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Chapter 8

The Semantics of Causation

1 INTRODUCTION

This study demarcates and views as a whole the semantics of causation as it is characteristically represented in language.¹ It discerns within this whole a number of distinct types of causative situations of varying complexity. And it resolves the types into basic semantic elements and the ways these combine. This analysis is presented in the form of a step-by-step buildup in accordance with the way greater numbers of basic semantic elements combine in increasingly complex semantic causative situations.

In particular, section 2 aims to distinguish what is not linguistic causation from what is, and abstracts some of the latter's criterial characteristics. Section 3, in turn, abstracts out the apparently most basic causative situation, either available for representation by itself in a sentence or else involved in the semantics of all more complex situations. Section 4 presents causative situations of increasing complexity that are compounded of the basic causative situation together with other basic semantic components, except the one that is criterial to agency. Section 5 presents the agentive situation, from its simpler to its more complex forms, which crucially involves the concept of **intention**. And, finally, section 6 briefly presents some further factors in the semantics of causation that will need future exploration.

Although English is the main language tapped for examples, the semantic elements and situations dealt with are taken to be fundamental, figuring in the semantic basis of all languages—that is, taken to constitute a part of universal semantic organization, deeper than those respects in which individual languages differ from each other. For the semantic notions brought forth in this study, such differences would involve mainly where, how explicitly, and how necessarily the notions are expressed at the surface.

With this study broadly located within the framework of generative semantics and syntax, for each type of causative semantic situation I propose an underlying syntactic structure and subsequent derivation to provide a compact formulation in which a situation's semantic components and their interrelations are explicitly indicated, as well as to establish a step-by-step, unbroken relationship between each semantic configuration and observable causative surface sentences.

Note that the more colloquial example sentences tend to be dealt with later in the chapter. The reason is that the causative situations treated later, though they are more complex and combine many semantic factors, nevertheless can—like agency—constitute more everyday circumstances, whereas the simpler situations and the semantic factors themselves, established in the earlier portions of the chapter, occur in isolation often only in more special circumstances. An analogy from physics might be that an everyday event, like a feather wafting down through the air, intertwinedly involves several physical factors—here, for instance, friction, buoyancy, and gravity—of which one or another can be isolated from the rest often only in a special environment, such as in a vacuum.

As a guide to the contents of the chapter, the distinct types of semantic situation dealt with are listed here in the approximate order of their appearance in the exposition:

autonomous events	onset causation	Undergoer
basic causation	serial causation	self-agentive causation
event causation	enabling causation	“purpose”
instrument causation	Agent causation	caused agency
point-/extent- durational causation	Author causation	chain of agency

For immediate exemplification of these types, the following sets of sentences are presented, grouped to demonstrate particular causative distinctions:

Ordered according to complexity and differing as to the element foregrounded (appearing initially) are²

- (1) a. The vase broke.
(*autonomous event*)
- b. The vase broke from (as a result of) a ball('s) rolling into it.
(*resulting-event causative (basic causative)*)
- c. A ball's rolling into it broke the vase.
(*causing-event causative*)

- d. A ball broke the vase in (by) rolling into it.
(*Instrument causative*)
- e. I broke the vase in (with my/by) rolling a ball into it.
(*Author causative—i.e., with unintended outcome*)
- f. I broke the vase by rolling a ball into it.
(*Agent causative—i.e., with intended outcome*)

Differing as to the number of links in a serial causative chain are

- (2) a. i. The aerial toppled.
ii. The branch fell down on the aerial.
iii. The wind blew on the branch.
(*autonomous events*)
- b. The branch's falling down on it toppled the aerial.
(*2-event causative chain*)
- c. The wind's blowing the branch down on it toppled the aerial.
(*3-event causative chain*)

Differing as to the degree of continuity in a causal chain are

- (3) a. I slid the plate across the table by pushing on it with a stick.
(*continuous causative chain*)
- b. I made the plate slide across the table by throwing a stick at it.
(*discontinuous causative chain*)

Differing as to the coextensiveness of the causing event with the resulting event are

- (4) a. I pushed the box across the ice (of the frozen pond).
[I kept it in motion, going along with it.]
(*extended causation*)
- b. I pushed the box (off) across the ice.
[I set it in motion and stayed put.]
(*onset causation*)

Differing as to the overcoming of resistance versus the removal of blockage are

- (5) a. I emptied the tub by dipping out the water
[I emptied the tub with a dipper.]
(*effectuating causation*)
- b. I emptied the tub by pulling out the plug
[*I emptied the tub with a plug.]
(*enabling causation*)

Differing as to the scope of intention on the part of a sentient entity are

- (6) a. I hid the pen somewhere in the kitchen.
 (*Agent causation*)
 b. I mislaid the pen somewhere in the kitchen.
 (*Author causation*)
 c. I lost the pen somewhere in the kitchen.
 (*“Undergoer” situation (not causative)*)

Differing as to knowledge of outcome are

- (7) a. I killed the snail by hitting it with my hand.
 (*Agent causation*)
 b. I hit the snail with my hand in order to kill it.
 (*“purpose” situation*)

Differing as to the presence of internal self-direction are

- (8) a. The log rolled across the field.
 (*autonomous event*)
 b. The girl rolled across the field.
 (*self-agentive causation*)

Differing as to the presence of self-directedness in mid-causal-chain are

- (9) a. I threw him downstairs.
 (*Agent causation*)
 b. I sent him downstairs.
 (*inducive causation (caused agency)*)

Differing as to the number of occurrences of self-directedness along a causal chain are

- (10) a. The king sent for his pipe.
 (*2-member chain of agency*)
 b. The king sent for his daughter (to come).
 (*3-member chain of agency*)
 c. The king had his daughter sent for.
 (*4-member chain of agency*)

In consonance with this study’s findings that there is no single situational notion of causation, as many linguistic treatments have it, but a number of types, there is accordingly no use made here of a single deep verb ‘CAUSE’, but, rather, of as many deep verbs as there are types. To provide an immediate idea of this, we can consider the main verbs of the

sentences in (1b) to (1f): the five appearances of *broke* are each taken to represent distinct causative types, being the homophonous product of conflation of the autonomous *break* of (1a) with five different deep causative verbs.

- (11) a. ... RESULTed-to-break ⇒ ... _R broke
 b. ... EVENTed-to-break ⇒ ... _E broke
 c. ... INSTRUMENTed-to-break ⇒ ... _I broke
 d. ... AUTHORed-to-break ⇒ ... _{Au} broke
 e. ... AGENTed-to-break ⇒ ... _A broke

2 ZEROING IN ON CAUSATIVE

The term **causative** in a semantic analysis of language must first be distinguished from the scientific notion of causation in the physical world. For the latter, the totality of phenomena constitutes a causal continuum of which any conceptually delimited portion, an **event**, is understood as relating causally outside itself and containing causal relations within. For example, the event of water pouring from a tank is understood, *grosso modo*, as being caused by the gravitational attraction between the water and the earth, as carried forward by molecular collisions, and as causing pressure on the object the water falls on. By contrast, a linguistic entity such as a sentence can specify an event that is felt as taking place by itself without causal relations inside or out—as is the case in one language analog of the preceding physical event, the sentence

(12) Water poured from the tank.

In this study, such a sentence will, in fact, be said (to be noncausative in type and) to specify an **autonomous** event. And where some form of causality is felt to be present in the situation expressed by other sentence types, such as those of (1), typically it is as only an element contained within the situation. For example, in (13), causality is expressed as present only at the moment of interaction between two events, but not also throughout the events—for instance, how it is that the ball is in rolling motion and the vase goes through a breaking pattern.

(13) A ball rolling into it broke the vase.

The aim of the present study is to investigate the characteristics of this *semantic* causation and noncausation, where “semantic” refers to the organization of notions (including ones about the physical world) in

the mind pursuant to their expression by language (rather than, say, the organization of phenomena in the physical world).

