Chapter 5

Figure and Ground in Language

1 INTRODUCTION

This chapter investigates the pervasive system by which language establishes one concept as a reference point or anchor for another concept.[1] It posits the existence in language of two fundamental cognitive functions, that of the **Figure**, performed by the concept that needs anchoring, and that of the **Ground**, performed by the concept that does the anchoring. This pair of concepts can be of two objects relating to each other in space in an event of motion or location—and represented by nominals in a single clause. Or the pair of concepts can be of two events relating to each other in a temporal, causal, or other type of situation—and represented by the main and subordinate clauses of a complex sentence. Cognitive anchoring mainly involves one of the major schematic systems of language, that of attention and its differential distribution.

2 FIGURE AND GROUND IN A SINGLE CLAUSE

We first expand on the pair of cognitive-semantic categories just introduced. Their relevance shows up, in the first instance, in relation to a semantic event of motion or location (as treated in chapter II-1)—that is, an event conceptualized as involving one physical object moving or located with respect to another. Here, each object is taken as bearing to the whole event a significant and distinct relation, termed respectively that of "Figure" and that of "Ground." The following sentences exemplify these categories.

(1) a. The pen lay on the table.
    b. The pen fell off the table.

In both, *the pen* specifies the object that functions as Figure, and *the table* the object that functions as Ground.[2]

The terms Figure and Ground have been taken from Gestalt psychology, but they are written with capitals here to mark the distinctness of their linguistic usage from their original usage. In their linguistic usage, they have the following specific characterizations.

(2) *The general conceptualization of Figure and Ground in language*
   The Figure is a moving or conceptually movable entity whose path, site, or orientation is conceived as a variable, the particular value of which is the relevant issue.
   The Ground is a reference entity, one that has a stationary setting relative to a reference frame, with respect to which the Figure's path, site, or orientation is characterized.

The text below will sometimes refer to a reference entity as a "reference point" to take advantage of that English expression's ready-made indication of our Ground function. But the expression's inclusion of the term "point" can be disregarded. For neither the Figure entity nor the Ground entity need be topologically idealizable as a geometric point for their basic definitional roles to be fulfilled. The Figure or the Ground can as readily be a multiplicity of points, a linear extent, an area, or a volume, as illustrated by (3).

(3) a. Rocks filled the box.
   b. The river flowed alongside the mountain range.

With the aid of the accompanying diagrams—schematizing, as an example, a pen falling off a table—it can be seen that for there to be any notion of the motion of an object (i.e., a Figure), there must also be present both a reference object (a Ground) and a reference frame.

(4)

a.   b.   c.
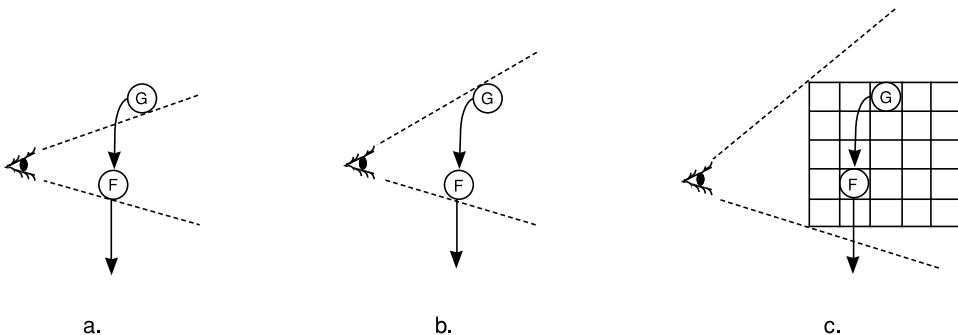
For, as illustrated in (4a), if an observer (or conceiver) has in sight (or mind) only the Figure object, she can know only that the object exists, but nothing of change of position. Even when, as in (4b), the observer sees both Figure and Ground objects—still without any reference frame, however—she can additionally know only that there is a change from the two objects' being together to their being apart, but could not know which object moved (or if both moved), nor whether there is any further motion once the two objects are apart, since there is no way to determine (change of) distance. Only when the observer sees both objects within a framework, as in (4c), can she know which object is stationary, which object moves, by how much, and along what path. The notion of the motion of an object also crucially depends on the correlation of the spatial points of its path with points of the temporal continuum, but this is for subsequent study of the relation of space and time in language.

This tripartite partitioning of a spatial scene into a Figure object, a Ground object, and a reference frame as background affords a basis for relating the linguistic Figure/Ground concepts to the psychological figure/ground concepts. When a Figure object and a Ground object in a linguistic representation are considered only with respect to their relation to each other, apart from any background, then the former object is indeed the psychological figure and the latter object is the psychological ground. Such a bipartite partitioning of a referent scene is the likeliest conceptualization for a sentence like *The ball rolled across the table*. But consideration of a background can be further included for a tripartite scene partitioning. This is the likeliest conceptualization for a sentence like *The ball rolled past the lamp*, since here one must consider not only the two principal objects, the ball and the lamp, but also the region surrounding the lamp, through which the ball moves. In this case, one interpretation is that the combination of the linguistic Figure object and Ground object together functions as a psychological figure, while the background now functions as a psychological ground.[3] Under this interpretation, one set of psychological figure/ground relations is embedded within another. The Figure object is the psychological figure to the Ground object as the psychological ground. But in addition, the combination of the two objects is a psychological figure to the background as a psychological ground.

While the categories of Figure and Ground are clearly assignable within a motion event where one object is moving and the other is stationary, they might there be thought to be merely a restatement of the fact of this movement versus locatedness rather than independent notions in their own right. The existence of these categories in semantics can be

demonstrated, therefore, if they also appear in a locational event where both objects are stationary. We undertake such a demonstration here.

One might initially expect two sentences like

(5) a. The bike is near the house.
    b. The house is near the bike.

to be synonymous on the grounds that they simply represent the two inverse forms of a symmetric relation. This relation here simply pertains to the small quantity of distance between two objects. However, the two sentences in fact do not mean the same thing. They *would* be synonymous if they specified *only* the cited symmetric relation. But in addition to this, (5a) makes the nonsymmetric specifications that, of the two objects, one (the house) has a set location within a reference frame (here, implicitly, the neighborhood, world, and so on) and is to be used as a reference object by which to characterize the other object's (the bike's) location. Correlatively, the location of the other object is understood as a variable (realistically so in this instance, since the bike will be in different locations on different occasions) whose particular value is the relevant issue.

On the other hand, (5b) makes all the reverse specifications. However, these happen not to conform with the exigencies of the familiar world, a fact that renders the sentence somewhat peculiar, and hence more clearly flags the sentence as different from (5a). The nonsynonymy of the two sentences is thus due to the differentiality with which their nominals specify the semantic functions of variable point and reference point—that is, of Figure and Ground. This can be indicated by parenthesized function markings abbreviatedly symbolized as F and G in (6).

(6) a. The bike (F) is near the house (G).
    b. ?The house (F) is near the bike (G).

Even where a speaker does not want to indicate anything about Figure-Ground assignment, language inescapably *imposes* that semantic addition upon a basic proposition in formulations like the preceding ones. It might at first be thought that certain grammatical constructions, such as the reciprocal, are specific means available in a language with which to avoid expressing such role assignment. But in fact, the reciprocal does not abstract the symmetric relation common to two inverse asymmetric forms, but rather *adds* the two together. This is shown by the fact that the reciprocal counterpart of the (6) sentences semantically is odd in the same way that (6b) is odd.

(7) ?The bike and the house (F_1 & F_2) are near each other (G_2 & G_1).

