Lexical Relatedness and Conceptual
Structure: The Case of *Pass* *

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0. Introduction

Thematic relations play a central role in the theory of conceptual structure advocated by Jackendoff (1983, 87, 90). For Jackendoff, the main reason to adopt a thematic analysis has been, and still is, to capture lexical generalizations, as well as to explain grammatical phenomena that lack a structural basis.[1] By lexical generalization is meant expressing the relatedness between various uses of the same lexical item. For instance, the verb *keep* can express both maintenance of position as in (1a) and continued possession as in (1b).

(1) a. Bill kept the book on the shelf.
    b. Bill kept the book.

One does not want to say that the two *keep*'s are totally different lexical items i.e. mere homonyms, just like the river *bank* and the savings *bank*. Rather, the same verb *keep* is used in two different semantic fields (spatial and possessional). Thus it is a significant generalization to express the relatedness between the two *keep*'s.

Jackendoff's conceptual structure accounts for the two *keep*'s in (1) in a straightforward manner: Both of them are realizations of the semantic functions CAUSE-STAY. They are distinguished from each other by the kind of semantic field modifier subscripted to the function (Spatial/Possessional):

(2) a. [CAUSE([BILL],[STAY$_{spat}$ ([BOOK],[ON SHELF])])]
    b. [CAUSE([BILL],[STAY$_{poss}$ ([BOOK],[AT BILL])])]

In this way, the lexical relatedness can be accounted for

explicitly by the combination of a semantic function with a semantic field.

The aim of this article is to explore the possibilities of this lexical analysis via a case study. The discussion will center on the verb *pass*. In Section 1, this kind of analysis is applied to several uses of *pass* (i.e. the combination of a function with a field modifier). In Section 2, it will be shown that what really counts is not the semantic field but the conceptualizations available in the field. In this sense, the theory of conceptual metaphor (Lakoff & Johnson 1980, Lakoff 1987, 90) can be combined with the theory of conceptual structure to form a revealing analysis.

1. Cross-field generalization

What makes it possible to express the parallelism across different semantic fields is the following hypothesis put forth in Jackendoff (1983: 188):

> *Thematic Relations Hypothesis (TRH)*
> In any semantic field of [EVENTS] and [STATES], the
> principal event-, state-, path-, and place-functions are
> a subset of those used for the analysis of spatial
> location and motion. Fields differ in only three possible
> ways:
> a. what sorts of entities may appear as theme;
> b. what sorts of entities may appear as reference
>   objects;
> c. what kind of relation assumes the role played by
>   location in the field of spatial expressions.

The essential claim of the TRH is that across all the semantic fields the same set of concepts (i.e. GO, BE, STAY, etc.) appear over and over again, which are drawn primarily from the conceptualization of space. Thus it is quite

possible for a spatial verb to generalize across many semantic fields (cross-field lexical generalization).

So we begin by examining the spatial-field use of *pass* first, where the thematic relations can be most easily detected. After the functions of *pass* are determined, we will go on to other semantic fields to describe its extended uses.[2]

1.1. Spatial

Jackendoff (1987: 390) offers the following analysis of spatial *pass*. It appears in three syntactic contexts: with a null complement, with a direct object, and with a PP.

(3) a. The train passed.
    b. The train passed the station.
    c. The train passed $\left\{\begin{array}{l} \text{through the tunnel.} \\ \text{under the bridge.} \\ \text{etc.} \end{array}\right.$

The transitive use (3b) roughly means 'go via near', so that its conceptual structure is (4):

(4) $[_{\text{Event}}$ GO$([_{\text{Thing}}\ ]_i, [_{\text{Path}}$ VIA$([_{\text{Place}}$ NEAR $([_{\text{Thing}}\ ]_j)])])]$

However, the PP complement in the frame of (3c) is subject to a selectional restriction: Source, Goal, and Direction expressions are ungrammatical.

