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By general acclamation,

this volume is

dedicated to

JAMES D. McCAWLEY,

Assistant Professor of
Linguistics in the University
of Chicago, 1965-1969.

Prepositions as Predicates

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This paper[1] will present several facts about prepositions in English and, for comparative purposes, Indonesian (Bahasa Indonesia). Then we will examine several implications of these facts, which have not been accounted for by any current grammar of English. The implications of the observations we will make have some theoretical importance: we will argue that prepositions share many basic features with verbs and may be represented at a fairly abstract level of the grammar as predicates. Please note that we are not saying that prepositions are verbs: our contention is only that verbs and prepositions may be surface realizations of the same abstract semantic categories.

Observations on Prepositions

Many of the facts about English prepositions can be observed in the multiply ambiguous sentence,

John's over the hill.

Though we can find at least eight possible meanings for this sentence, we are concerned here primarily with two readings. In one over is basically locational. Of course, over is ambiguous as a location: John may be suspended in the air somewhere above the hill or he may be on the ground somewhere on the other side of the hill.[2] We will not pay much attention to this ambiguity, however. In the other reading which we will examine, over is basically motional: John has completed the act of moving over the hill. This ambiguity can be seen perhaps more clearly in the following pair of sentences, the first of which will usually be understood as having a locational predicate, and the second as having a motional predicate:

The postman is at the door. (Locational)
The fullback is through the line. (Motional)

One of the simplest syntactic tests for this difference is the deletion of the object. Like motion verbs,

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1 The authors are grateful for many helpful suggestions from Donald Smith, Oliver Grannis, and Amran Halim.
2 This and several other kinds of ambiguity with prepositions like over are discussed in Bennett (1968).

prepositions of motion have deletable objects:

He ran home. He ran.
The fullback is through the line.
The fullback is through.
John's over the hill. John's over.

The objects of locational prepositions, on the other hand, cannot normally be deleted and still preserve the locational meaning:

He's at the door. *He's at.

The sentence,

He's over.

can only mean he's completed a motion and is no longer ambiguous the way that

He's over the hill.

is ambiguous.

There is a further curious fact about these sentences, however. If the preposition is understood as motional, the subject of the sentence is the one who moved. If the preposition is understood as locational, there is still an implication of motion, but it is associated with either the speaker or the addressee or both. That is, in the locational sense, the preposition describes the potential route of the discourse participants other than the subject of the sentence. The following examples should make this point clearer:

He's over. (Subject has moved)
He's over the hill from us. (Subject has not necessarily moved; over the hill is the potential route of speaker and/or addressee to the subject.)
He's over the hill from you where I am. (Potential motion is ascribed to the addressee.)
He's over the hill from me where you are. (Potential motion is ascribed to speaker.)

In all of the examples above the preposition marked either the motion or the location of the subject. However, this is not always the case. In the following sentence, the preposition does not signify either the motion or location of the subject:

The stadium is under the bridge.

Here the preposition under clearly refers to the motion or route of the discourse participants, not the subject

of the sentence (in normal contexts).

Hence we would argue that the readings of the initial examples,

John's over the hill.

have different predicates (locational, motional, and locational plus motional) and different subjects (agentive and, perhaps, ergative). If the subject is agentive, then the predicate must be motional. If the subject is not agentive, then the predicate is usually understood as locational, in relation to the subject and motional in relation to the speaker and/or addressee. For example,

The firescape is out the window.

would normally mean that the firescape is located outside the window, and out the window signifies the path speaker or addressee may take to get there. The sentence with deleted object,

The firescape is out.

can only mean that the firescape has been moved somewhere, and would come from an underlying structure something like,

Agent + Past + Cause + Object + Motion + Location

The main point for the present is that the ambiguity of the prepositions we have examined involves both the subject and the predicate. However, before examining the implications of the observations so far, let us point out a few more facts about prepositions.

Another syntactic test for prepositions is the possibility of modifying them with further. Further does not distinguish motional from locational uses of prepositions, for the sentence,

John's further over the hill.

is still ambiguous in the same way as the original sentence was. But expansion with further does distinguish the motion-location prepositions from those that function as case markers: by, with, of, to (when it can't be replaced by toward), and at,[3] none of which are normally expanded with further. Having found a formal way separate case marking prepositions, we will focus for the present on motion-location prepositions, though we will suggest later

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3 These prepositions are described as case marker in Fillmore (1968:32).

that case marking prepositions can be understood as predicates in ways analoguous to the other prepositions.

A more interesting syntactic test for prepositions which does help us distinguish motional and locational uses of prepositions in conjoining. It has been pointed out often (Becker, 1967; Fillmore, 1968) that syntactic elements (i.e. tagmemes) are conjoinable only if they share some rather deep semantic features. For instance, two noun phrases can be conjoined as subject only if they are both in the same case (in Fillmore's sense of the word): both agents and instruments may kill things, but not conjointly:

*John and the knife killed the tiger.