More factors must be introduced to explain why the reversal of "bike" and "house" in (6a) yields a sentence semantically so different from the first, and peculiar to boot. After all, two sentences like

(8) a. John (F) is near Harry (G).
    b. Harry (F) is near John (G).

also have their nominals reversed, but they do not differ from each other so dramatically, and both are semantically ordinary. Both the "bike/house" example and the "John/Harry" example accord with the characterizations of Figure and Ground in (2) in that their second-appearing nominal acts as Ground with respect to their first-appearing nominal as Figure. Thus, in (8b), "John" is set up as a reference point with known location for establishing the location of Harry. But if these initial characterizations were all that mattered, then it should suffice merely to say that, in *The house is near the bike*, the "bike" has simply been set up to act as a reference point for locating the house. The fact that such function assignments are instead so problematic indicates that there are certain additional characteristics that render one entity more suitable for functioning as Ground or another entity as Figure. Such characteristics can be considered the "associated characteristics" of Figure and Ground that tend to correlate with the definitional properties already given for them in (2). A heuristic set of these follows. Note that the last five associated characteristics, as well as aspects of the definitional characteristics, broadly involve the schematic system of attention and its differential distribution.

(9)

	Figure	Ground
Definitional characteristics	Has unknown spatial (or temporal) properties to be determined	Acts as a reference entity, having known properties that can characterize the Figure's unknowns
Associated characteristics	• more movable • smaller	• more permanently located • larger

Figure	Ground
• geometrically simpler (often pointlike) in its treatment	• geometrically more complex in its treatment
• more recently on the scene/in awareness	• more familiar/expected
• of greater concern/relevance	• of lesser concern/relevance
• less immediately perceivable	• more immediately perceivable
• more salient, once perceived	• more backgrounded, once Figure is perceived
• more dependent	• more independent

The peculiarity of the sentence *The house is near the bike* can thus be accounted for by the fact that its assignment of a Figure role to "house" and a Ground role to "bike" flouts most of the associated characteristics in the list.

However, the associated characteristics are only tendential correlates of the Figure and Ground functions, whereas the definitional characteristics are determinative of them. Thus, the sentence *The house is near the bike* is not barred from use even though it contravenes the associated characteristics. On the contrary, it is a fine sentence in a context that permits the definitional Figure/Ground properties to hold. An example might be where the bike is ridden by a famous individual in a small town who parks it in the same spot known by all, and where I am trying to tell a new friend how to get to my house. Even in this new context, the "house" as Figure and the "bike" as Ground still fail most of the associated characteristics. The context allows the "house" and the "bike" newly to accord only with two of the associated characteristics, namely, with "less versus more familiar" and "of greater/less concern." But the "house" and the "bike" do obey the definitional properties here, which permits their felicitous use as Figure and Ground, respectively, in the new context.

The view has sometimes been expressed that it is not legitimate to claim the existence of Figure and Ground functions on the basis of forms like the "bike/house" sentence pair with one member of the pair so peculiar,

when more modest forms like the "John/Harry" sentences show little or no difference. It is easy to fault this view, though. The same argument could have been advanced to disprove claims of the existence of subject versus direct object. An arguer might say that the semantic difference between two sentences referring to unusual events, such as *The dog bit the man* and *The man bit the dog*, should not be used for demonstration of subject versus object function. Instead, a sentence with a more commonplace referent like *A dog bit a dog* would be better. And in this latter sentence, reversal of the nominals yields no discernible semantic difference. We would reply, though, that a subject/object distinction does exist in the "dog/dog" sentence. After all, it refers to a situation in which, of two dogs, only one bites the other. In the same way, we would continue, a Figure/Ground distinction does exist in the John/Harry example pair. True, it is harder to see the subject versus direct object difference in the "dog/dog" sentence, or the Figure versus Ground difference in the "John/Harry" sentence pair. But the fact that one has found a sentence in which the difference is hard to discern does not disprove its existence there, nor fault the class of sentences in which the difference is easier to see.

The method of reversing the nominals in a sentence to highlight the existence of Figure and Ground roles in a locative event has so far used an otherwise symmetric relation 'near'. But the same method can apply as well to an asymmetric relation if we consider together that relation and its inverse. An example of such an **inverse pair** is 'above/below', as in (10).

(10) a.   The TV antenna (F) was above the house (G).
      b. ? The house (F) was below the TV antenna (G).

All the same semantic arguments that were advanced earlier for the examples with *near* can be made as well for the pair of forms *above* and *below*.

The Figure/Ground functions extend to some nonphysical situations—for example, ones involving relational states—that behave homologously with the preceding physical situations. Thus, though some might at first claim an invertible symmetry for it, the locative-like sentence in (11a) that expresses a static relational state and that can be taken to derive from something like (11b), is not understood in the same sense as (11c).

(11) a. She resembles him.
      b. She is near him in appearance. / Her appearance is near his appearance.
      c. He resembles her.

All the reasons given above apply: not merely quantity of resemblance is being specified, but, additionally, one of the objects (the second-named one) is taken as a reference point and the other object (the first-named one) is taken to have a variability whose particular value is at issue. As with the "bike" and "house" example for location, this asymmetry can be highlighted by choosing objects with different capacities to serve as a reference point.

(12) a. My sister (F) resembles Madonna (G).
     b. ?Madonna (F) resembles my sister (G).

And the asymmetry is unarguable for an analog to a motion sentence—here, a change of relational state, as seen in (13).

(13) She (F) grew to resemble him (G). ≠ He (F) grew to resemble her (G).

Here, there is an analogy between (1) an object acting as Figure because its location shifts so as to move physically closer to the stationary location of a Ground object, and (2) an object acting as Figure because its appearance changes so as to become more similar to the static appearance of a Ground object.

For a further extension of Figure and Ground from the physical domain, an 'equational' sentence, whose very name implies an assumption of its invertible equivalence, actually shows the same difference between its nominals as to variable versus reference point functions as was seen above for the spatial sentences. This can be seen on semantic inspection of an inverse pair of sentences like that below in an example drawn from comicdom, where it is known that the 'real' identity of the man from Krypton is 'Superman' and his identity of disguise is 'Clark Kent'. It is thus appropriate to treat the former identity as a fixed reference point and the latter identity as displaced therefrom, and inappropriate to treat them in the reverse way, hence the difference in acceptability between the otherwise equivalent inverse sentences in (14).

(14) a. Clark Kent is Superman.
     b. ?Superman is Clark Kent.

So semantically parallel are 'equational' sentences to locative sentences that one could even propose including in their underlying structures a deep preposition homologous with *at*, as if one could say at the surface, for example,

(15) Clark Kent is at Superman.

There is in fact syntactic evidence for something of this sort in English with the preposition *as*, at least for copula sentences where the second nominal expresses the role or function of the first. As (16) shows, an *as* appears overtly in an inverted type of sentence construction, just as an *at* does. But no *as* appears where an *at* does in a noninverted construction, thus yielding the typical form of the English copula construction without any preposition. Yet, the parallelism with *at* might suggest a virtual *as* before the second nominal.

(16) a. Jim is on the throne in the play. ⇒ The play has Jim on the
      throne (in it).
    b. Jim is [as] the king in the play. ⇒ The play has Jim as the king
      (in it).

Some languages do in fact have an adposition at the surface beside the predicate nominal of a copula sentence, like Samoan with its *'o* preposition as in

(17) a. 'o   se atua ia
    (as) a god he
    'He was a god.'
    b. 'o   le agasala 'ea   le tulafono
    (as) the sin   (interrogative) the law
    'Is the law sin?'

and Japanese may include such a form more disguisedly, in its *desu* verb, as in (18).

(18) kore wa   pen desu.
    this (topic-marker) pen is
    'This is a pen.'