(5) *The train passed $\left\{\begin{array}{l} \text{(away) from the station.} \\ \text{to the station.} \\ \text{toward the station.} \\ \text{northward.} \end{array}\right.$

The PP complements are restricted to Routes——essentially

Paths whose Path-function is VIA.[3]

Jackendoff thus posits the following lexical entry for the verb *pass*, which is intended to be the combination of the three conceptual structures for (3a), (3b), and (3c).

(6)
$$\begin{bmatrix} \text{pass} \\ \text{[-N, +V]} \\ \text{---} \ (\text{XP}_j) \\ [_{Event} \ \text{GO}([_{Thing} \ ]_i, [_{Path} \ \text{VIA}([_{Place} \{\text{NEAR}(\\ \qquad\qquad [_{Thing} \ ]_j)\}]))]_{\langle j \rangle})] \end{bmatrix}$$

While this analysis is offered in the context of developing an abbreviatory convention in order to collapse the multiple conceptual structures into one entry, it suffices for the present purpose to point out that there are three *pass*'s in terms of the postverbal complements.[4]

(7)   The train passed.   (A)
      [GO([TRAIN],[AWAY])]
(8)   The train passed the station. (B)
      [GO([TRAIN],[PAST STATION])]
(9)   The train passed through the tunnel. (C)
      [GO([TRAIN],[VIA TUNNEL])]

For convenience' sake, let us refer to them as (A), (B), and (C). In addition to the above three, there is a fourth use (D):

(10) I passed the rope through the ring. (D)

Here unlike the above three, not subject but direct object NP is asserted to move. This use can be paraphrased as 'to cause to pass', which suggests the following representation.

(11) [CAUSE([I],[GO([ROPE],[VIA RING])])]

Notice that (D) is a causative counterpart of (C) in terms of conceptual structure: The GO-function embedded in the second argument position of CAUSE is identical to the GO in (C). In both cases the PP is *through*, which corresponds to VIA in conceptual structure. And the subject of (D) expresses the causer who brings about the passing of the rope through the ring.

Consequently we have found four uses, all of which are analyzed in terms of either GO or CAUSE-GO.

1.2. Temporal

In the temporal field we find the following three uses of *pass*, which we will refer to as (E), (F), and (G):

(12) a.   The time has passed.   (E)

     b.   He passed the time.   (F)

     c.   He passed through four years of
          much bitterness.   (G)

These three uses are distinguished from each other in terms of the complement: a null complement (E), a direct object (F), and a PP complement (G), respectively. Furthermore, all the three can be analyzed as GO-verbs. Thus their representations should be:

(13)   The time has passed.   (E)
       [GO$_{Temp}$ ([TIME],[AWAY])]

(14)   He passed the time.   (F)
       [GO$_{Temp}$ ([HE],[PAST TIME])]

(15)   He passed through four years of much bitterness. (G)
       [GO$_{Temp}$ ([HE],[VIA FOUR YEARS])]

In terms of the complement frames and the shared GO-function, (E), (F), and (G) are temporal counterparts of (A), (B), and

(C), respectively.

1.3. Possessional

Let us go on to the possessional field. Among the several distinct notions of possession, alienable possession is intended here. Alienable possession divides into (at least) ownership and temporary control. The following *pass* is an instance of ownership:

(16) Her property passes to her son. (H)
[GO$_{poss}$ ([HER PROPERTY],[TO HER SON])]

On the other hand, consider the following double object use.

(17) He passed me the salt. (I)

This use forms a natural class with *give* in participating in a dative alternation, so that it can be analyzed parallel to *give* as follows:[5]

(18) [CAUSE([HE],[GO$_{poss}$ ([SALT],[FROM HE TO I])])]

Here, not ownership but temporary control is described. (I) is a causative counterpart of (H) in terms of conceptual structure, although the notion of possession is not exactly of the same kind.

1.4. Identificational

Another semantic field, *Identificational*, concerns categorization and ascription. of properties. In this field *pass* comes to express the change of state.