The investigation begins by determining the existence and nature of a property that is common to all and only the types of situations deemed semantically causative. The procedure for doing this will be to analyze sets of situations in which all have mostly the same content, in which each differs from the next by one factor, and of which only one is felt to be causative—and then to do the same with other types of situation sets to see if the same findings result. The reliability of the procedure is greater in the case where there is an unambiguous surface-structure type—which expresses only the one select situation—that on wider grounds is fairly regularly associable with expressing a causative meaning.

Note that, in general, there is very little unambiguous correlation of surface form with either causative or noncausative meaning for complex sentences or complement-containing sentences, and there is virtually nothing over the length of a clause. This is demonstrated for English in (14) with sentences that have the same syntactic structure but whose meanings differ as to causativity.

(14) <i>No causality expressed</i>	<i>Causality expressed</i>
The ice cream melted from the stick.	The ice cream melted from the heat.
The log rolled across the field.	The girl rolled across the field.
The book gathered dust.	The ball broke the vase.
I grew a wart in my ear.	I grew a wart in my pot.
I watched the ice cream melt.	I made the ice cream melt.

To begin the zeroing-in procedure, the situations in the first set to be considered will all have as part of their content (1) the event of all the water inside a tank coming out through a hole, (2) a person, namely, the speaker, and (3) some action by the person (in all but the first situation). For this set, there is a surface-structure form that only the true causative situation will be able to fill and that, indeed, is generally to be associated with a causative meaning. With a direct object, a *by*-clause, and a subject specifying a volitional entity, it can be represented, with some particulars added in, as in (15).

(15) I emptied the tank by VPing.

Now, if the person is present with the tank in the process of draining but bears no further relation to it, other than perhaps that of awareness—that is, the event is conceived as going on regardless of the person—she cannot later correctly say

(16) I emptied the tank.

but, at the most, only something like

(17) °I saw the tank empty.³

If she is present with the draining tank and also performs some action—such as writing a letter—that does not affect the otherwise ongoing event, she similarly cannot say

(18) *I emptied the tank by writing a letter.

but, at the most, indicating the temporal relation of concurrency between the event and the action, only something like

(19) °I accompanied the tank's emptying with poetry writing./writing poetry./the writing of poetry.

Even the situation in which an action by the person affects the event cannot be represented by the causative formulation if only the characteristics, but not the identity, of the event are altered. This is the case for an act of facilitation, where, for instance, one cannot say

(20) *I emptied the tank by enlarging the hole.

but, rather, only something like

(21) °I helped the tank empty by enlarging the hole.

and it is also the case for an act of part substitution

(22) *I emptied the tank by plugging the old hole and punching two new ones.

as compared with

(23) °I changed the way the tank emptied by plugging the old hole and punching two new ones.

Of course, what is incidental and what is essential in an event is relative, being specified, in fact, by the actual wording. For example, although quantity of flow is incidental to the fact of flowing, it is essential to gushing, so that beside the *flow* paradigm

- (24) $\left\{ \begin{array}{l} *I \text{ made} \\ \circ I \text{ helped} \end{array} \right\}$ the water flow out by enlarging the hole.

the *gush* paradigm shows the reverse pattern of acceptability

- (25) $\left\{ \begin{array}{l} \circ I \text{ made} \\ *I \text{ helped} \end{array} \right\}$ the water gush out by enlarging the hole.

What is common to all the preceding situations—and, hence, must be excluded from the semantic causative notion—is the circumstance that the event takes place in any case, *regardless* of the person or her action. That is, other things being equal, and aside from any modifications it may undergo, the essential event *would* still take place, even if there were no person or action involved.

Considering the matter from the other direction, the event in question must *at least* take place. For the circumstance in which it does not take place is also incapable of syntactic causative formulation. Thus, if the person performed the act of punching a hole in the tank, but no water drained from it, he could not say

- (26) *I emptied the tank by punching a hole in it.

but, rather, could say

- (27) \circ I failed to empty the tank by punching a hole in it.

In a third excluded circumstance, the person's action seems to correlate with the event's occurrence but in fact does not affect it. For example, if the person punches a hole in the tank through which no water comes, and at the same moment a cat steps on the tap from which water does come, she cannot say

- (28) *I emptied the tank by punching a hole in it.

but, rather, might say

- (29) \circ I had nothing to do with the tank's emptying in punching a hole in it.⁴

Finally, if the person performs an action as a result of which the event takes place, he can at last say, using the target causative formulation

- (30) \circ I emptied the tank by punching a hole in it.

An *aviso* must be added even after this final success. A situation that is conceptualized as genuinely causative cannot simply be characterized by

any correlation of timing between the performance of an action and the occurrence of an event. Thus, consider the circumstance in which a person's action during a certain period of time does cause water to flow, but in which other actions during the immediately preceding and following periods also cause the water to flow without any break. Say, for example, on a tank with two taps, you held down your tap for one minute and released it, then I held down my tap for a minute and released it, and finally you once more held down your tap—all without a break in the flow of water. Here, I could still say something like *I emptied the tank partway by holding the tap down*, even though the period of my action does not coincide with the period of the tank's draining.

In sum, given a set of situations in which the relation of an event 1 to an event 2 varies through a succession of factors, only that situation is considered to be semantically causative in which the essential form of event 2 takes place and, *ceteris paribus*, would not take place if event 1 did not take place.

The previous procedure cannot be carried out here for many other choices of situation-set type, but at least one more can be sketched. While the preceding example involved complex causative issues (enablement and volitional agency) dealt with later in this study, the present example is an instance of what will be characterized as a basic causative situation. The illustrative situations will contain the event of a vaned wheel spinning about its axis and the event of a jet of water shooting through space. The syntactic structure that only the causative situation can have will consist of a simple main clause and a subordinate clause introduced by *as a result of*, as indicated in (31).

(31) The wheel turned as a result of NP's VPing.

In tabular form, then, the zeroing-in sequence parallels that of the preceding example; see (32).

- (32) a. $\left\{ \begin{array}{l} * \text{The wheel turned as a result of} \\ \circ \text{The wheel turned at the same time as} \end{array} \right\}$ the water jet's shooting into the air.
- b. $\left\{ \begin{array}{l} * \text{The wheel turned} \\ \circ \text{The wheel turned faster} \end{array} \right\}$ as a result of a stronger water jet's hitting it.

- c. $\left\{ \begin{array}{l} * \text{The wheel turned} \\ \circ \text{The wheel turned by a different means} \end{array} \right\}$ as a result of the water jet's being replaced by an air jet hitting it.
- d. $\left\{ \begin{array}{l} * \text{The wheel turned} \\ \circ \text{The wheel failed to turn} \end{array} \right\}$ as a result of the water jet's hitting it.
- e. $\left\{ \begin{array}{l} * \text{The wheel's turning resulted from} \\ \circ \text{The wheel's turning had nothing to do with} \end{array} \right\}$ the water jet's hitting it.
- f. \circ The wheel turned as a result of the water jet's hitting it.

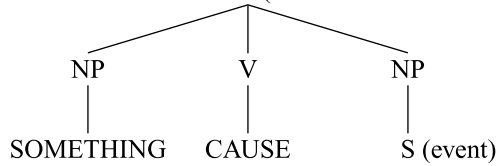
3 THE BASIC CAUSATIVE SITUATION

The two preceding examples have shown that the semantic content of sentences that meet the criterion of the last section may vary widely in kind and quantity. If all such contents have something in common, perhaps it is the irreducible basis for the criterion's holding over the whole of a content. Such a semantic component does seem to be educible from the examination of a range of instances. It can be called the **basic causative situation**. The remainder of this section will explore the characteristics of the basic causative situation. For the sake of simplicity and space, I will omit the stepwise abstraction of this from the range of instances and, in the rest of the chapter, present only the return process of building up to the various more complex causatives from this and other basics.

