative constructions are permitted to form "lexical units of more than one word". Sugioka 1986, Bierwisch 1990, Booij 1990, and Hoeksema 1991 have presented proposals from a variety of theoretical orientations which involve postulating multiword lexical items. Our primary objective here, however, has been to explore ways in which minimal changes in basic lexicalist assumptions might permit an explanatory account of the nature of phrasal predicates.

In many respects, our particular proposals are in keeping with traditional ideas in Ugric linguistics. Rombandeeva (1973:180), for example, remarks that the separable PVs of Vogul "…evince a transitional function between word-formative affixes and components of compound words". Soltész (1959:8) notes, however, that "[i]f certain prefixed verbs occupy a place between a compound word and a derived word, then from another perspective we must locate prefixed verbs along the border between syntagmata and compounds".

In effect, we have argued that grammatical theory should provide a formal reconstruction of the pretheoretical observation that complex predicates may display apparent discrepencies in their lexical status, their morphological status, and their syntax. We believe that the Single Source approach to the analysis of predicate formation provides a promising foundation for this task. We have also suggested that analyses along these lines may provide insight into the nature of the process of grammaticalization.

We have attempted to formulate the Two Source and Single Source theories so that the consequences of their central assumptions become apparent. Thus we have tried to see past the details of the possible implementations of these accounts in order to identify their leading ideas. In this sense, our efforts have been programmatic. It is our hope, however, that setting out a program may prove to be a worthwhile endeavor in the context of a forum devoted to the exploration of theoretical approaches to predicate formation.

References

Ackerman, Farrell. 1984. Verbal Modifiers as Argument Taking Predicates: Complex Predicates as Predicate Complexes. *Groningen Arbeiten für Germanistischen Linguistik*, No. 25, 23-71.

Ackerman, Farrell. 1987. Miscreant Morphemes: Phrasal Predicates in Ugric. Doctoral dissertation, University of California, Berkeley.

Ackerman, Farrell. 1990. The Morphological Blocking Principle and Oblique Pronominal Incorporation in Hungarian. In Katarzyna Dziwirek, Patrick Farrell, and Errapel Mejías-Bikandi, eds., *Grammatical Relations: A Cross-Theoretical Perspective,* 1-19. Stanford, Calif.: CSLI Publications.

Ackerman, Farrell, and Philip LeSourd. 1993. Phrasal Predicates in Hungarian and Fox. Ms., University of California, San Diego.

Ackerman, Farrell and Gert Webelhuth. To appear. *A Theory of Predicates.* Stanford, CA.: CSLI Publications.

Anderson, Stephen. 1992. *A-Morphous Morphology.* Cambridge: Cambridge University Press.

Andrews, Avery. 1990. Unification and Morphological Blocking. *Natural Language and Linguistic Theory* 8:507-557.

Bierwisch, Manfred. 1990. Verb Cluster Formation as a Morphological Process. *Yearbook of Morphology* 3:173-199.

Bochner, Harry. 1992. *Simplicity in Generative Morphology.* Berlin: Mouton de Gruyter.

Booij, Geert. 1990. The Boundary Between Morphology and Syntax: Separable Complex Verbs in Dutch. *Yearbook of Morphology* 3:45-63.

Bresnan, Joan, and Sam Mchombo. 1993. The Lexical Integrity Principle: Evidence from Bantu. Ms., Stanford University.

Craig, Colette, and Ken Hale. 1988. Relational Preverbs in Some Languages of the Americas: Typological and Historical Perspectives. *Language* 64:312-344.

Di Sciullo, Anna-Maria, and Edwin Williams. 1987. *On the Definition of Word.* Cambridge, Mass.: MIT Press.

Dixon, R.M.W., ed. 1976. *Grammatical Categories in Australian Languages.* Linguistic Series No. 22. Australian Institute of Aboriginal Studies. New Jersey: Humanities Press.

Dowty, David. 1979. *Word Meaning and Montague Grammar.* Dordrecht: Reidel.

Farkas, Donka F., and Jerrold M. Sadock. 1989. Preverb Climbing in Hungarian. *Language* 65:318-338.
Hoeksema, Jack. 1991. Complex Predicates and Liberation in Dutch and English. *Linguistics and Philosophy* 14:661-710.
Jakab, Istvan. 1976. *A Magyar Igekötök Állományi Vizsgáata.* Nyelvtudományi Értekezések No. 91. Budapest: Akadémiai Kiadó.
Kiss, Katalin É. 1987. *Configurationality in Hungarian.* Dordrecht: Kluwer Academic Publishers.
Klemm, A. 1928, 1940, 1942. *Magyar történeti modattan*, Vols. 1-3. Budapest.
Lapointe, Steven. 1980. A Theory of Grammatical Agreement. Doctoral dissertation, University of Massachusetts, Amherst.
Le Roux, Cecile. 1988. On the Interface Between Morphology and Syntax: Evidence from Verb-Particle Combinations in Afrikaans. *Stellenbosch Papers in Linguistics*, no. 18.
Majtinskaja, K.E. 1959. *Vengerskii Iazyk*, Vol. 2. Moscow: Akademii Nauk SSSR.
Mohanan, Tara. 1990. Arguments in Hindi. Doctoral dissertation, Stanford University.
Nash, David. 1982. Verb Roots and Preverbs. *Work Papers of SIL-AAB.* Series A, 6.
Piñón, Christopher. 1991. Falling in Paradise: Verbs, Preverbs and Reduplication in Hungarian. Ms., Stanford University.
Rombandeeva, E. 1973. *Mansiiskii (Vogulskii) Iazyk.* Moscow: Akademii Nauk SSSR.
Simonyi, Zs. 1902. A Magyar Szorend. *Magyar Nyelvör* 31:57-61, 121-129, 180-186, 233-241, 289-300, 359-379, 424-441, 473-496.
Simpson, Jane. 1983. *Aspects of Walpiri Morphology and Syntax.* Doctoral dissertation, MIT.
Soltész, K. 1959. *Az Ösi Magyar Igekötök.* Budapest: Akadémiai Kiadó.
Sugioka, Yoko. 1986. *Interaction of Derivational Morphology and Syntax in Japanese and English.* New York: Garland Publications.
Traugott, Elizabeth C., and Bernd Heine. 1991. The Semantics-Pragmatics of Grammaticalization Revisited. In Elizabeth C. Traugott and Bernd Heine, eds., *Approaches to Grammaticalization,* 190-218. Amsterdam: John Benjamins.
Watkins, Calvert. 1964. Preliminaries to the Reconstruction of Indo-European Sentence Structure. In Horace G. Lunt, ed., *Proceedings of the Ninth International Conference of Linguists.* The Hague: Mouton.
Webelhuth, Gert, and Farrell Ackerman. 1992. Complex Predicates and Wordhood: Passive Predicates in German. Paper presented at the meeting of the Chicago Linguistics Society.
Webelhuth, Gert, and Farrell Ackerman. To appear. *Wordhood and Syntax: A Theory of Complex Predicates.* Stanford, Calif.: CSLI Publications.

Weir, E.M. Helen. 1986. Footprints of Yesterday's Syntax: Diachronic Development of Certain Verb Prefixes in an OSV Language (Nadëb). *Lingua* 68:291-316.

Zsirai, L. 1933. *Az Ösi Igekötök.* Budapest: Magyar Tudományos Akadémia.

Zhirmunskii, Viktor M., and O.P. Sunik. 1963. *Morfologicheskaia Struktura Slova v Iazykakh Razlichnykh Tipov.* Moscow: Akademii Nauk SSSR.