(19) Water passes from a liquid to a solid state when it freezes. (J)
[GO$_{ident}$ ([WATER], [FROM LIQUID TO SOLID])]

1.5. Existential

Finally, we have the following well-known expression in the existential field:

(20) He passed away at eighty. (K)

$[GO_{Exist}$ ([HE],[OUT OF EXISTENCE])]

So far we have found seven extended uses of *pass* in four semantic fields, in addition to the four spatial uses. Their relatedness can be described as in Fig. 1.
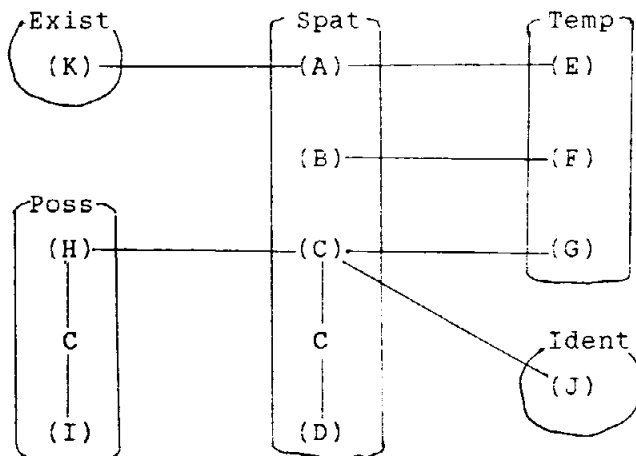

Fig. 1   C: causative-pair

2. The significance of conceptualizations

2.1. Another look at temporal *pass*

In Fig. 1 above, each use is linked to some other use. Let us examine the nature of these links. Of the eight links, the two vertical ones i.e. that between (C) and (D), and that between (H) and (I) stand for a causative relation in conceptual structure. All the other links are instantiations of the cross-field correspondence. What do these links stand for?

The term 'cross-field' may give us the impression that these links are no more than the specifications of the semantic field (Temporal, Possessional, etc.). But closer scrutiny suggests that this is not the case. Consider the three temporal uses (E), (F), and (G) once again.

(21) a. The time has passed.   (E)

    [GO$_{Temp}$ ([TIME],[AWAY])]

    b. He passed the time.   (F)

    [GO$_{Temp}$ ([HE],[PAST TIME])]

    c. He passed through four years of

    much bitterness.   (G)

    [GO$_{Temp}$ ([HE],[VIA FOUR YEARS])]

It should be noted that there is a clear difference between (E), on the one hand, and (F) and (G), on the other, with respect to the choice of theme (i.e. an entity in 'motion'): With (E), time occupies the first argument of GO. On the other hand, (F) and (G) take a human being as first argument. This difference cannot possibly be accounted for by just saying that these uses are temporal.

Rather, this difference reflects a difference in conceptualization. Time is conceptualized as a moving entity in (E), but it is a human being that is conceived of as moving with (F) and (G). Thus two kinds of totally different conceptualizations are involved here, in spite of the fact that they all belong to the temporal field.

It follows then that each link in Fig.1 stands for a particular conceptualization: The link between (A) and (E) stands for a conceptualization in which time is conceived of as moving, while the other two links (that between (B) and (F) and that between (C) and (G)) both express one where a human being is moving. That is, the temporal field has (at least) two conceptualizations, one of which is responsible for (E), the other for (F) and (G).

One might feel it strange that the temporal field should have such apparently contradictory conceptualizations. But this feeling vanishes as soon as one realizes that the two conceptualizations indeed 'fit together' by being *coherent* with each other, as revealed by Lakoff & Johnson (1980). (Lakoff & Johnson develop the theory of conceptual metaphor, thereby attempting to reveal the way in which most of our conceptual system is metaphorically structured. Conceptual metaphor in this sense naturally translates into conceptualization in the current context, so that their account in terms of metaphor is directly applicable here.)

Lakoff & Johnson (1980: 44) point out that there are two ways to conceptualize the passing of time, as exemplified in the following expressions:

(22) a. The time will come when ...
         The time has long since gone when ...
         The time for action has arrived.
     b. As we go through the years, ...
         As we go further into the 1980s,...
         We're approaching the end of the year.