This verb in some of its paradigmatic forms clearly breaks up into a postpositional particle *de* plus the verb *aru* (otherwise the 'be-located' verb for inanimate objects). Further, one of the few cases in Japanese in which a nominal is not otherwise followed by a postposition is the construction in which it is followed by the form *desu*, presumably because a postposition is already coalesced within this form. The *de* that is apparently coalesced in *desu* may be identified with the postposition *de* that appears elsewhere with locative or instrumental meaning. This analysis might then make the whole Japanese copula construction with *desu*

parallel to that of Russian, where the predicate nominal is generally in the instrumental case, as in (19).

(19) on byl doktorom (instr).
        he was as a-doctor (doctor-instr).
        'He was a doctor.'

It would be less apt to characterize equational sentences on the model of mathematics than to do the reverse. For, in the standard form of equations, like

(20) $y = 3x^2 + 1$

y, Figure-like, is considered a 'dependent variable' and appears alone on the left, while x, Ground-like, is considered an 'independent variable', appears on the right, and is there grouped together with all operators and modifiers. This arrangement has no purely mathematical significance but rather derives from the same cognitive-semantic processes that determine the form of sentences like those in (21).

(21) The bike is to the left of the house. / Clark Kent is really Superman in disguise.

3   FIGURE AND GROUND IN A COMPLEX SENTENCE

As part of the system of spatiotemporal homology that is found in language (see chapter I-3), the reference of Figure and Ground to the relative location of objects in space can be generalized to the relative location of events in time. Paralleling their characterization earlier for spatial objects, the categories of Figure and Ground can be given the following more specific characterization for temporal events.

(22) *The temporally specific conceptualizations of Figure and Ground in language*
        The Figure is an event whose location in time is conceived as a variable the particular value of which is the relevant issue.
        The Ground is a reference event, one that has a stationary setting relative to a reference frame (generally, the one-dimensional timeline), with respect to which the Figure's temporal location is characterized.

The notions of Figure and Ground may be related to the notions of asserted and presupposed and may in fact be a generalization over them by virtue of referring not only to propositions but also to entities.

The applicability of these semantic categories to temporal structures can be seen in a complex sentence like (23).

(23) He exploded after he touched the button.

This sentence seems to assign a Ground interpretation to the button-touching event—setting it up as a fixed, known reference point—and seems to assign a Figure interpretation to the explosion event—establishing the location in time of this more salient occurrence with respect to the other. As with the earlier demonstration for the "bike/house" example, as well as for the asymmetric "above/below" inverse pair, the suggestion that such differential functional assignments have taken place here is confirmed simply by noting that the inverse sentence

(24) He touched the button before he exploded.

is different in meaning. To this speaker, in fact, it sounds comical, acquiring a suitable seriousness only after the imagining of such special circumstances as an official search into the possible causes of a known death.

The form of the complex sentences cited here—that is, consisting of a main and a dependent clause with subordinating conjunction—can be understood as deriving from a syntactically deeper structure of a different form. This form is more closely reflected in a surface sentence that consists of two nominalized clauses, a verb of occurrence, and a "subordinating preposition" as in the following analogs of the preceding sentences.

(25) a. His exploding (F) occurred after his touching the button (G).
     b. His touching the button (F) occurred before his exploding (G).

This form is homologous with that of a locative spatial sentence. In all three sentence types—the one-clause spatial locative, the one-clause temporal sentence with preposition, and the complex sentence with conjunction—the subject(-like) constituent functions as Figure and the object(-like) constituent functions as Ground.

Since either of the asymmetric relations in an inverse pair specifies the same relational information equally well, the advantage to a language in having lexicalization for both members of the pair—as English has for the relation of 'temporal succession' with *before* and *after*—is precisely that either of the related events can be presented as the Figure. In any language, however, there can be semantic inverse pairs for which simple means of expression exist for only one of the relations (and it may be

deemed that the language's expressive range suffers for the lack of the other).

Such is the case in English—for example, for the asymmetric inverse pair expressing 'temporal inclusion' between a 'point event' and an 'extent event'. When it is the point event that is relatively less known and is to be temporally located with respect to the better-known extent event—specifically, as 'included within' it—the relation has simple lexical representation, as in (26).

(26) Shāh Mat of Persia was assassinated during Caesar's reign. / while Caesar reigned.

But when it is the extent event that is relatively less known and is to be temporally located with respect to a better-known point event—specifically, as 'including' it—English has no simple apt lexical representation, as seen in (27).

(27) ?Shāh Rūkh ruled Persia around/through/before and after Christ's crucifixion.

In the preceding presentation of how English lexicalizes the relations of 'temporal succession' and 'temporal inclusion', it may have seemed that each language with ready means for expressing an asymmetric temporal relation is idiosyncratic in whether it has simple lexical forms for both members of the inverse pair or for only one of the members. However, it may well be that for any asymmetric relation between events, there is some universality as to which of the two directions that the asymmetry can be conceptualized in has priority. In fact, probably for every inverse-relation pair, one of two universal statements holds, either the implicational universal in (28a) or the absolute universal in (28b).

(28) a. Only where a language has some lexical means—not more complex but either equally complex or simpler means for the specification of an asymmetric relation R between events—does it also have means for the specification of the inverse relation R_{INV}.

   b. Whereas a language may have lexical means for the specification of the asymmetric relation R between events, it never has such for the inverse relation R_{INV}.

An example of an asymmetric relation to which the implicational universal statement (28a) seems to apply is in fact that of 'temporal succession', for which the concept 'after' has priority as the basic member R of

the inverse pair.[4] English, as we saw, has the lexical means, and equally simple means, for the expression both of this relation and of its inverse in the words *after* and *before*. Atsugewi for one, however, expresses the notion 'after' simply and directly with a verb suffix (akin in function to Russian's "past gerundive" ending), as in (29).

(29) Having-eaten, we left.

But it expresses the notion 'before' in a more complex and indirect way— by the addition of two independent words to the 'after' verb form—as in (30), which is the inverse counterpart of the preceding.

(30) Still not having-left, we ate.

The implicational universal (28a), if it applies to 'after' versus 'before', thus implies that a language may, like English, have means for expressing 'before' equally simple as for 'after', or may, like Atsugewi, have less direct means for expressing 'before' than 'after', but that no language will have simpler and more direct means for expressing 'before' than for expressing 'after'.

An example of an asymmetric relation to which the absolute universal statement (28b) seems to apply is in fact 'temporal inclusion', for which the notion 'included within' has primacy over the inverse notion 'including'. As we saw, English accords with this pattern by lexicalizing the 'included within' notion in the forms *during* and *while*, but by having no lexicalization of the 'including' notion. And a spot-check shows that other languages follow this pattern as well.

Another example of an asymmetric relation to which the second universal statement seems to apply is the notion of "continuous concurrence"—that is, 'concurrence of one temporal extent with another'—as expressed, for example, by English *(all) during* and *the whole time (that)* or *while*. Since this relation may at first seem symmetric (aside from issues of Figure and Ground), it first behooves us to show that it is not. This can be done by demonstrating that there is a difference in the characteristics required of the first and of the second events that may comprise the terms of the relation, and that therefore the terms cannot always be acceptably reversed. The following sentences reveal that for the second event in the relation, the extent of time occupied is necessarily bounded at both ends, since a second-position clause specifying an event that is inherently un-bounded (at either end), such as the state of being dead, creates an unac-ceptable sentence.

(31) She was studying in an American college the whole time that her
      father in Iran was ill. / *her father in Iran was dead.

On the other hand, the first event in the relation need not be bounded at
both ends, as is shown by putting into first position the same clause
specifying an inherently unbounded event, and this time getting an
acceptable sentence.