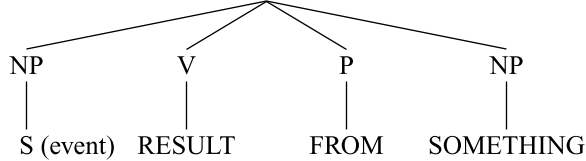
3.1 Basic Composition

The basic causative situation (already seen in (1b) and (32f)) consists of three main components: a simple event (that is, one that would otherwise be considered autonomous), something that immediately causes the event, and the causal relation between the two. This semantic entity, at this initial state of analysis of its characteristics, can be syntactically represented by one or the other of the underlying structures of (33). In these, deep morphemes are written in capital letters, and a parenthesized term after a constituent indicates the semantic element that the latter specifies.

(33) a.

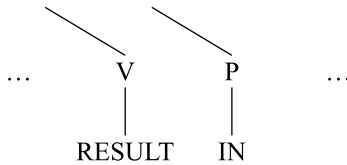


b.

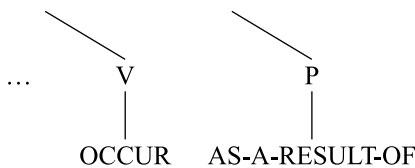


Alternate expressions that might be used here to represent the deep morphemes suggestively are shown in (34).

(34) a.



b.



The (a) forms of (33) and (34), as well as the (b) forms, will be used interchangeably in this study.

3.2 Caused Event and Causing Event

The next thing to note about the basic situation is that the cause of the simple event is itself also a simple event rather than, for instance, a (physical) object, as indicated by the anomaly of such sentences as

(35) *The window's breaking resulted from a ball.

beside

(36) °The window's breaking resulted from a ball's sailing into it.

and may also be seen in the complex-sentence forms, as in (37).

- (37) The window broke as the result of $\left\{ \begin{array}{l} *a \text{ ball.} \\ \circ a \text{ ball sailing into it.} \end{array} \right\}$

While it is true that, in a related construction type, the corresponding sentence

- (38) A ball broke the window.

does not fare so badly beside

- (39) \circ A ball's sailing into it broke the window.

such a sentence always seems to imply a larger form that includes a causal event.

- (40) \circ A ball broke the window in/by sailing into it.⁵

There *are* nominals that, unlike *ball*, appear comfortably after *from* or *as a result of*—for example, *wind*, *rain*, *fire*—as in (41).

- (41) The window cracked from the wind/the rain(fall)/a fire.

But these, representing what Fillmore (1971) calls “forces,” can in some of their usages be considered to arise from the conflation of a deeper clause that specifies a whole event, as in (42).

- (42) ... from the air blowing on the Figure
 ... from the rain (water) falling on the Figure
 ... from flames acting on the Figure

The question raised by Fillmore as to whether a force is to be classed as an Agent or as an instrument is answered in this study: as neither, but rather as an event. Thus, for example, *The wind broke the window* is interpreted as coming from a structure like *The air's blowing on it broke the window*, an instance of **event causation**, as discussed in section 4.

Thus, as emended by the present consideration, the bottom line of the underlying structures diagrammed in (33) would now look like the forms in (43).

- (43) a. S (event) CAUSE S (event)
 b. S (event) RESULT FROM S (event)

Terminologically, in this work, the one event—that of the left-hand S in (43a)—will be called the **causing event** and the other—that of (43a)'s right-hand S—will be called the **caused** or **resulting event** (interchangeably).

3.3 Caused Event Specified Before Causing Event

There is evidence that of the two representations in (43), the (b) form is the more basic. Syntactic evidence for this is found in a whole array of causative sentences, where it can be observed that the representation of the caused event always appears in the main clause, where it may either remain in nominal form (below an NP node) or raise into the whole clause. On the other hand, the causing event is always represented in a subordinate clause and is always in a nominalized form. This is, of course, immediately obvious in a surface sentence directly arising from the (b) form, as in (44)

(44) The window's breaking occurred as a result of a ball's sailing into it.

where the caused event (the window breaking) is indeed specified in the main clause, and the causing event (the ball sailing) is indeed in nominalized form in the dependent clause. Moreover, the string specifying the caused event may indeed leave nominal status and raise into the main clause of the matrix sentence, as (45) suggests.

(45) The window broke as a result of a ball's sailing into it.

But it is also the case when the causal (physical) object appears as subject, as in

(46) A ball $\left\{ \begin{array}{l} \text{caused the window's breaking} \\ \text{broke the window} \end{array} \right\}$ in sailing into it.

where the caused event is still specified in the main clause—optionally raised into it—and the causing event is still in nominalized form in a dependent clause. Even when the causing event is specified in the main clause (a dependent clause being absent), as in (47)

(47) A ball's sailing into it $\left\{ \begin{array}{l} \text{caused the window's breaking.} \\ \text{broke the window.} \end{array} \right\}$

it appears there in nominalized form, while the string specifying the caused event is still (also) in the main clause and still has the option of raising out of nominal status. The seemingly strongest countervailing evidence is found in forms like

(48) A ball's sailing into it resulted in the window's breaking.

or, with the reverse pronominalization

(49) A ball's sailing into the window resulted in its breaking.

where the string specifying the caused event must remain nominal (and may even be considered located in a subordinate clause introduced by *in*). But even here the causing event must also remain nominal in form and cannot raise into the main clause. Thus, there is no form corresponding to (49') with such a raising.

(50) *A ball sailed into the window in its breaking.

Nor, on the model of a sentence with caused-event first and raised, like (51), is there any corresponding surface form with the reverse embeddings and the inverse causal relation, as shown in (52).

(51) °The window broke *from* a ball's sailing into it.

(52) *A ball sailed into the window *to* its breaking.

The same findings are repeated in sentences with an Agent. The sentence

(53) I broke the window.

has the specifications within its single (main) clause of a final resulting event, and insofar as any additional event is implied or can be specified, it will be a causing event appearing in a subordinate clause.

(54) I broke the window by throwing a ball at it.

There is no comparable form with the reverse locations of specifications.

(55) *I threw a ball at the window $\left\{ \begin{array}{l} \text{to} \\ \text{to the point of} \end{array} \right\}$ breaking it.

Further challenging forms like those in (56) are dismissed because they can optionally end with *thereby*, a pronominalization of a subordinate clause containing the causing event. Thus, the initial clause is an asserted duplicate of the causing event that pronominalizes its subsequent occurrence. Such sentences are treated in chapter I-6 under the term "copy-clifting."

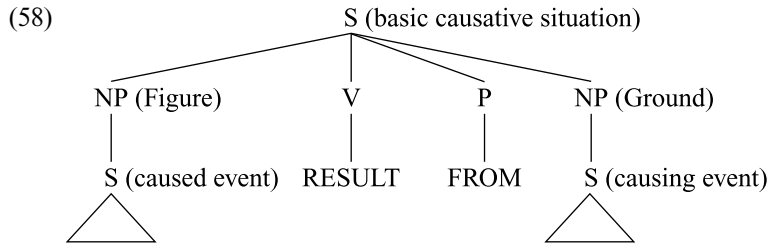
(56) a. A ball sailed into the window $\left\{ \begin{array}{l} \text{and it broke.} \\ \text{with the result of its breaking.} \end{array} \right\}$.
 b. I threw a ball at the window $\left\{ \begin{array}{l} \text{and broke it.} \\ \text{(with the result of) breaking it.} \end{array} \right\}$

Thus, these sentences have a surface form that specifies the result before and in relation to the cause, while lacking a form specifying the reverse. This pattern is repeated in and reinforced by sentences expressing the causality of decision, as in (57).

- (57) a. We stayed home *because* of the rain pouring down.
 *The rain poured down *to-the-point-of-occasioning* our staying home.
- b. We went out *despite* the rain pouring down.
 *The rain poured down *in-futile-oppositiveness-to* our going out.

As treated in chapter I-5, a semantic concomitant of these syntactic facts is that there is no way within a standard complex sentence to *assert* the causing event—it can be represented only presuppositionally. For it to be asserted, a ‘copy-cleft’ sentence type must be resorted to.