In (22a) time is a moving object, while in (22b) it is we that are moving and in that case time is standing still. Although the two conceptualizations make totally different claims as to what moves, they are coherent because they both end up meaning the same thing: From our point of view, time goes past us, from front to back. That is, they are two subcases of the same metaphor TIME GOES PAST US, as shown in the diagram below:

                    From our point of view
                    time goes past us, from front to back

      Time is a moving object   Time is stationary and we move
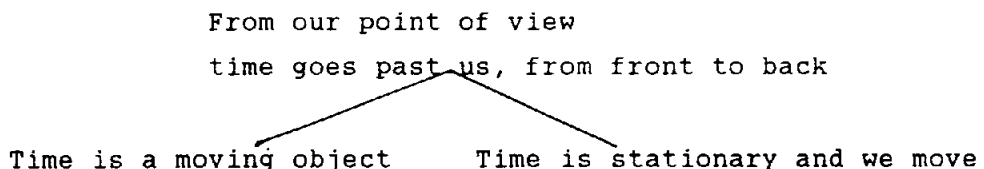
and moves toward us.   through it in the direction
                             of the future.

Thus it is no wonder that there is more than one
conceptualization (metaphor) in the temporal field.
Incidentally, there is a third conceptualization which is
observed by Jackendoff (1983: 189). Consider the sentences
below:

      (23) a. The meeting is at 6:00.
           b. We moved the meeting from Tuesday to Thursday.
           c. Despite the weather, we kept the meeting at 6:00.

Evidently the conceptualization behind these sentences is
different from those already mentioned: Events and states are
moving entities, and time serves as a pseudo-space. Based on
these expressions, Jackendoff defines the temporal field as
follows:

      (24) Temporal field:
           a. [EVENTS] and [STATES] appear as theme.
           b. [TIMES] appear as reference object.
           c. Time of occurrence plays the role of location.

Although (24) is stated in a formulaic form according to the
TRH, the conceptualization expressed there is clear: Events
(and states) are located in a one dimensional time-line. So
(24) can also be stated in a propositional form, just in the
manner of conceptual metaphor of Lakoff & Johnson: EVENTS
EXIST IN TIME. As a matter of fact, this can be further
divided into two metaphors: AN EVENT IS AN ENTITY plus TIME
IS A LOCATION, which correspond to the clauses a. and b. in
(24), respectively.

      Consequently, the organization of the temporal field is
as shown below:[6]

(25) Temporal field:

    ⌠a.   EVENTS EXIST IN TIME (= AN EVENT IS AN ENTITY +

    | TIME IS A LOCATION)

    ⌡b.   TIME GOES PAST US ⌠ b1. TIME IS A MOVING OBJECT

            .   ⌡ b2. TIME IS STATIONARY

            .

            .

(The vertical dotted line indicates that there can be still further conceptualizations available in the temporal field).

To go back to our discussion of temporal *pass*, the explanation goes like this. *Pass* has a GO-function as an essential part of its meaning. When this function is combined with the TIME IS A MOVING OBJECT metaphor, the first argument is time (i.e.(E)). But when it is combined with TIME IS STATIONARY AND WE MOVE THROUGH IT, a moving observer occupies the first argument position of GO (i.e.(F) and (G)). This is another way of saying that in Fig.1, the link between (A) and (E) stands for the TIME IS A MOVING OBJECT metaphor, while the other two links stand for the TIME IS STATIONARY AND WE MOVE THROUGH IT metaphor.[7]

2.2. Metaphor in lexical analysis

The discussion in the last subsection has revealed that it is not the semantic field (Temporal, Possessional, etc.) but the conceptualization available in the field that really counts. Moreover, it turns out that the conceptual metaphor in the sense of Lakoff & Johnson naturally translates into the conceptualization in question.

It follows, therefore, that an adequate lexical analysis can be done by the combination of a function with a metaphor. This has two consequences. On the one hand, what has been subsumed under the TRH can be restated in terms of metaphor. Thus, in Fig. 1 the link between (C) and (J) stands for

PROPERTIES ARE LOCATION, and that between (C) and (H) stands
for BEING POSSESSED IS LOCATION, and so on. On the other
hand, it is expected that further uses can be accounted for
by means of metaphor. Let us proceed along this line of
analysis.