(32) Her father in Iran was sick/dead the whole time that she was
      studying in an American college (but she didn't know it).

The difference between the first event and the second event of the relation
as to its need to be temporally bounded is schematized in the accom-
panying diagram.

(33)
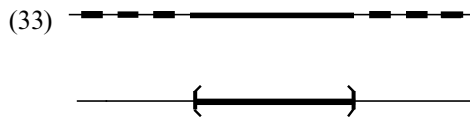
Given this first demonstration of the asymmetry of the notion 'concur-
rence of one temporal extent with another', the absolute universal's
holding for this relation would mean that while many languages may
have a direct means for expressing the equivalent of (34a), none will have
the means for expressing (34b).

(34) a.   Her father in Iran was dead while she was studying in an
           American college (but she didn't know it).
      b.   *She was studying in an American college while$_{INV}$ her father in
           Iran was dead.

   There is a second demonstration of the asymmetry of the relation
'concurrence of one temporal extent with another'. Of the two events
comprising the terms of this relation, if the possibility of occurrence of
one event is contingent on the occurrence of the other event, which is
therefore determinative, it is only the contingent event that can function
as the first term of the relation, while the determinative event must func-
tion as its second term. For example, since the act of dreaming is contin-
gent on the state of being asleep, a clause specifying the former can
acceptably appear only in first position in a sentence that expresses the
occurrence, extensionality, and contemporaneousness of the two events.

(35) a.   He dreamt while he slept.
      b.   *He slept while he dreamt.

Note that there is no general constraint against referring to an event of dreaming in a subordinate clause, since it can occur there as long as it is not contingent on the main clause event.

(36) He twitched while he dreamt.

If the absolute universal holds for this redemonstrately asymmetric relation 'concurrence of one temporal extent with another', it would mean that no language has a lexical equivalent for $while_{INV}$ such that it can express the equivalent of

(37) *He slept $while_{INV}$ he dreamt.[5]

and indeed, in at least the several languages I have asked for such a form in, none exists.

It can be clear only after an extensive survey of languages whether there exists any universal bias toward one as against the other relation of asymmetric inverse pairs, like the ones discussed above as well as of other pair types. It would have to be determined whether such bias is total or is proportional, involving relative simplicity of expression. But it is tentatively suggested that such a survey will reveal that sentences like the upper ones of the following pairs (merely an illustrative selection) represent the favored, or unmarked, relations of inverse pairs. And the survey might reveal that sentences like the lower ones in the pairs represent relations—the corresponding inverses—that are either never or not more simply expressed. In fact, in most cases here, these can be indicated only by specially devised phrases. The illustrations of interevent relations that follow are grouped by semantic type, and the examples treated earlier in the text are included under their type. Where English permits it, we represent a subordinated event both by a subordinating conjunction with a clause and by a subordinating preposition with a nominal.[6]

(38) *Possibly universal unidirectionality in Figure|Ground assignment to the events in an interevent relation*
       a. *Temporal sequence (with causality)*
          i.   She departed *after* his arrival.|*after* he arrived.
               He arrived *before* her departure.|*before* she departed.
          ii. We stayed home *because of* his arrival.|*because* he had arrived.
               *He arrived *to-the-occasioning-of-(the-decision-of)* our staying home.

iii.   We went out *despite* his arrival. / *even though* he had arrived.

      *He arrived *in-ineffective-counteracting-of-(the-decision-of)* our going out.

iv.   The door slammed shut *from* the wind blowing on it.

      *The wind blew on the door *to* its slamming shut.

v.   I broke the window *by* leaning against it.

      *I leaned against the window *to* breaking it.

vi.   We'll stay home *in the event of* his arrival. / if he arrives.

      *He will arrive *as-a-potential-event-occasioning* our staying home.

vii.   We'll go out *except in the event of* his arrival. / *unless he arrives*.

      He will arrive as-the-only-potential-event-counteracting our going out.

viii.   She awoke *upon* his arrival. / *when* he arrived.

      *He arrived *immediately-before-(and-occasioning)* her awakening.

ix.   She slept *until* his arrival. / *until* he arrived.

      *He arrived *immediately-before-(and-occasioning)-the-end-of* her sleeping.

b. *Temporal inclusion*

x.   He had two affairs *during* his marriage. / *while* he was married.

      *He was married *through-a-period-containing* two affairs of his/his having two affairs.

c. *Contingency*

xi.   He dreamt *(all) during* his sleep. / *while*/*the whole time* he slept.

      *He slept *(all during$_{INV}$* his dreaming. / *while$_{INV}$* he dreamt.)

d. *Substitution*

xii.   He's playing *instead of*/*rather than* working.

      *He's not working *in-replacement-by* playing.

An inspection of the biases in this array reveals that each is not simply peculiar to its own relation pair, but that they generally follow a pattern. Consider those pairs—gathered together in (38a)—for which the two

related events are temporally sequential with respect to each other. With the exception of the 'until'-type in (38aix) (but see below), the favored relation has the earlier-occurring event in the subordinate clause and the later-occurring event in the main clause, where they function, respectively, as Ground and Figure. This observation suggests that the following possibly universal tendency may exist for language.

(39) *Sequence principle*
    The unmarked (or only possible) linguistic expression for any particular relation between two events in temporal sequence treats the earlier event as a reference point, or Ground, and the later event as requiring referencing—that is, as the Figure. Where the complete syntactic form is a full complex sentence, the two events are in the subordinate and the main clause, respectively.

Note that the semantic relationships stated in the principle are the determinative factors and can apply even where the syntactic form is not that of a full complex sentence. In fact, there are certain variant syntactic forms that nevertheless basically conform to the semantic bias. These include, for example, syntactic forms in which what would otherwise be the subordinate clause appears as a pronoun, as in (40a), is implicit or deleted, as in (40b), or is conflated into the main clause, as in (40c).

(40) a. He arrived; she left despite that [= his arriving]. (*see chapter I-6*)
    b. She broke the window [by ACTing ON it with SOMETHING].
                                                            (*see chapter I-8*)
    c. I kicked the ball over the fence.
        [= I MOVED the ball over the fence by kicking it.]
                                                            (*see chapter II-1*)

All the relation types in (38a) with events in sequence can, and some chiefly do, also express causality between the events. A pattern can be discerned here, too. The favored pair member has the causing event in its subordinate clause and the resulting event in the main clause. To be sure, in the physical world, cause and result correlate with earlier and later, and if linguistic conceptualizations always followed physics, this linguistic finding about causality would be predictable from the previous one about sequentiality. They do not, however, and so the observation about causality (demonstrated in more detail in chapter I-8) prompts the following independent statement of suggested universal tendency.

(41) *Cause-result principle*

The unmarked (or only possible) linguistic expression for a causal relation between two events treats the causing event as Ground and the resulting event as Figure. Where the complete syntactic form is a full complex sentence, the two events are in the subordinate and the main clause, respectively.

The problem of the apparently exceptional sequential properties of *until* may find resolution by observation of its causal properties. For when the relation has a causal implication—as it can in the top sentence of (38aix)—it follows the general pattern at least in part: The causing event—'his arrival' in (38aix)—is expressed in the subordinate clause. Now, semantically, what this event causes is *not* the event overtly expressed in the main clause—'her sleeping' in (38aix)—but rather the *end* of that event. And temporally, that end is indeed after the causing event. From this, we may infer a deeper precursor for the *until* forms, one for which both the clauses conform to both the universal tendencies. Such a deeper form, if exemplified for (38aix), would look like the form in (42).

(42) [THE END OF [she slept]] OCCUR AT [he arrived].