These observations suggest that, of the alternative forms in (43), (b) is the more basic because there the caused event is represented in (the precursor of) the main clause (where it will later virtually always be); the causing event is represented in (the precursor of) the subordinate clause (where it will later usually be); and it is there already presuppositional (as it will later always be). (How a structure like (43a) might arise derivationally will be treated in section 4.) In the terms of chapter I-5, it can be said further that, within the (43b) form, the caused event functions as the Figure with respect to the causing event’s function as the Ground. Thus, with the characteristics determined so far for the basic causative situation, it can be syntactically represented most closely by an underlying structure like (58).



3.4 Characteristics of the Causing Event

For a causal relationship to hold between two events, the causing event must have some elements in common with the caused event. There can be no notion of a causal relation where this is not the case, as in a sentence like (59).

- (59) *The aerial toppled off the roof as a result of a ball’s sailing into the pond.

But, further, the causing event cannot share just any element

(60) *The aerial plummeted through the air as a result of a ball's sailing through the air.

but must, in particular, share the caused event's Figure-functioning element.

(61) °The aerial_i plummeted through the air as a result of a ball's sailing into it_i.

Further, within the causing event, that shared element must function as the Ground on which some other Figural element acts. It cannot itself be the Figure or it will have caused its own consequent motion.⁶ The relation that the causing event's Figure bears to the Ground must be one of **impingement**. This must be interpreted appropriately for nonphysical events (section 5 touches on causation among mental events), but, for the physical, it entails the exertion of force through an initiated or maintained contact. Sentence (61) illustrated an initiated forceful contact, and the following sentences illustrate a maintained one.

(62) °The aerial (eventually) toppled off the roof as a result of
 { a branch pressing }
 { a vine pulling } on it.

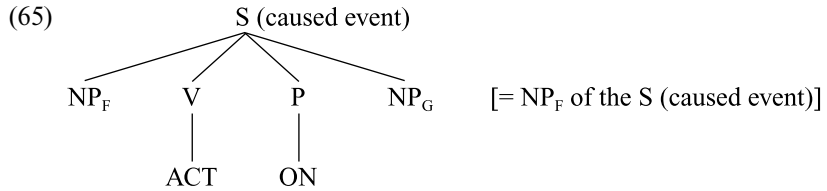
Excluded are cases of no contact

(63) *The aerial toppled off the roof as a result of a ball sailing past it.

as are cases of contact without force. And there are restrictions on cases involving the breaking of contact. Switching to agentive sentences to show this, it can be seen that while a *by*-clause can be used equally for expressing the making or breaking of contact (as in (64a) and (64b)), a *with*-phrase can express only the former (as in (64c)).

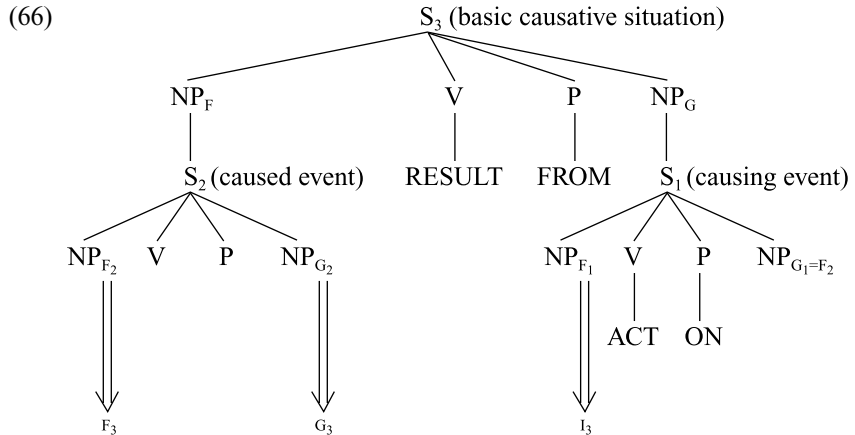
(64) a. °I toppled the display by throwing a can at it.
 b. °I toppled the display by removing a can from its bottom tier.
 c. I toppled the display with a can
 { that I threw at it. }
 { *that I removed from its bottom tier. }

With impingement represented by the deep morpheme sequence ACT ON, the causing event with the characteristics determined for it above can be represented syntactically as in (65).



3.5 Instrument

An important observation can be made when the whole basic causative situation is once again considered: the element that functions as the Figure within the causing event in turn functions as the **Instrument** with respect to the entire causative situation. It does so in most of the senses one would want for the term 'Instrument'. For example, the nominal that expresses this element is the one that appears, via regular derivational patterns, in the *with*-phrase of an agentive sentence. In addition, the elements that function as the Figure and Ground in the caused event also serve those functions in relation to the whole causative situation.⁷ These hierarchical semantic relationships are indicated in the following, most detailed, syntactic representation of the basic causative situation. Here, the symbols for semantic relations (F, G, I) are given the subscript 1 if they pertain to the causing event, 2 if to the caused event, and 3 if to the entire causative situation (but also see chapter I-5, section 6).



The fact that the Figure in the causing event is also the Instrument in the whole causal situation is an instance of what can be considered a multi-relational embedding, or else the derivation of semantic relations. In later examples of this, (1) an entity that is the Author of a causative situation

and the intender in an intentional situation will function as the Agent in relation to the larger situation containing the other two; and (2) one entity (the Inducer) will function as an Agent with respect to another entity's (the Inducee) functioning as an Agent.

3.6 Dynamic Oppositions

The next semantic characteristic of basic causation to be noted here can be observed by contrasting examples (67) and (68).

(67) The golf ball rolled along the green.

The independent sentence in (67) depicts an autonomous event (comparable to one more clearly regarded as such, like that of *The satellite circled around the earth*). Compare this to the main clauses of causative sentences like those in (68), which depict a causally resultant event.

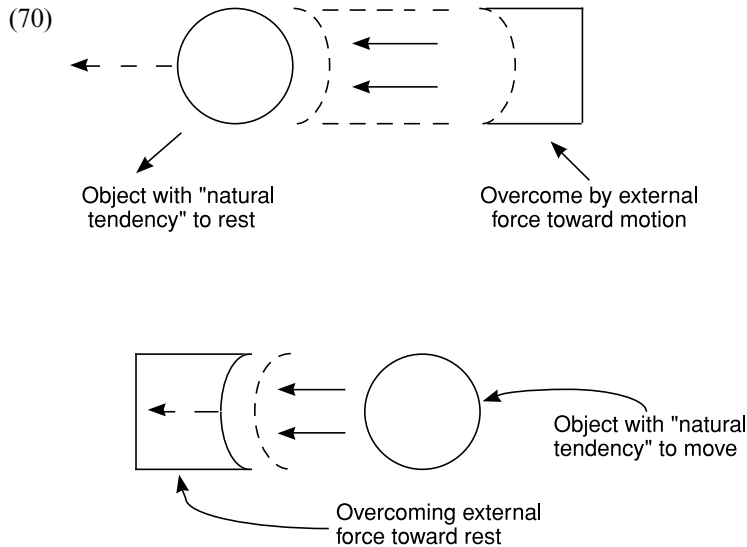
- (68) a. The ball rolled along the green from the wind blowing on it.
 b. The ball continued to roll along the green from the wind blowing on it.

In (67), the event seems one that unresistingly goes on of its own nature; in (68), the same event seems one whose tendency would be not to take place, but whose occurrence is forced from outside itself. Such a characterization is, of course, consonant with section 2's formulation that causation is considered to be involved only where some occurrent event would not take place if it were not for another event. But beside this conditional abstraction, there seems to be semantic reality to a corresponding formulation in terms of dynamic oppositions. The Figure of the resulting event has a "natural tendency" to be in the state of motion opposite of that in the event, and the instrument of the causing event exerts a force on the Figure that "overcomes" this natural tendency. For the situation depicted in (68), a formulation in such terms would mean that the ball had a natural tendency to rest and the wind's blowing on it overcame this. A further possibility for this type of formulation is to see the dynamic opposition as a vector sum whose resultant is the Figure's motive state in the resulting event. For (68), this would mean that the ball's motion along its path is the vector resultant of the wind's vector of force and a smaller vector of force in the opposite direction, due—in accordance with physics versus folk conception—to "friction" or to "an object's tendency to come to a stop." As a third point of contrast beside (67) and (68b), which helps to clarify the foregoing issues, there is a

second, noncausative, usage of the surface verb *continue* (stemming, one must conclude, from a distinct underlying form), as in the main clause of (69).