We begin by the following use (L), which can be analyzed
as a GO-verb.

(26) Contributions passed $800. (L)
[GO([CONTRIBUTIONS],[PAST $800])]

What is behind this expression is the LINEAR SCALES ARE PATHS
metaphor (Lakoff 1990: 53). Thus the reference object of the
Path is a particular point on a scale, and the quantity of
contributions goes past this point.

Consider next (27), which means 'to say, to deliver'.

(27) He passed a remark. (M)

This use can be analyzed as CAUSE-GO, parallel to (D); The
direct object denotes a moving entity. In this case *a remark*
comes out of the subject *he*. So (27) can be represented as:

(28) [CAUSE([HE],[GO([REMARK],[FROM HE])])]

It should be noticed that the conceptualization involved
here is that having to do with verbal communication in
general: what Reddy (1979) calls the conduit metaphor. That
is, the speaker puts ideas (objects) into words (containers)
and sends them (along a conduit) to a hearer who takes the
idea/objects out of the word/containers.

Reddy divides the conduit metaphor into two parts i.e.
the major framework and the minor framework. Of these two,
the minor one is relevant for the present discussion. There
are three subcategories in the minor framework: (a) ideas are

ejected by speaking or writing into an external "idea space"; (b) ideas are reified in this external space; (c) these reified ideas may, or may not, find their way back into the heads of living humans. Among these, the subcategory (a) is just the conceptualization observable in (M): A remark (i.e. idea) is ejected by speaking from within the speaker to an external space.

This conceptualization is made up of two metaphors in the sense of Lakoff & Johnson; On the one hand, the speaker is conceptualized as a container for ideas, with a bounding surface and an in-out orientation viz. PEOPLE ARE CONTAINERS. On the other hand, ideas are regarded as moving objects, which come out of the speaker. Hence IDEAS ARE OBJECTS.

The same thing can be said of the following use (N).

(29) No secrets passed her lips. (N)
[GO([SECRET],[PAST HER LIPS])]

Here the function is GO, but the conceptualization involved is the same: The information comes out of the speaker. The direct object *her lips* is to be construed not as a physical entity taken in isolation. Rather, it is that part of a human body through which a message is ejected. Accordingly, for a message to go past one's lips is part of the whole process of ejecting a message. In this sense, *pass one's lips* metonymically stands for the process of being uttered.

Next, the subcategory (b) is to be found in the following:

(30) The story passed from person to person. (O)
[GO([STORY],[FROM PERSON TO PERSON])]

Here neither the speaker nor the hearer is within the scene. Rather, the transmission of the story (i.e. idea) among people comes to the fore. Because the speaker as source of the information is lacking, the metaphor involved here is

just IDEAS ARE OBJECTS.