This form would then be taken to derive into either alternative in (43)

(43) a. [she slept] END AT [he arrived]
b. [she slept] EXTEND TO [he arrived]

which would in turn give rise to the roughly equivalent surface sentences in (44).

(44) a. She stopped sleeping when he arrived.
b. She slept (continued sleeping) until he arrived.

Principles comparable to the preceding two on sequence and cause may be at work as well for the types of forms in (38b) to (38d). Thus, the following proposed principle may govern the asymmetric relation of 'temporal inclusion' between two events, as this was illustrated in (38bx).

(45) *Inclusion principle*

A larger, temporally containing event acts as Ground (in the subordinate clause) with respect to a contained event as Figure (in the main clause).

The following principle may govern the asymmetric relation of 'contingency' between two events, as this was illustrated in (38cxi).

(46) *Contingency principle*
An event that is necessary for or determinative of a second event acts as Ground (in the subordinate clause) with respect to the second event that is contingent or dependent on it, which acts as Figure (in the main clause).

And the following principle may govern the asymmetric relation of 'substitution' between two events, as this was illustrated in (38dxii).

(47) *Substitution principle*
An expected but nonoccurring event acts as Ground (in the subordinate clause) with respect to an unexpected but occurring substitute event, which acts as Figure (in the main clause).

If these universal tendencies prove to be the case, we can speculate on deeper reasons for them. Assuming that linguistic universals reflect innate organizational and functional characteristics of the language-related portions of the brain, we may suppose that some of these characteristics are continuous with those of more general cognition-related areas. Let us consider here only the first universal about sequential events from this perspective.

At times, a newly cognized item will illuminate or necessitate the rearrangement of items already in memory. But generally, cognitive effects seem to operate in the other direction: items already in memory constitute the basis, afford the analytic categories, and function as the reference points by which a newly cognized item is assessed, characterized, and analyzed. In particular, of two nonconcurrent events, both cognized, the earlier one will, of course, already be in memory when the later one is newly occurrent, and so is generally to be used as part basis for the latter's assessment. The parallelism between this cognitive characteristic—the earlier used as basis for assessing the later—and the linguistic characteristic—earlier and later treated semantically/syntactically as Ground/subordinate clause and Figure/main clause, respectively—suggests the following possibility. This feature of cognitive functioning may well have become incorporated in the innate structuring for conceptual/grammatical organization of the brain's language system, as the latter evolved.[7]

4   FIGURE AND GROUND IN A SELF-REFERENCING EVENT

Starting with the basic Figure-Ground Motion event that was first described, we can by stages build up to a more complex event, that of **self-**

referencing Motion and the way that Figure and Ground function therein. (See Talmy 1972 and chapter I-8 for details.) To begin with, the situation specified by the sentence

(48) The red leaf drifted toward the brown leaf.

is to be understood by the analysis developed in this chapter as a motion event in which the red leaf, as Figure, moves with respect to the brown leaf, as Ground. Similarly, the event specified by

(49) The brown leaf drifted toward the red leaf.

is a motion event in which the brown leaf, as Figure, moves with respect to the red leaf, as Ground.

Consider now the complex situation that consists of the previous two events taking place concurrently—that is, where, of the two leaves, each, as Figure, moves with respect to the other, as Ground. This situation can be represented by each of the successively more-derived sentences in (50).

(50) a. The red leaf drifted toward the brown leaf and (at the same time) the brown leaf drifted toward the red leaf.
     b. *The red leaf and the brown leaf drifted (respectively) toward the brown leaf and the red leaf.
     c. The red leaf and the brown leaf drifted toward each other.
     d. The red leaf and the brown leaf drifted together.
     e. The two leaves drifted together.

Such a situation, although analyzable—and just now treated—as conjunctional and hence complex, may also be analyzed as a single motion event in which a set of objects acting as a **composite Figure** moves with respect to a set of objects acting as a "composite Ground"—symbolizable as F' and G'. In addition here, there is the special circumstance that the Figure and the Ground are the same objects (i.e., the Figure constitutes its own Ground), so that the new situation can be interpreted as a simple motion event consisting of a set of objects, as composite Figure, moving with respect to itself, as composite Ground. It is for this reason that we refer to a situation analyzed in this way as a **self-referencing Motion event**.

We next come to the case of a Motion event that, in order for it to be represented by a syntactic structure, can be treated *only* as a self-referencing Motion event and not also as a conjunction of simple Motion events. We have such a situation where the Figure objects (and, hence, the

Ground objects) do not admit of a definite specification as to number (such as 'two') as in the preceding case. Rather, they are "nonnumerate" —that is, of a number that is unknown, perhaps because it is relatively large. Consequently the spatial relations among the objects can be specified not as a sum of simple relations between, say, pairs of objects, but only, when considered together as a Gestalt-like whole, specifically, as a **configuration**. Examples include the following.

(51) a. The leaves floated into a circle.
     b. The leaves floated out of the circle [that they were in].
     c. The leaves floated in a circle.
   [in the locative sense, hence, like: The pens lay in a circle.]

We now proceed to the case of a self-referencing Motion event that, in order for it to be amenable to representation by a syntactic structure, must be treated at a still higher level of Gestalt formation than in the case just considered. We have such a situation where the Figure "objects" (and, hence, Ground "objects") not only admit of no definite specification as to number but also of none as to identity (such as that of 'leaves'). Rather, they are "nondiscrete": the continuous so-conceivable "components" of a single larger object that *is* specifiable as to identity. Consequently, a spatial relation can be represented here not as a configuration of some composite Figure/Ground objects, but only as the **shape** of the single larger object. On this view, it is the imagined components of the larger object that are the real composite Figure-Ground—that is, that for all their non-discreteness must nevertheless be understood as the 'objects' moving or located with respect to each other, even though it is only the whole that can have a lexical item to specify it. Accordingly, the semantic functions performed by the whole cannot be considered those of "Figure" and "Ground," but can be given the new terms **meta-Figure** and **meta-Ground**, to be symbolized as F'' and G''. An example of such a meta-Figure and meta-Ground is the balloon in (52).

(52) a. The balloon puffed out. / The balloon expanded into a round
        shape.
     b. The balloon shrank in. / The balloon shrank into a tube shape.
   c. The balloon is round.

Here, *the balloon* may need to be understood at a more analytic level. For the motion cases of (52a) and (52b), the nondiscrete components of the balloon, as composite Figure, move away from or toward each other, as

composite Ground—as suggested by the Figure in (53a). This finer level of granularity may be conceptually present even though the event (for it to be expressible by a syntactic structure) must be treated at the next higher level of organization, where the whole of the balloon, as meta-Figure, moves out from or in on itself, as meta-Ground—as suggested by the Figure in (53b).

(53)
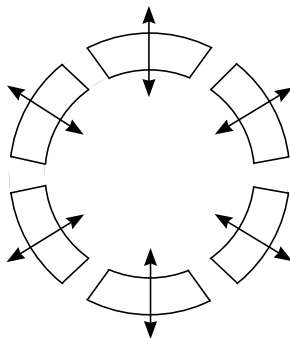
a.
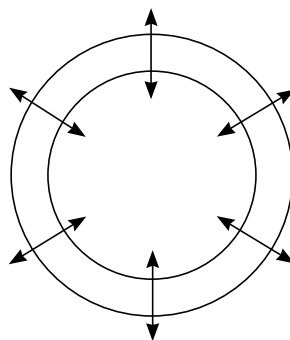
b.

Similarly, the self-referencing locative event of (52c) may need to be understood in terms of component parts relating to each other in a configuration—as if one could represent this event as *The components of the balloon are in [the configuration of] a sphere*—even though it is only the meta-Figure as a whole to which the shape term *round* can be applied.