- (69) The ball continued to roll along the green (down the slope) despite the tall grass hindering it.

This specifies the exact reverse of the dynamic opposition specified in (68b), as diagrammatically depicted by (70).



That is, the ball's natural tendency is to move, and this overcomes the grass's exertion of force on it toward rest. Or, in vector terms, the ball's motion along its path is the vector resultant of a vector of force in that direction, due to the ball's kinetic momentum, and a smaller vector of force in the opposite direction, due to friction with the grass. Thus, the verb *continue* in a sentence like (71), when this has a meaning like that of (68), indicates true causation (as per section 2's criterion), albeit covertly.

- (71) The ball continued to roll along the green.

But when this sentence has a meaning like that of (69), it does not indicate causation at all.

The preceding examples involved motion. But a locative event can also be felt to be occurring, either of its own nature, like the event represented by

- (72) The wagon is standing on the platform.

or as the resultant of dynamic oppositions, as in the main clause of

- (73) The wagon $\left\{ \begin{array}{l} \text{is standing} \\ \text{is continuing to stand} \end{array} \right\}$ on the incline as a result of a brace pressing against it.

Here it can be taken that the wagon's natural tendency is to move, and that this tendency is being overcome by the force exerted by the brace. There is even at least one instance in which this distinction (i.e., between (72) and (73)) is indicated lexically. Consider an event in which, say, a suction-cup dart is securely affixed to a refrigerator. When this event is considered autonomous, it is specified using the verbal form *be stuck*, as in (74).

- (74) The (suction-cup) dart is stuck to the refrigerator.

But when the same event is taken as largely caused—by the continued overcoming of the Figure's natural tendency to move—the verb *stick* is used, as in the sentence in (75), which could be exclaimed by a child after shooting.

- (75) The dart is sticking to the refrigerator!

For a third event type like the nondurational one of transition from location to motion, fewer examples are easily readable as autonomous. But those that are taken to be caused, such as the one represented by the main clause of (76), are as open to a dynamic-oppositions interpretation as the preceding cases.

- (76) The ball rolled off its spot from a gust of wind blowing on it.

How such dynamic oppositions might be explicitly represented in an underlying structure—aside from being implicitly a part of the meaning of RESULT FROM—is more unclear for this semantic notion than for any other treated here: Might specifications somehow be attached to the relevant clauses?

- (77) [the ball rolled along the green] —*against its natural tendency to rest*
 RESULTed FROM
 [the wind was blowing on the ball] —*overcoming that tendency*

Or could we replace the specification for a simple causing event with that for a vector sum?

- (78) [the ball rolled along the green] RESULTed FROM
 [the force of [the wind blew on the ball] exceeded the force of [the
 ball's tendency to rest acted on the ball]]

There is as yet not enough syntactic evidence from which to infer any particular formulation, if, indeed, any at all.

3.7 Point-Durational and Extent-Durational Causation

As seen in the preceding discussion, the abstractability of a dynamic opposition from a causative situation is equally great whether the situation extends over a period of time (involving either motion or location) or is punctual. But this distinction divides basic causative situations into two types and deserves attention in its own right. Looking at the situations represented by a pair of sentences as in (79), which differ with respect to this distinction, several associated characteristics can be observed.

- (79) a. The carton slid across the grass from the wind blowing on it.
 b. The carton slid off its spot from a gust of wind blowing on it.

First, with regard to dynamic oppositions, in the (a) situation the Figure's tendency to rest is continuous through an extent of time, potentially realizable at any point thereof; and the instrumental force's overcoming of this tendency is also continuous through that extent of time, manifest at every point thereof. But in the (b) situation, the resistance to motion and its overcoming are manifest at a single point of time. Second, the caused event—that of the carton moving—in (a) is homogeneously occurrent throughout the extent of time considered in the sentence and, indeed, through any point thereof. But in (b), both its nonoccurrence and its occurrence are manifest in the point of time considered. It might even be concluded that the *transition* between these two, rather than the final motive state, is what is caused. Finally, here, the characteristics of the causation in any temporal point of the (a) situation differ from those of (b)'s single point. For, while both situations meet the causative criterion in that the carton's moving would not take place if it were not for the wind's blowing, the absence of a causing event in the (b) situation would entail the carton's *remaining* at rest. But in a point of the (a) situation, it would entail the carton's coming to rest.

These two types will here be called **point-durational** causation and **extent-durational** causation. It is not clear how these two types of causation might be explicitly specified in an underlying structure, nor how

point-durational causation might look in a partly derived structure. But extent-durational causation might well be represented by a deep morpheme CONTINUE at some mid-derivational stage, such as one renderable as in (80).

(80) The carton CONTINUED (to) slide across the grass from the wind blowing on it.

The further derivational fate of the deep verb might then be deletion, giving rise to the form in which this sentence was first seen—that is,

(81) The carton slid across the grass from the wind blowing on it.

or it might be lexical insertion by such surface verbals as *continue to* or *keep on -ing*, thereby yielding

(82) The carton $\left\{ \begin{array}{l} \text{continued to slide} \\ \text{kept on sliding} \end{array} \right\}$ across the grass from the wind blowing on it.

The deep verb CONTINUE also participates in confluations with particular other morphemes—for example, with *be*

(83) NP $\underbrace{\text{CONTINUE to be}}_{\substack{\textit{stay}, \\ \textit{remain}}} \text{ Adjectival}$

so that beside *the soup was hot* appear

(84) a. *The soup $\left\{ \begin{array}{l} \text{continued to be} \\ \text{kept on being} \end{array} \right\}$ hot.
 b. °The soup $\left\{ \begin{array}{l} \text{stayed} \\ \text{remained} \end{array} \right\}$ hot.

and, as in a previous example, by stages with *be stuck*

(85) NP $\underbrace{\text{CONTINUE to be}}_{\substack{\textit{stay} \\ \textit{stuck}}} \text{ stuck to NP}$
 \downarrow
 $\underbrace{\textit{stay} \quad \textit{stuck}}_{\textit{stick}}$

as in

(86) a. *The dart continued to be stuck to the refrigerator.
 b. ^xThe dart stayed stuck to the refrigerator.
 c. °The dart stuck to the refrigerator.

the term **onset causation**). And, in (91b), the rod's pressing can be seen as an extended autonomous event of which only one midpoint's worth functions as a causing event in a point-durational causation that results in the cracking event. Thus, the evident noncontemporaneity of the events specified by the main clause and the subordinate clause in both (91a) and (91b) does not necessarily reflect any characteristics of the basic causative situation. On the contrary, the point-durational causations abstracted from these more complex situations, set beside the extent-durational causations represented by sentences like

(92) The carton slid across the grass from the wind blowing on it
(steadily).

give evidence for one additional characteristic of the basic causative situation: the caused event takes place exactly during the duration of the causing event, whether this is a point or an extent of time.

3.9 Summary

The characteristics that have been abstracted for the basic causative situation can be summarized as follows:

1. The basic causative situation consists of three components: a simple event, that which causes the event, and the causal relation between the two.
2. That which causes the simple event is itself a simple event.
3. The caused event functions as the Figure and the causing event as the Ground of the whole situation (and so they are represented, respectively, earlier and later in an underlying structure); the causal relation is "result from."
4. The Ground component of the causing event is also the object that functions as the Figure of the caused event. The Figure of the causing event must have force-exertional contact with this object. This contact can be initiated or maintained (and may involve pushing or pulling), but it may not be broken. The deep form 'ACT ON' can be used to represent these characteristics.
5. The objects that function as the Figure and as the Ground of the caused event also have these same functions with respect to the entire causative situation. The object that functions as the Figure of the causing event has the function of Instrument with respect to the entire causative situation.