In this Section we have come up with another four uses of *pass*, in addition to the eleven already mentioned in Fig. 1. These four uses are to be handled by means of metaphor, rather than by means of the field modifier. Moreover, for even those that can be treated by the field modifier it is necessary to specify the conceptualization involved in any case. So the relationships among the fifteen uses are described as in Fig. 2.[e]
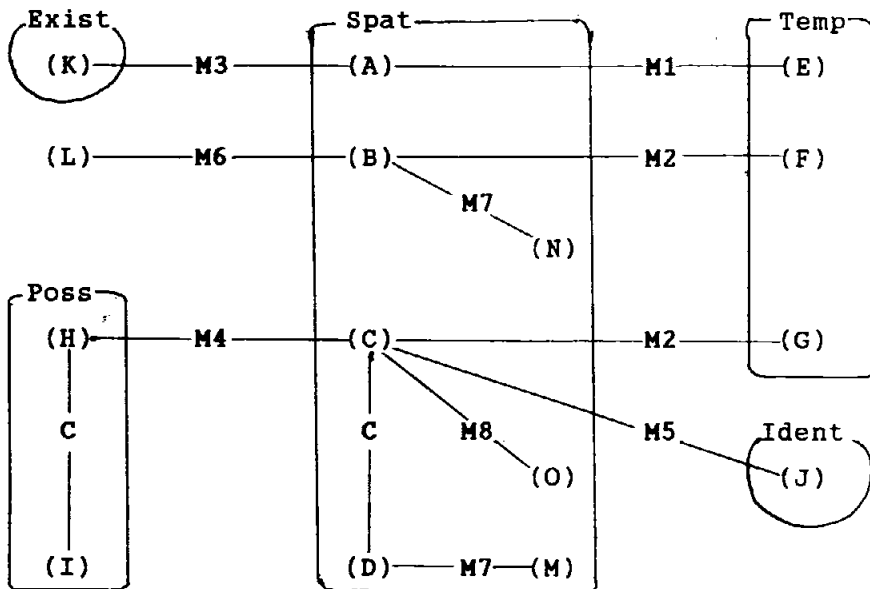
C: causative-pair
M1: TIME IS A MOVING OBJECT
M2: TIME IS STATIONARY AND WE MOVE THROUGH IT
M3: EXISTENCE IS LOCATION HERE
M4: BEING POSSESSED IS LOCATION
M5: PROPERTIES ARE LOCATION
M6: LINEAR SCALES ARE PATHS
M7: IDEAS ARE OBJECTS + PEOPLE ARE CONTAINERS
M8: IDEAS ARE OBJECTS

Fig. 2

3. Further uses

There are still several other uses that can be analyzed in terms of either GO or its causative counterpart, suggesting that they can be handled along the line of our analysis. We will just briefly touch upon them.

During a game of football etc., you pass the ball to someone else in your team. This use is analyzed as follows:[9]

(31) Robson passes to Lineker on the right wing.
[CAUSE([ROBSON],[GO([BALL],[TO LINEKER])])]

When you cannot answer the question or when you are unwilling to take part in the next stage of a game, you also use the word 'pass'. In that case, what is passed is your turn; This use can be paraphrased as 'to let one's turn go by', so that the conceptual structure is like this:

(32) He refused to play the next round. 'I pass,'
he said.
[LET([I],[GO([MY TURN],[AWAY])])]

The following use can also be analyzed by the same functions.

(33) He passed blood in his urine.
[LET([HE],[GO([BLOOD],[FROM HE])])]

Blood comes from within the human body (more specifically, the kidneys). So the metaphor PEOPLE ARE CONTAINERS is involved here.

Finally, we have the following expression.

(34) The candidates passed the examination.

Here, going through the examination stands for succeeding in the examination. Exactly the same thing can be said of (35).

(35) The examiners passed most of the candidates.

(35) can be paraphrased as 'The examiners let the candidates pass the examination.' So (34) and (35) can be represented as (36a) and (36b), respectively.

(36) a. The candidates passed the examination.
         [GO([CANDIDATES],[PAST EXAMINATION])]
     b. The examiners passed most of the candidates.
         [LET([EXAMINERS],[GO([CANDIDATES],
                              [PAST EXAMINATION])])]

Quite probably, the following uses are to be analyzed analogously.

(37) a. The bill passed and became law.
     b. Parliament passed the bill.

4. Concluding remarks

In this article it has been shown that many, if not all, of the various uses of *pass* are accounted for by the combination of a function (GO or its causative) with a number of conceptualizations. This indicates the usefulness of conceptual structure for capturing the lexical relatedness among the various uses.[10]

At the same time, it is remarkable that these uses form a kind of network, as shown .in Fig. 2. It is practically impossible to unify these uses into a single lexical entry, which accords with the claim made by Lakoff (1987) and Norvig and Lakoff (1987). In this sense, the analysis by means of conceptual structure is expected to develop into a lexical-network theory.[11]

Notes

* I would like to thank the following people for their invaluable comments on an earlier version of this paper: Yukio Hirose, Daisuke Inagaki, Shinsuke Homma, and Mika Okuyama. The data are mainly drawn from *Collins COBUILD English Language Dictionary*.