Note that a language can have many lexical predicates that take a meta-Figure as subject or direct object and that express its self-referencing Motion. And this Motion need not be as geometrically simple as in the

preceding "balloon" examples. Thus, the English verbs in the following examples all represent complex self-referencing motion for their meta-Figure subjects: *The vase broke/shattered*, *The pavement buckled*, *The flag furled up*, *The can crumpled under the weight*, *The banner waved in the wind*. In fact, the preceding considerations allow us in part to relate the "Figure" concept of our analysis to the "Patient" concept of the customary analysis. The kind of Patient that consists of an object moving or located in space is simply our Figure. But what is often thought to be the most prototypical kind of Patient, an object undergoing a change of shape, as in breaking or crumpling, is our meta-Figure.

5   FURTHER FIGURE AND GROUND PROPERTIES

Figure and Ground properties can involve semantic factors beyond those treated so far—such as perspective point, multipart complexity, incorporation into action or direction, indeterminacy, and multiple embedding—each associated with certain syntactic patterns.

5.1   The Grammatical Relations of Figure and Ground

The principles in (2) that determine Figure/Ground functions can be used to ascertain the syntactic constituents in which the Figure and the Ground are expressed. In the sentences of (6) and (8), the Figure and Ground functions of the two nominals vary in correlation with their grammatical relation: subject as Figure and oblique object as Ground. But in other cases, the nominals keep the same semantic function, even through changes in grammatical relation, as the sentences in (54) show.

(54) a. Smoke (F) slowly filled the room (G).
       b. The room (G) slowly filled with smoke (F).

In both these sentences, *the room* retains its Ground function as reference entity or **anchor** that serves to characterize the path of *the smoke*, with its Figure function as variably located entity.

There is clearly a semantic difference between such inverse forms, but it seems to involve other factors than variable-point versus reference-point functions. One such factor may be "perspective point": where one places one's mental eyes to look out over the rest of the scene in reference (see chapter I-1). Thus, for sentence (54a), one may feel oneself riding the crest of an advancing smoke wave, while for sentence (54b), one might feel oneself positioned, say, at the room's rear watching the wave approach.

Sentences like these evidence a possible universal property: in their basic expression, the Figure has syntactic precedence over the Ground. For nominals in a single clause, this precedence consists of expression along a case hierarchy. In a nonagentive clause, the Figure is subject and the Ground is (oblique) object. In an agentive clause, where the Agent is subject, the Figure is direct object and the Ground is oblique object. When applied to the clauses in a complex sentence, the precedence principle yields the Figure as the main clause and the Ground as the subordinate clause. By the interpretation in (25) of a complex sentence of this sort as being based on a locative-type sentence with subject and oblique object, the statement of precedence for a complex sentence reduces to that for a single clause. Any Figure/Ground assignments other than these are taken to be nonbasic or derived.

The evidence for this precedence principle is, first, that sentences of the locative type in (5) regularly assign Figure and Ground functions to the subject and object, respectively, regardless of the characteristics of the nominals' referents. Second, sentences of the motion type in (54) that permit a reverse-precedence form are rather atypical. The most characteristic motion sentences exist only in the basic-precedence form with Figure as subject and Ground as object. Thus, the basic-precedence form in (55a) has no inverse counterpart like that in (55b).

(55) a.   The ball (F) rolled into the box (G).
      b. *The box (G) rolled (in) with the ball (F).

Third, in sentence types that do permit inverse forms with reverse Figure-Ground precedence, the normal precedence form is still basic. This is shown by the fact that the normal precedence form permits a range of path types, as in (56a). But the inverse form neutralizes such distinctions down to a single marker, as seen in (56b). (In English, this marker is generally *with* for all paths with a TO vector, and *of* for all paths with a FROM vector.)

(56) a. I (A) loaded hay (F) (up/down) into/onto the truck (G).
      b. I (A) loaded the truck (G) with hay (F).

In markedness theory, it is the unmarked form—that is, the form that is basic with respect to a particular factor—that permits other factors to have a greater range of variation.

Thus, where we find cases allowing both precedence orders for both the nonagentive and the agentive—as with the verbs *suffuse* and *drain*—we

consider half of the four forms to have basic precedence and half to have the nonbasic reverse precedence.[8]

(57) *Basic:* Perfume (F) slowly suffused through the room (G).
  Reverse: The room (G) slowly suffused with perfume (F).
  Basic: I (A) slowly suffused perfume (F) through the room (G).
  Reverse: I (A) slowly suffused the room (G) with perfume (F).
  Basic: The gasoline (F) slowly drained from the fuel tank (G).
  Reverse: The fuel tank (G) slowly drained of gasoline (F).
  Basic: I (A) slowly drained the gasoline (F) from the fuel tank (G).
  Reverse: I (A) slowly drained the fuel tank (G) of gasoline (F).

5.2 Complex Ground in a Complex Constituent

A sentence like

(58) The pen rolled off the table onto the floor.

is not taken to specify two Paths and two Grounds. Rather, it refers to an event in which the Figure object follows a single Path with respect to a single Ground, but where this Path and Ground are complex. In most cases, these complex referents are not amenable to representation by a simplex constituent—that is, by a single prepositional phrase consisting of a single preposition and a single nominal. In such cases, a language may have syntactic provision for a complex construction to represent the conceptual complex, as English does above.

Some Path and Ground cases of this kind can be represented syntactically either by a single prepositional phrase or by a complex, as in (59).

(59) a. I swam from one side to the other side of the river in one minute.
  b. I swam across the river in one minute.

Such cases demonstrate directly how it might be semantically reasonable to construe the reference of a syntactic complex as a single, albeit complex, Path + Ground.

5.3 Figure and Ground in Constituents Other Than Nominals

The Figure and the Ground of a Motion event need not be represented solely by nominals. They can also be represented in other grammatical

categories. For example, in its most characteristic pattern, Atsugewi represents the Figure in the verb root and the Ground in a verb suffix (one of a set of suffixes that express Path + Ground together), as detailed in chapters II-1 and II-2. And English has certain minor systems of verbs that incorporate the Figure—for example, to *pit, skin, shave, tag* (as in *I pitted the cherry* or *I tagged the suitcase*)—as well as of verbs that incorporate the Ground, like to *shelve, box, quarry* (as in *I shelved the books* or *They quarried the marble*).

5.4 Indeterminacy of Figure/Ground Assignment

Note that a language can have syntactic formations that represent a motion event between two objects but that leave indeterminate which of the two objects is the moving Figure and which the stationary Ground, or indeed whether both objects are Figures moving with respect to their opposites as Grounds. Thus, in the English sentence

(60) I sheathed my sword.

it is not clear whether I moved my sword into its sheath, moved the sheath over the sword, or moved them both together at the same time.

5.5 Embedding of Figure/Ground Relations

A single clause can represent the semantic complex of one Figure/Ground relationship embedded within a second one, and when it does, some of the nominals within that clause can serve dual functions. In this regard, consider the sentence *The lion chased the gazelle through the forest*. In the first instance here, the lion functions as Figure with respect to the gazelle as Ground. If they both run at the same speed, then in fact this particular Figure-Ground relation is static. Further, however, the pair of animals together functions as a composite Figure with respect to the forest as Ground. In this case, the Figure moves with respect to the Ground. Here, then, the gazelle functions as the Ground with respect to the lion, but it also functions as part of the composite Figure with respect to the forest.

A comparable embedding is represented in the sentence *The lion slowly gained on the gazelle* as well as in the sentence *The lion caught up with/ overtook the gazelle*. Once again, the lion is Figure with respect to the gazelle as Ground, while the pair of animals together moves as Figure with respect to some background as Ground—though this latter in the present sentences is not readily expressible. Here, however, the Figure-Ground relationship of the lion to the gazelle is not static, but rather

motile, since the lion moves toward or up to the gazelle. Again, the gazelle serves a dual function with respect to Figure and Ground roles.