6. The caused event occurs, and it would not occur if the causing event did not occur. Or: The Figure of the caused event has a natural tendency to be in the state of motion that is opposite to the state that it is manifesting, and this natural tendency is being overcome by the force exerted by the Instrument of the causing event. Or: The caused event is the vector resultant of a sum of Figural and Instrumental vectors.
7. A causative situation can be a point or an extent of time in duration, with an associated difference of certain characteristics.
8. The caused event takes place exactly during the duration of the causing event.

4 COMPLEX CAUSATIVE SITUATIONS

Having explored the characteristics of the basic causative situation, we proceed now to investigate how various more complex causatives can be built up from this causative basic. In fact, under the analysis that follows, many of the more complex situations are particular embeddings and concatenations of just the two basic semantic entities already dealt with—the autonomous event and the basic causative situation—and the rest involve only one additional semantic factor: intention. Those complex situations without intention are treated in this section, and those with intention are treated in the next section.

4.1 With the Foregrounding of One Element

To begin the systematic investigation, we note that beside the basic causative situation specified by the sentence in (93), the situation represented by (94) does not contain any further information or any additional event.

(93) The vase broke from (as a result of) a ball rolling into it.

(94) A ball broke the vase in (by) rolling into it.

If (94) is more complex at all, it is by virtue of including a semantic component of emphasis in relation to one of the original semantic elements, namely, the instrument (the ball). In particular, there seems to be a singling out, or foregrounding, of the Instrument and of the relation it bears to the whole situation. This much can be explicitly represented syntactically as in the general underlying form in (95a), which employs the semantic function symbols I for instrument, R for resulting event, and C for causing event.

Such a derivational origin accounts for some of the characteristics noted earlier for the (97) sentence type: the clause specifying the causing event, in remaining nominal without the option of raising, parallels the other preposed, singled-out elements, namely, those specifying instrument and Agent. And this removes the sole exception to the observation that the causing event's specification comes last, for the absence of such specification at the end of (97) is now seen as due to its deletion by a preposed replica.

4.2 Onset Causation

Consider again the two different situations represented by the ambiguous sentence in (99)

(99) I pushed the box across the ice.

—that is, (a) where I keep the box in motion, going along with it, and (b) where I set the box in motion and stay put. A disambiguating pair of partial paraphrases is given in (100).

- (100) a. I $\left\{ \begin{array}{l} \text{slid} \\ \text{brought} \end{array} \right\}$ the box across the ice by pushing on it (steadily).
 b. I $\left\{ \begin{array}{l} \text{slid} \\ \text{sent} \end{array} \right\}$ the box across the ice by giving it a push.

Compare the corresponding two nonagentive situations represented by (101).

- (101) a. The box slid across the ice from the wind blowing on it (steadily).
 b. The box slid across the ice from a gust of wind blowing on it.

It is once more to be noted that in the (a) situations the Figure continues in motion as the ongoing result of an extended force impingement without which it would stop, and, hence, involves causation throughout (“extent-durational causation”). But, in the (b) situations, the Figure describes a path along the length (and during the duration) of which its motion is to be taken not as caused but as autonomous. In the (b) situations, the only actually causative portion is the point-durational situation of a force setting the Figure in motion, which is comparable to the point-causative situation unaccompaniedly specified by sentences like the following.

- (102) a. I $\left\{ \begin{array}{l} \text{slid} \\ \text{got} \end{array} \right\}$ the box off the spot it was resting on by giving it a push.

- b. The box slid off the spot it was resting on from a gust of wind blowing on it.

Thus, each (b) situation must be considered more complex than a basic causative situation, since it contains a point-durational instance of this together with an autonomous event. Such a complex situation has particular relevance to language study because, when the autonomous event ensues upon the contained point-durational causative situation, with the same object as Figure, as exemplified in (103a), (all?) languages have the transformational options for deriving a simply structured surface sentence like that in (103b), which specifies the complex situation.

- (103) a. The box CAME INTO MOTION from a gust of wind blowing on it $\left\{ \begin{array}{l} \text{and then} \\ \text{whereupon} \end{array} \right\}$ it slid across the ice
 b. $\Rightarrow \Rightarrow$ The box slid across the ice from a gust of wind blowing on it.

It should be noted that, in an underlying structure like (103a), the non-Figure portion of the caused event cannot be represented as to its specific details, as is done in the phrase *slid off the spot it was resting on* in the sentences in (102), but only generically by some deep morphemic phrase like COME INTO MOTION, since that much will be deleted in the derivation to the simpler surface sentence. Or alternatively, by one syntactic interpretation, that very deep morphemic phrase can, instead of deleting, give rise to the verb particle *off*, which can appear in the earlier (b) forms with a disambiguating effect.

- (104) a. I pushed the box off across the ice.
 b. I $\left\{ \begin{array}{l} \text{slid} \\ \text{sent} \end{array} \right\}$ the box off across the ice ...
 c. The box slid off across the ice ...⁸

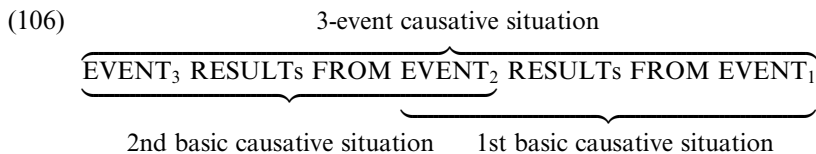
The exact nature of the relation between the caused event and the autonomous event is a matter for further investigation. It has been casually indicated by the expressions *ensuing*, *and then*, and *whereupon*, but a finer analysis might reveal it to involve the relation that the initial boundary point of an ordered linear extent bears to the whole extent, as might be represented in an underlying structure something in the manner of (105).

- (105) The box CAME TO the BEGINNING POINT of [the box slid across the ice] from a gust of wind blowing on it.

This consideration that the complex situation involves the notion of a beginning point, together with the fact that its underlying representation conflates into a causative-resembling surface sentence, suggests that it might well be dubbed **onset causation** (Shibatani's 'ballistic causative'), even though one can strictly speak only of extent-durational causation and point-durational causation as true causatives.

4.3 Serial Causation

In section 3, we discussed how, when one event causes another, the object that functions as the Figure within the first event is considered to function as the instrument in relation to the Figure object of the second. Now, if this second event causes a third, its Figure object can, in turn, function as the instrument to this last event's Figure object, and so on with further events in what may be called **serial causation**. Such a causative chain is a more complex situation than one of basic causation. It can be regarded as a generalization of the latter, with n events instead of two, as indicated by the top brace in (106), or it can be regarded as consisting of overlapped "links" of basic causative situations, as indicated by the bottom braces in (106).



It is a whole investigation in its own right to see how long and what sort of a chain can be specified by surface sentences, and, hence, to determine the complex situation's best underlying representation (particularly as regards bracketing) and subsequent derivational patterns. What can be done here, though, is to illustrate the matter by selecting three serially causative events for representation in an underlying structure like the discursively sketched one that follows.

- (107) a. [the aerial toppled] RESULTed FROM
 b. [the branches came down upon the aerial] RESULTed FROM
 c. [the wind blew on the branches]

Note that of the surface sentences that one might think are derivable from this, only a couple are viable, as in (108).

- (114) a. I $\left\{ \begin{array}{l} \circ \text{slid the dish} \\ \times \text{made the dish slide} \end{array} \right\}$ across the table by pushing on it
with a stick.
- b. I $\left\{ \begin{array}{l} * \text{slid the dish} \\ \circ \text{made the dish slide} \end{array} \right\}$ across the table by throwing a stick
at it.