[1] These two objectives date back to Jackendoff (1972). Of the two, the latter led Jackendoff to the postulation of the Thematic Hierarchy Condition. This condition is intended to handle phenomena such as passive, reflexive, coreference, etc. in Jackendoff 1972, and reflexive, control, and quantification in Jackendoff 1983.

[2] Besides the spatial field, five semantic fields are mentioned in Jackendoff (1983): Temporal, Possessive, Identificational, Circumstantial, and Existential. I have been able to find extended uses of *pass* in all these fields except for the circumstantial field.

[3] Yukio Hirose (personal communication) has pointed out to me that even such prepositions as 'from' and 'to' are possible when the Path denoted by the PP is construed as Route. Thus 'pass from door to door' is perfectly acceptable.

[4] For expository purposes, the Path functions are abbreviated as AWAY, PAST, and VIA.

[5] This does not mean that *pass* (I) is totally identical to *give*, of course. Pinker (1989) argues that the semantic field of *give* is "possessional", whereas that of *pass* is "possessional: physical custody"; One can *give*, but not *pass*, someone by signing a title transfer agreement. One can *pass*, but perhaps not *give*, an object one doesn't own.

[6] According to Lakoff & Johnson, two metaphors are *consistent* when they form a single image. This is different from coherency, where the two metaphors are not consistent (i.e. have no single image) but fit together with each other by being subcategories of a major category. So the EVENTS

EXIST IN TIME metaphor is a case where the two metaphors (AN EVENT IS AN ENTITY and TIME IS A LOCATION) are consistent, while in the TIME GOES PAST US metaphor the two subcategories are coherent. As a consequence, they are differently represented in (25) (conjunction vs. enumeration).

⁷ There is an alternative way of analyzing (F): 'To pass the time' could be paraphrased as 'to cause the time to go by'. This is in fact the explanation given in *Longman Dictionary of Contemporary English*. In that case, the function would be CAUSE-GO and the metaphor TIME IS A MOVING OBJECT. But this alternative does not seem to be promising. First, in the TIME IS A MOVING ENTITY metaphor time moves on its own along a time line, and its movement cannot be under any human control. Second, the notion of control is not salient in (F). If anything, the causative analysis seems to be appropriate for *spend*. Notice the contrast **Pass the time/Spend the time* (I am indebted to Yukio Hirose for this insight).

⁸ Here (M), (N), and (O) are included among the spatial field. This is because all the three uses focus on the uttering of sounds, rather than the communication of ideas. In this sense the three belong to the *say* class, rather than the *tell* class. Gruber (1976) attributes the difference between *say* and *tell* to that between spatial and possessional fields: *Tell* indicates that what is told is subsequently heard (i.e. the information comes to be possessed by the hearer), whereas for *say* it is possible not to be understood (i.e. the information as a sound reaches the hearer). This insight is elaborated by Pinker (1989).

⁹ 'To pass a ball' is·very similar to (I) 'to pass me the salt', but the two are to be distinguished from each other. The latter belongs to the *give*-class, hence the semantic field is possessional. But the former asserts merely the movement of the ball, and the semantic field is spatial. If anything, it is to be paraphrased by *send*, which does not

entail that the moved entity results in being possessed.

[10]   It must be noticed that the Event-function (GO or CAUSE-GO) is kept intact among the various uses, but the Path-function is not necessarily invariant. Consider the possessional use (H), for instance. (H) selects Goal as its Path, although *pass* allows only Route in the spatial field (cf. (5)). I think this difference in the selection of Path is induced by the nature of the Path in the possessional field, as is pointed out by Jackendoff (1983: 192): The pseudo-spaces of the possessional field are discontinuous, because there is no way to make sense of a continuous transition in possession from one individual to another. Thus Paths degenerate essentially into their endpoints i.e. Source and Goal. Therefore, not VIA but TO is the possibility available in the possessional field.

[11]   Besides the present article, Iwata (1989) is also an attempt to carry out a network analysis in terms of conceptual structure, although the term 'network' is not used there.

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