6   ROLE DERIVATION: FIGURE OF THE CAUSING EVENT = INSTRUMENT OF THE CAUSATIVE SITUATION

The system set forth here includes provision for the derivation of semantic functions like those of Figure and Ground. Here, "derivation" means that a nonbasic, higher-level semantic function permits construal solely in terms of basic functions related to each other within a semantic structure. For a particular case, the entity that functions as the Figure in a causing event is understood to function as the "Instrument" with respect to a whole causative situation. As detailed in chapter I-8, a basic causative situation consists of two events where one event occurs as the result of the other. The former is the resulting event and the latter is the causing event. The resulting event functions as the Figure in the whole situation, and the causing event functions as Ground. These semantic categories and relations can be represented as diagrammed in (61).

(61)

$$
\begin{array}{cccc}
& & S_3 & \\
\end{array}
$$

NP (F)	V	P	NP (G)
S_2 (resulting event)	RESULT	FROM	S_1 (causing event)
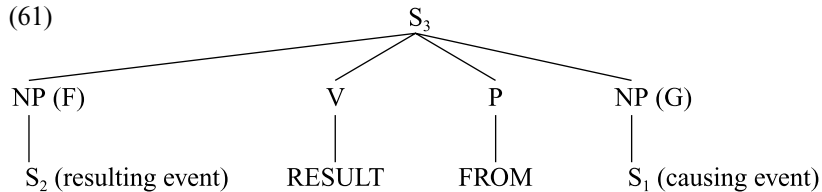
Within such a structure, an example of the derivation (or reinterpretation) of a lower-level Figure into a higher-level Instrument is the following.

(62) S_1: A baseball (F_1) sailed into the aerial (G_1)
     S_2: The aerial (F_2) toppled off the roof (G_2).
     S_3: The aerial ($F_2 \Rightarrow F_3$) toppled off the roof ($G_2 \Rightarrow G_3$)
     from a baseball ($F_1 \Rightarrow I_3$) sailing into it ($G_1 = F_3$).

Here, the referent of *a baseball* functions as the Figure within its own lower-level event (a causing event), *A baseball sailed into the aerial*. But it functions as the Instrument, marked by the preposition *from*, within the larger causative situation, *The aerial toppled off the roof from a baseball sailing into it*. This Instrument function is clearer when the causing event is represented as a relative clause, as in *The aerial toppled off the roof from a baseball that sailed into it*. And its Instrument function becomes

unambiguous when an analog of this structure is embedded within an agentive matrix. In this case, the previous marker *from* is replaced by the more familiar Instrument marker *with*, as in *I toppled the aerial off the roof with a baseball (that I threw at it)*.

The preceding account may only hold for the most prototypical conception of an Instrument of a whole causative situation: that it is the Figure of the causing event. But the conception of Instrument may also cover elements with other semantic relationships. Thus, an element that does not impinge on the resulting event's Figure directly, causing it to move, but that forms part of the complex Ground with respect to which the resulting event's Figure moves, may also be marked with a *with*-type form. In some languages, such *with*-type marking is the only option. For such languages, the concept of Instrument seems to be more generic, applying to a certain range of elements within the whole causative situation to which the resulting event's Figure relates. But English typically prefers, and in some cases only allows, a spatial preposition indicating the Path relation of the resulting event's Figure to the nonprototypcial element. Such a space-prepositional option is generally not available for the prototype case of a causing-event Figure functioning as Instrument. Thus, English largely maintains as a distinct category what is here posited as the prototype Instrument, the causing-event Figure.

To illustrate, portions of the food items in the sentences of (63) are the Figure of the resulting event and of the whole causal situation, since they move from their pooled location through space into Bobby's mouth. The spoon in (63a) is the Figure of the causing event, directly causing a portion of food to undergo its motion, and hence is a prototype case of Instrument. English here can felicitously use only *with*. But the straw in (63b) does not directly cause the milk to move—suction does—and only directs the path of the milk as a conduit, thus serving as part of a Ground complex. Accordingly, this element can be marked with a relevant spatial preposition, *through*, here in addition to *with*, extended to cover this nonprototypical case. In (63c) and (63d), the plate and the bowl again do not directly cause the food to move—presumably a piece of silverware does that—but only constitute a part of the Ground complex with respect to which the food moves. Again, as such Ground elements, they can take the relevant spatial prepositions, but now resist a *with*.

(63) a. Bobby eats his stew with a spoon.
      b. Bobby drinks his milk through/with a straw.

    c. Bobby must learn to eat his stew off of/?with a plate.
    d. Bobby must stop eating his stew out of/??with a bowl.

By contrast, a causing-event Figure that functions as a prototypical Instrument for the whole causal situation generally cannot take a spatial preposition as an alternative to a *with*, as seen in (64).

(64) a. I pushed the block across the table with/*ahead of a pool cue.
    b. I sliced the salami with/*under a knife.

7 COMPARISON OF FIGURE AND GROUND WITH OTHER PROPOSED CASE SYSTEMS

To place the present study within a contrastive framework, we first compare Fillmore's (1968) case system with our system and point out certain difficulties with the former that are overcome by the latter.

In Fillmore's system, several problems arise out of the fact that all the cases are ranged together on a single level without subgrouping or some other index of abstracted partial commonality. Thus, first, there is nothing explicit in Fillmore's system to show that six of his cases

(65) Source, Goal, Path, Locative, Patient, Instrument

have in common the property of pertaining to objects moving or located with respect to one another—as distinguished, for example, from Agent. By contrast, our system abstracts that property out into its integral and embeddable unit, the motion/location event, in which there appear only those case roles that together are equivalent to the above set of six.

Second, there is nothing in Fillmore's system to show that the first four of his cases above, Source, Goal, Path, and Locative, have in common a property—their function as reference point—not shared by any other case, such as Patient, Instrument, or for that matter, Agent. By contrast, our system abstracts out precisely what is common to these cases, their reference-point function, and sets that up in its own right as the pertinent role notion, Ground. The reason for this difficulty in the Fillmorean system is that it incorporates certain spatiodirectional specifics in its very case notions themselves. It builds the spatiodirectional notion 'from' into its Source case, 'to' into Goal, 'along' and so on into Path, and 'at' into Locative. This difficulty does not arise in our system, because all spatio-directional specifics are abstracted out into an independent category,

Path. In particular, the 'from/to/along/at' notions that inform Fillmore's spatial cases are placed together in the **Vector** component of our Path category (see chapter II-1). Once such spatiodirectional notions are removed from Fillmore's cases, what is left is their single common reference-point role—that is, our Ground case.

Third, there is nothing in Fillmore's system to show that of the preceding four related cases, the first three, Source, Goal, Path, have in common a property that is counterposed by a property of the fourth case, Locative. The former three cases pertain to motion, while the latter case pertains to stationariness. In our system, this pair of motive states as a set is abstracted out as a category in its own right, (Fact of) Motion. Each state of Motion is individually designated by a deep verb, MOVE or BE_{LOC}. And the counterposed complementarity of the two states is captured by the condition that one and only one of the two deep verbs must appear in the syntactic structure that represents a Motion event.