Though much more investigation is needed, examples like this do suggest that one of the semantic circumstances that prompt the use of *make* is the presence in a causal chain of (what is considered by the speaker to be) an autonomous event; and, conversely, one that prompts the use of a conflated form is a causal chain that is (taken by the speaker to be) continuously caused.

Another example where such tendencies hold is the situation in which a person acts as the agent in a gate's opening. If she does this by, say, cranking a winch that draws in a chain attached to the gate, she is likelier to say *I opened the gate*. But if she presses the button on a device that sends out radio signals that are considered to propagate through space *by themselves* before reaching a gate mechanism, she is likelier to say *I made the gate open*. In a similar situation, if a person hits a window with a hammer, *I broke the window* is likelier. But if he slams a door shut, and this sets up a wave of compression in the air that so-conceivedly spreads *on its own* to impinge on the glass, then *I made the window break* is likelier.

Isolating the factor that licenses the use of *make* here is difficult because of the number of semantic and syntactic circumstances that seem to affect the use of this word. Some of these neighboring circumstances can be noted to aid the isolating process. One semantic circumstance is that of overcoming a particularly strong resistance (especially when sharply getting something unstuck)—for example, when speaking of a stubborn bolt, as in (115).

(115) I made the bolt screw in by twisting it with a heavy wrench.

This *make* might be considered to arise by conflation from an underlying verbal that can be rendered as

(116) I countered its resistance sufficiently to AGENT (the bolt to screw in).

or as

(117) (I) succeeded in overcoming its resistance thereupon AGENTing
(the bolt ...)

Another semantic circumstance is that of foregrounding an Agent's method. The sentence in (115) serves equally well for this, but is now understood to mean something close to the paraphrase in (118)

(118) It was by twisting it with a heavy wrench that I made the bolt
screw in.

so that this *make* might be considered to have been conflated from an underlying verbal renderable as

(119) (I) used the means specified in AGENTing (the bolt ...)

Further factors might be whether or not there is an autonomously consequent event specified and how freely the lexical verb can be used as a conflated causative.

4.5 Enabling Causation

Compare the sentence

(120) The water drained from the tank as a result of the piston
squeezing down [on it].

which specifies a basic causative situation (the situation may have to include something like a spring-shutting valve to serve as a workable example), with the sentence

(121) The water drained from the tank as a result of the plug coming
loose.

The latter sentence has the same syntactic structure as the former sentence. And it also specifies some kind of causative situation inasmuch as the causative criterion applies: the water's draining would not take place if it were not for the plug's coming loose. But it is distinct in that the object specified on the right (the plug)—which seemingly corresponds to the instrument-functioning object (the piston) specified in (120)—does not cause the motion of the Figure object (the water) by ACTing ON it, that is, by exerting force on it via physical contact, which is one of the characteristics determined for the basic causative situation. Granted, the two situations are quite comparable from the standpoint of physics in that they equally involve molecules moving and colliding in accordance with the same principles. But our semantic system would seem to analyze the

situation in (121) as more complex than the basic causative situation in (120)—in fact, as consisting of something like the subparts identified in (122).

- (122) a. An already-existent situation: the restraint of one entity by another
(the water being held in by the tank-cum-plug)
 b. A newly occurrent event: the disruption of the restraining entity
(the plug coming loose)
 c. A consequent circumstance: the release of the restraint
(the water becoming free to flow)
 d. An ensuing event: the motion of the previously restrained entity
(the water draining from the tank)

In terms of surface structure, it is true that of these subparts only (b) and (d) are represented at the surface in the particular construction type of (121)—in the subordinate clause and main clause, respectively—too little, as it happens, to permit a formal reflection of this situation's distinctness from that of basic causation. However, the difference between these two situations is reflected at the surface in the construction that foregrounds the rightmost-specified events of (120) and (121). For, in the former case, the surface main verb can be *make* or a conflated form, as (123) suggests.

(123) °The piston squeezing down $\left\{ \begin{array}{l} \text{made the water drain} \\ \text{drained the water} \end{array} \right\}$ from the tank.

But, in the latter case, neither of these is possible, as (124) shows.

(124) *The plug coming loose $\left\{ \begin{array}{l} \text{made the water drain} \\ \text{drained the water} \end{array} \right\}$ from the tank.

Instead, only a verbal form like *let* or *allow* will serve.

(125) °The plug coming loose $\left\{ \begin{array}{l} \text{let} \\ \text{allowed} \end{array} \right\}$ the water (to) drain from the tank.

In these last verbal forms, it may be construed that the (122c) subpart is now also represented at the surface. The whole situation will be termed one of *enabling* causation because of this word's relation (characterized later) to words like *let*.

Starting with a core and building up to the whole, we now look portion by portion at the enabling situation and at how each stage might be rep-

resented syntactically. The causal core would seem to consist of the (a) and (b) subparts of (122), that is, of a basic causative situation and a simple event with the following particularities: The former is an already ongoing extent-durational causative situation—in which, by intrinsic property, the instrumental object is overcoming the Figural object's natural motive tendency.¹⁰ The latter is a newly occurring motion event whose Figural object is the same as, or part of, the former's instrumental object. This object moves away or disappears from its previous location (or, in deep morphemes, 'MOVEs ABSENT'). These two semantic entities should perhaps be represented within the whole underlying structure—for example, as in (126a) and (126b) for the situation in (121)—even though nothing of them shows up at the surface. So far, what does appear represented at the surface is the particular realization of the simple event—as in (126b').

- (126) a. [the water (F) REMAINED in the tank] RESULTed FROM
 [the tank [walls and plug] (I) pressed in on the water]
 b. (PART of) the tank MOVED ABSENT
 b'. in particular: the plug came loose

Condensed and in a more suggestive form, these structures can also be represented as in (127).

- (127) a. The water REMAINED in the tank as a result of the tank
 pressing in on it.
 b'. The plug came loose.

Next beyond this causal core comprising a situation plus an event is the semantic significance of the two taken together: the circumstance that where there has been a blockage, this now disappears, and that what has been restrained is now released from that restraint as a consequence of the unblocking (in other words, subpart (122c)). The whole of this can be represented syntactically by embedding the structures of (126) in a matrix that specifies the just-noted embracing semantic circumstance, perhaps as in (128).

- (128) [the water BECAME FREE FROM S (126a)] RESULTed
 FROM [S (126b or b')]

which can be rendered more casually, as in (129).

- (129) The water's BECOMing FREE $\left\{ \begin{array}{l} \text{FROM remaining} \\ \text{NOT to remain} \end{array} \right\}$ in the tank

as a result of the tank's pressing in on it RESULTed FROM a tank part's moving away (\rightarrow a plug's coming loose).

The deep morphemic expression BECOME FREE FROM/NOT *to* is intended to specify the release of restraint.¹¹ The structure in (128) gives rise to valid surface sentences of the type in (130)

- (130) The water became free $\left\{ \begin{array}{l} \text{not to remain in} \\ \text{to drain from} \end{array} \right\}$ the tank as a result of the plug coming loose.

and this fact indicates that the kind of semantic aggregation considered so far (i.e., where no further occurrent event is included, such as the water's draining out) is a viable entity in its own right, one that might be styled the **minimal** or **basic enabling situation**. Indeed, the corresponding semantic entity with the unblocking event foregrounded, which can be syntactically represented as in (131),

- (131) a. [the plug came loose] EVENTed [the water BECAME FREE NOT to REMAIN ...]

gives rise to sentences containing the word *enable*.

- b. \Rightarrow [the plug came loose] $\underbrace{\text{EVENTed-TO-BECOME-FREE}}_{\text{EFREEd/ENABLEd}}$
 the water
 NOT to REMAIN ...
- c. \Rightarrow [the plug came loose] ENABLEd the water NOT to REMAIN in the tank
- d. \Rightarrow The plug coming loose
 $\left\{ \begin{array}{l} \left\{ \begin{array}{l} \text{freed the water from remaining} \\ \text{enabled the water not to remain} \end{array} \right\} \text{ in the tank.} \\ \left\{ \begin{array}{l} \text{freed} \\ \text{enabled} \end{array} \right\} \text{ the water to drain from the tank.} \end{array} \right\}$

(The forms EFREEd and ENABLEd in (131b) are offered simply as alternative, equally suggestive representations of the single relevant deep verb.)