Furthermore in a grammatical sequence of two noun phrases in a simplex clause which are not conjoined, the two must be of different cases. That is, a case cannot occur more than once in a single preposition. This same sort of argument helps us distinguish prepositions in a syntactic sequence of prepositions. When two prepositions of the same kind occur in sequence, they are marked by a conjunction:

He's in and out the door. (Both loc)
*He's in out the door.
He's through and past the barrier. (Both mo)
*He's through past the barrier.

Hence we will assume that when a sequence of two or more prepositions occurs unmarked by a conjunction, the two prepositions are different in some syntactically relevant way. Thus, the following sentence includes two different kinds of prepositions:

He's up in the tree.

In the sequence of two prepositions, the first (up) is motional, and the second (in), locational. The deletion test supports this analysis:

He's up.
*He's up in.

The quality of being motional or locational seems to depend on the order of the prepositions, not on the particular preposition itself. The word in, for example, was locational in the example above; it is motional in the following example:

He's in by the window.

As we observed earlier, motional prepositions have deletable objects. The sentence above is probably from something like,

He's in the house by the window.

Notice also that at, a purely locational preposition, never occurs as the first preposition in a sequence.[4]

Sequences of more than two prepositions seem to follow a regular, interestingly hierarchichal pattern. For instance, the sentence,

Come down from up in the tree.

seems to divide (by deletion) into

Come down / from up in the tree.

where down is clearly motional and from up in the tree is locational. The latter sequence, however, includes a locational marker from and an embedded sequence of motion preposition (up) plus location preposition (in).

Prepositions in Modern Grammars

Recent grammars have tended to describe prepositions in similar ways. Most grammarians distinguish prepositions from verb particles, which act differently from regular prepositions in permutation and question preposing, and seem to have a special meaning which is roughly "completive". In the following examples, the preposition up is used first as a particle, then as a motional, then as a locational:

Particle	Motional
He broke up the wall.	He climbed up the wall.
He broke the wall up.	*He climbed the wall up.
*Up what did he break?	Up what did he climb?
*He broke up(?).	He climbed up.

Locational

He was trapped up the wall.
*He was trapped the wall up.
Up what was he trapped?
*He was trapped up.

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4 We interpret to as a locational in the sequence in to, which has seemed counter-intuitive to some. Notice that in many dialects of English to can be replaced by the locational at without any change of meaning:

He's over at Bill's.
He's over to Bill's.

Like from, to may not normally have its object deleted:

He's to the river. *He's to.
He's from the South. *He's from.

It may turn out that these prepositions mark adessive and abessive underlying cases, which would explain their irregularity when compared with other motional-locational prepositions.

According to Jacobs and Rosenbaum (1968) and others, particles are introduced as features of verbs in the deep structure--surely an ad hoc solution. Other prepositions, to the extent that they are handled at all in modern grammars, are introduced in the deep structure as case markers on noun phrases or as transformational constants which appear in surface structure (e.g. to or by in dative or passive transformations.) While these devices adequately account for a small group of prepositions (those isolated earlier as case markers), they give no insight at all into those properties of prepositions discussed above; that is, the distinction between motional and locational prepositions, the affect of this distinction on both subject and predicate, the presuppositions about the discourse participants (speaker and addressee), and the semantic implications of the order of prepositions.

A Bias Toward Word Classes

Much of the awkwardness in accounting for prepositions in recent (and not so recent) grammars stems, we feel, from an assumption of the deep relevance of word classes: noun, verb, adjective, preposition, etc. For those of us who work with Asian languages, this seems a particularly Western bias. The claims by Lakoff (1966), Bach (1968), and others that there is an underlying similarity between verbs, adjectives, and nouns should not seem surprising to one who has studied Chinese, Thai, or Indonesian. However there is another classification of words which has not been challenged and which may also turn out to be a particularly Western or Indo-European bias, the distinction between so-called major and minor classes of words, sometimes called content words and function words or open classes and closed classes. That is, nouns, verbs, adjectives, and adverbs as against pronouns, articles, conjunctions, and prepositions, among others. One consequence of this distinction has been that grammarians have inserted minor class words at different points in the grammar from major lexical items. As we have seen, prepositions are introduced as deep structure features of noun phrases or verbs, or as transformational constants. We shall argue that the assumption that prepositions are in some significant way different from verbs, adjectives, and other predicates tends to obscure underlying likenesses.

Arguments for Prepositions as Predicates

One indication that prepositions are syntactically similar to verbs is suggested in a recent article by George Lakoff (1968). Lakoff pointed out that a grammar must account for the underlying similarity of sentences like

John killed Bill with a knife.
John used a knife to kill Bill.

Here the instrumental is marked in one case with a preposition, with, and in the other with a verb, use. In many languages instrumentals can be expressed only as complements of a verb like use.[5] While with is what we have tentatively called a case marking preposition, the same observation holds true for motional-locational preposition. That is, meanings which would be expressed by a regular verb in other languages. For instance, the English sentence,

He ran to the river.

can be expressed in Bahasa Indonesia as

Dia berlari sampai sungai.
'He ran arrived river'

What is in English a sequence of verb plus preposition is in Indonesian a sequence of two verbs. A similar instance can be observed in the two following English sentences:

We went across the river.
We crossed the river.