Several further problems in Fillmore's system are associated with the fact that it incorporates spatiodirectional notions into its case notions. First, although the Fillmorean spatial cases differ from each other with respect to the Vector notions 'to/from/along/at', they can be used alike to pertain to the conformational portion of spatiodirectional notions. This conformational portion includes such concepts as 'surface' or 'interior'. Thus, for Fillmore, the cases Locative, Goal, and Source would pertain respectively to the three occurrences of the noun *box* in *on the box/onto the box/off of the box*, as well as to the three occurrences of that noun in *in the box/into the box/out of the box*. But the Fillmorean system has no provision for capturing the conformational commonality that exists across the first three phrases, namely, that of a 'surface', nor the commonality across the second three phrases, that of 'interior'. By contrast, our system abstracts out spatiodirectional characteristics of this sort and places them together in the **Conformation** component of its Path category.

Second, Fillmore's use of spatiodirectional features as the basis for setting up distinct cases entails the problem as to which features of what degree of fineness should be used and, correlatively, how many cases of what sort there should be. For example, the spatiodirectional features 'from', 'to', and 'along' seem to be the differential bases for Fillmore's having set up the cases Source, Goal, and Path, which, accordingly, well suit nominals like the final ones in (66)

(66)   The ball rolled
 Source: out of the bathroom/off the table/away from the sofa.
 Goal: into the kitchen/onto the carpet/up to the wall.
 Path: along the hallway.

But to what cases—the preceding ones or some new ones—are we to assign the final nominals in (67)?

(67) The ball rolled across the crack/past the TV/around the lamp.

Likewise, as seen earlier, the same issue is raised by the very applicability of a case like Goal to many distinct conformational forms like *into N*, *onto N*, and *up to N*. Should there not be as many cases here as distinct expressions? Note that the issue here of how fine to set the case-distinguishing features causes special problems in the context of the remainder of Fillmore's case system. For other cases are associated with only a single meaning-preserving marker, as Instrument is with *with*, whereas the cases here are associated with many different markers that add distinctions of meaning.

Our system's Path category must face comparable issues—that is, how to represent all the distinctions and capture all the generalizations relevant to spatiodirectional characteristics. But it has more, and more flexible, internal machinery to do so, not the single dimension of noun cases that must also suit other, quite distinct functions.

The following formula for a Motion event in our system includes indication of all the features discussed so far in this section that render this system perhaps truer to the structure of language than Fillmore's system.[9]

(68) [Figure Motion $\{\text{MOVE/BE}_{\text{LOC}}\}$ Path
 (= Vector + Conformation + Deictic) {path/site}
 Ground]$_{\text{Motion event}}$

As for other comparisons, our Figure is essentially the same as Gruber's (1965) "theme," but Gruber, like Fillmore, did not abstract out a semantic form like our Ground. Langacker's (1987) "trajector" and "landmark" are highly comparable to our Figure and Ground and, specifically, his landmark has the same abstractive advantages that Ground does over the systems of Gruber and Fillmore.

8   CHILD ACQUISITION OF FIGURE/GROUND PATTERNS

Melissa Bowerman (personal communication) has found the linguistic Figure-Ground notions relevant to interpreting certain data from her

daughter Christy from 3;6 to 4;6 years of age. When Christy at 3;6 first started using verbs like *hit, bump*, and *touch* with explicit nominals for both Figure and Ground, she normalized their expression to the predominant pattern. Instead of the rarer pattern required by these verbs: "I hit/bumped/touched G with F"—that is, with inverted Ground-Figure precedence, as discussed in section 5—she produced forms of the type "I hit/bumped/touched F to G." Sometimes this involved undoing certain one-object forms of the type "I hit/bumped/touched G," which she had earlier produced correctly. There was no issue of her having difficulty in introducing a *with* phrase, for she had been correctly producing instrumental *with*s from age two. Bowerman hypothesizes that the child at the later age pieces together the notions of Figure and Ground and the main pattern for their order and grammatical relations, and then overgeneralizes this. Some examples of utterances (C = Christy, M = mother) are included in (69).

(69) a. I hitted this into my neck. *(After bumping self with toy.)*
     b. Feel your hand to that. *(= Feel that with your hand. C instructing M to put her hand over one end of a hose, then C blows through other end.)*

Her other daughter, Eva, made the same reformulations, including ones for *fill*:

(70) a. My other hand's not yukky. See? 'Cause I'm gonna touch it on your pants.
     b. This is something we can fill some stuff up in. *(Bringing basket to C.)*
     c. M: You can get a baggie out of the drawer.
        C: Then fill some marshmallows up in it?

Notes

1. This chapter is a greatly revised version of Talmy 1978a, itself a revised and amplified version of Talmy 1975a.

2. Though greatly elaborated in chapter II-1, the following background sketch can help in a reading of this chapter by itself. Insofar as they pertain to moving or located objects, Figure and Ground are two components out of four that make up the next more complex unit, an event of motion or location. The other two components are the **Path**—the particular course followed or site occupied by the Figure with respect to the Ground—and the **Fact of Motion**, which has two states, motion or stationariness. The capitalized term **Motion** is used to refer

equally to either motion or stationariness, and the capitalized term **Path** is used equally for either a path or a site. Outside the Motion event proper, the Figure can concurrently be in some independent activity or state, which bears the relation of "Manner" to the first event.

Thus, in (1), the Path is specified by *off* and *on* (as being, respectively, 'from a point of the surface of' and 'at a point of the surface of'). The Fact of Motion is specified by *rolled* and *lay* (as 'moved' and 'was located'). And a Manner is simultaneously specified by these same words (as 'spinning about the axis [the while]' and 'in horizontal contact along its length [the while]'.

3. Other interpretations are possible. One is that the Figure object alone serves as the psychological figure, while the combination of the Ground object and the background together serves as the psychological ground. Another interpretation is that the linguistic Figure and Ground are two distinct psychological figures against the background as psychological ground.

4. The remarks made here about particular relations that exemplify the universals are not based on a survey of many languages but rather on a spot-check, and are accordingly to be considered heuristic, pointing to a direction for investigation.

5. Not to be confused with this apparently universally lacking conjunctional form is an often gerundive or participial type of form present in many languages, including English, which arises secondarily by a process I have called "copy-clefting" (see chapter I-6).

He slept and he dreamt the while. ⇒ He slept, dreaming (the while).

6. This investigation, it should be reemphasized, only involves the expression of relationships by a subordinator in a complex sentence. Coordinate sentences do exist that express the related propositions in the same order as in the lower pair members. Thus, there are, for example, the following counterpart sentences.

b′. He arrived, (and) so we stayed home.
c′. He arrived, but we went out anyway.
l′. He's not working, but playing instead.

But even these forms are not countercases to the observation of universal bias toward one relation of an inverse pair. For in such coordinate sentences, the right-hand clause is equivalent to the whole of one of the complex sentences, and always one of the favored ones. This can be concluded on the basis that *instead = instead of that*, *so = because of that*, and *anyway = despite that*, as argued in chapter I-6.

7. There is still this problem, though: Hearing a complex sentence of the 'temporal sequence' type involves not the cognizing of two actually occurring separate events, but the cognizing of adjacent descriptions thereof. That is, the force of our argument can apply fully only to the experiencing of the referents of the clauses, rather than to the experiencing of the clauses themselves. Accordingly, one would need to appeal to some notion such as that iconic representation in language inherits some of the same cognitive effects as the original phenomena that are being "iconized."

8. Talmy (1972, sect. 10.4) gives an elaborate treatment of such forms. And chapter II-1 discusses certain concepts that are regularly expressed with reverse Ground-Figure precedence.

9. It is of course clear by now that Fillmore's ''Path'' and our ''Path'' refer to different concepts. For Fillmore, ''Path'' pertains to an object expressed by a nominal, an object that the moving entity progresses along. Our ''Path''—consisting of the three components: Vector, Conformation, and Deictic—encompasses all spatio-directional schemas apart from any objects that may manifest or partake in them.