In the first sentence, the features motion and location are expressed in two words, a verb and a preposition (Go + across), while in the second, both features are expressed in a single word closely related to the preposition (cross). We would assume that the underlying structure of both sentences was the same and that the option of expressing the predicate in two words (perhaps by a process of segmentalization as suggested by Postal, 1966) allows the speaker to specify motion and location more specifically, as in

We paddled across the river.
We went under the river.

There are many other way in which prepositions are similar to verbs, adjectives and other predicates. We don't have time to develope these arguments fully here, but some of them can be listed:

(1) Prepositions frequently function syntactically as predicates, particularly in imperatives:

Down, Spot!
Out, out, damned spot!
Up, up and away!

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5 The phenomenon is discussed in detail for Thai in Stine (1969).

This phenomenon is not limited to imperatives, however:

He upped his rating.
He downed the ball.

Here the meaning is both motional and locational, and the subjects, expressed or underlying, are agentive.

(2) Like verbs prepositions have traditionally been thought to have objects. In relation to their grammatical objects they can be thought of as intransitive, semitransitive, and transitive; that is, like some statives, some verbs with particle prepositions don't take objects:

John is tired out.

Similarly, like motion verbs, motion prepositions may take optional objects:

John's out (the window).

And like transitive verbs, strictly locational and/or case marking prepositions require objects:

John's at the door.
I gave the book to John.

(3) As we have seen, a sequence of two prepositions includes a motional preposition and a locational preposition. In such sequences, the motional preposition can be rather freely replaced by stative verbs:

He's out of the window.
He's free of the window.
He's tired of the window.

What follows the preposition or stative in these positions is deletable. Furthermore, both statives and motional prepositions take the modal <u>may</u> in its epistemic or predictive sense, not in its pragmatic or permission granting sense--a test of what Fillmore (1969:73) has called "achievement verbs". That is, in none of the following can the modal <u>may</u> be interpreted as pragmatic:

He may be out of the window.
He may be free of the window.
He may be tired of the window.

(4) Motion-location prepositions share with verbs the features momentary and continuative. Normally motion prepositions are momentary and hence do not take complements which describe a time span (Fillmore, 1969:71). The sentences,

He's over the hill for three days.
He's over the hill until Friday.

must, therefore, be understood as having locational predicates. A motional preposition, however, may be negated and take a time-span complement:

He was not over the hill for three days.

This sentence is ambiguous. Taken in its motional sense, it states that a motion was not completed for three days. That is, what was negated was the "momentariness" of the preposition, not the motional or locational features. In this way it acts just like momentary verbs, as the following examples illustrate:

*John woke up for three days.
John didn't wake up for three days.

Some Implications of these Arguments

If all or even some of these arguments prove to be correct, then previous descriptions of a sentence like

John threw the baseball over the hill.

are probably incorrect. In the first place, the sentence is four ways ambiguous:

a) John was over the hill when he threw the ball.
b) John threw the ball which was over the hill.
c) John threw the ball which is over the hill now.
d) John threw the ball and caused it to move over the hill.

In the first three readings, over is locational and is either a constituent of the whole sentence (a) or attached to the object via a reduced relative clause (b, c). In the fourth readings, however, over is motional, as can be shown by object deletion:

John threw the ball over.

Here, we would argue, there are two predicates, one something like

John cause S

and another something like,

Ball move to loc

The combining of the sentences then creates a frame,

X cause Y move to Z

which would either select a verb like throw, push, kick, etc. by a merging of the features (cause + move, or would select two verbs, preserving the distinctness and separation of the features, as in,

John made the ball go over the hill.[6]

There are, then, several features in the underlying structure of a sentence like,

John threw the ball over the hill.

These would include features like cause, motion, and location which may be assigned to the participants in different ways. If both of the features motion and location are assigned to the preposition, then we get a reading such as (d) above. If the preposition is only locational (a-c above), notice, as we pointed out earlier in the paper, that the motion is assigned to the speaker or addressee (the higher level participants in the sentence).

There are several other implications which we might develop had we more time. For instance, the behaviour of prepositions seems to support the notion that syntactically relevant semantic features are the properties of nodes or frames, not particular lexical items, and that features not assigned to constituents of a sentence may be assigned to higher level discourse participants. Also it is interesting to speculate that case marking prepositions may be predicates, too; that just as there is a semantic sameness between "with a knife" and "X used a knife." there may be verbal correlates to by, of, to, and at. Our main purpose, however, has been to demonstrate the underlying similarity between verb phrases and prepositional phrases and to suggest that the traditional distinction between major and minor word classes has been one of the main reasons we have failed to take account of these similarities.

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6 Notice that the surface grammatical relation "direct object" is, in this case, a result of the combining of the sentences and the grouping of the features. That is, while the two sentences,

(a) John threw the ball over the hill.

(b) John made the ball go over the hill.

may have the same underlying structure, ball is the object only in (a); in (b) the object is the embedded sentence. When the NP the ball becomes a constituent (direct object) of the matrix sentence, then it is possible to delete the predicate of the source sentence, yielding,

John threw the ball.

This is not possible for (b) because there the NP the ball is not a constituent of the matrix sentence.

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