Lastly, the final event in a fuller semantic situation like that in (121) may be regarded as having the same kind of incidental relation to the basic enabling situation as the "ensuing event" in a situation of onset causation. How such a relation should be thought of is not clear. Perhaps a final event should be understood as simply proceeding to take place by virtue of its own natural tendency to do so, or perhaps as being the caused event in an unspecified basic causative situation (where, for example,

gravity's acting on the water is the causing event). The relation, whatever the final understanding of it may be, can for now be represented by a deep morphemic expression like ENSUE UPON, so that the underlying structure for the original full enabling-causative situation introducing this section can finally be indicated as in (132).

(132) [the water drained from the tank] ENSUEd UPON [S (128)]

In derivation everything deletes except the initial bracketed S of (132) and the final bracketed S of (128) in leading to the surface sentence, repeated in (133).

(133) The water drained from the tank as a result of the plug's coming loose.

The corresponding full situation with the unblocking event foregrounded, seen in (125), can be represented in a comparable way.

(134) [S (131)] AND THEN [the water drained from the tank].

The derivation of this might be expected to parallel the preceding one, deleting everything but the initial bracketed S of (131c), plus ENABLE for the verbal, and the final bracketed S of (134). But the meaning of the resulting surface sentences must include the actual occurrence of an ensuing event, something not entailed in the usual reading of the *enable* verbs, and so in the derivation of (134) it may be supposed that the AND THEN remains for incorporation in a new deep verbal conflation that can be suggestively designated as LET

(135) [the plug came loose] $\underbrace{\text{ENABLEd} \dots \emptyset \dots \text{AND THEN}}_{\text{LET}}$ [the water
drained from the tank]

whence arise the sentences seen earlier and repeated in (136).

(136) The plug coming loose $\left\{ \begin{array}{l} \text{let} \\ \text{allowed} \end{array} \right\}$ the water (to) drain from the tank.

The general thesis of this study is that causation in the first instance is a relation among events and only as an additional circumstance involves volitional agency. Accordingly, the presentation so far has demonstrated that the essence of the enabling causation situation—even to the appearance of words like *let*—comprises only agentless events. But this additional element can, of course, be included. Although the whole matter will

not be gone into here, it can be noted that only the event of blockage disappearance becomes involved in further causative chains, including ones involving agency, as seen in (137).

(137) I let the water drain from the tank **by pulling the plug loose**.¹²

5 AGENCY

The analysis of causativity to this point—even though it has progressed to quite complex structures—has still basically omitted the concept of agency. This is because agency is largely built on the preceding structures. We turn now to the analysis of agency and its interaction with the preceding structures.

5.1 Basic Components

The procedure followed in this section will be to start with a surface sentence of the simplest form representing what can be considered an agentive situation

(138) I killed the snail.

and, by judicious comparisons with neighboring forms and meanings, to isolate successively the components that make up that situation. It will become evident that the sentence's simplicity is only at the surface, masking the semantic complexity of the situation, and that this continues in the same line of incrementally more complex situations presented stepwise until now in this study.

Consider sentence (139) (where, for the sake of later examples, it is perhaps best to picture the snail clinging to a tree several feet up the trunk). It might at first be thought that there is an equal degree of semantic relation between the referents of *I* and *kill* as between those of *kill* and *the snail*. To see that this is not the case, inspect the situation to which such a sentence refers and notice that inevitably both the snail does something—namely dies—and I do something—for example, hit the snail with my hand. Now, it can be seen that the appropriateness of *kill* (i.e., the correctness with which it refers to the actual situation) depends on what the snail did, not on what I did.¹³ I could have performed the same action of hitting it with my hand, but if the snail does not die, the word *kill* cannot appropriately be used. Moreover, more than simply determining the appropriateness of the main verb, the final event (the snail's

dying) is the sole one that is specified therein and not at all the immediately antecedent situation (my doing something). If the latter is to be referred to, a subordinate clause is where it must be expressed, either generically

(139) I killed the snail by doing something to it.

or as to its particular nature

(140) I killed the snail by hitting it with my hand.

This localization of the final and antecedent circumstances in the main and subordinate clause, respectively, is homologous with the pattern noted for the basic causative situation (in section 3). Indeed, in “my doing something,” “what” I did can be considered in isolation as an independent event—for example, for (140), a motion event where my hand functions as Figure with respect to the snail as Ground—and can be seen to be related to the final event as “causing” to “caused.” Thus, it can be concluded that an agentive sentence contains the specification of a basic causative situation for (140), one that can be represented in isolation as in (141).

(141) The snail died as a result of my hand hitting it.

Now, considered beside (140)—as another surface expansion and semantic particularization of (139)—the sentence in (142) may at first seem completely comparable.

(142) I killed the snail by hitting it with a stick.

It differs syntactically only as to the final noun phrase, and semantically it apparently contains the specification for a similar basic causative situation, isolatedly representable as in (143).

(143) The snail died as a result of a stick hitting it.

But, again, inspection of the situation to which such a sentence as (142) refers reveals that comparatively more is known about it than its containing a two-member causal sequence. Thus, we can note that the stick’s motion is understood not as taking place by itself but, inevitably, as caused (immediately or mediately) in particular by something that I did—for example, manipulating the stick with my hand—so that the sentence can now be seen as containing the specification for a three-event causal chain, representable as in (144).

- (144) The snail died
 as a result of the stick hitting it
 as a result of my hand manipulating the stick.¹⁴

Thus, investigation of (140), considered beside its expansion, shows that even such a simple-looking agentive sentence entails a causal chain of two or more events (of the kind discussed in section 4). And it further entails that, in this chain, the earliest physical event is one in which some body part(s) of mine functions as the Figure (hence, instrumentally ACTs ON some other object).

Note that the concept represented by our term “body part” is intended to extend equally well to the whole of an agent’s body (an option necessary for the characterization of **self-agentive**, treated later). Furthermore, where necessary, as for imaginative speech, the notion can be taken broadly enough to include, for example, “telepathic force beams,” as for a sentence like the one in (145).

- (145) He bent the spoon (by exerting pressure on it) with his mind.

Moreover, for caused events that are psychological rather than physical, the definition of ‘body parts’ must be generalized to include various mental faculties such as concentration, as in (146).

- (146) { I put her out of my thoughts
 I turned my attention away from her } by concentrating on my work.

But still more than what has been observed so far is implied by an agentive sentence, say, that in (140). For if this much were the whole of its criterial characteristics, then the event with a body part as Figure could be taken to occur autonomously or to be caused in turn by *any* type of further causing event, such as an external one like a gust of wind blowing on the body part, as in (147)

- (147) The snail died as a result of the wind blowing my hand against it.
 or even by a body-internal one like a spasm, as in (148).

- (148) The snail died as a result of my hand hitting it by a spasm.

But the meaning of (140) clearly cannot countenance such possibilities. The meaning, rather, entails the circumstance that the body part event is caused by an act of volition on the part of the entity to which the body part belongs, and, accordingly, that this entity is one possessed of the

faculty of will. While it is not clear what final semantic status this volitional act should be accorded, it can be provisionally regarded as a particular nonphysical variety of causing event. Accordingly, the causal chains entailed by the sentences in (140) and (142) can now be seen as lengthened by one additional, earlier event, shown in (149).

- (149) a. The snail died as a result of
 my hand hitting it as a result of
 my willing on my hand.
- b. The snail died as a result of
 the stick hitting it as a result of
 my hand manipulating the stick as a result of
 my willing on my hand.

Here, the entity referred to by *my* is understood as a volitional entity.

Of course, neurophysiologically (the physically manifest correlate of) volition will probably be discovered to comprise one portion of an extensive causal chain of neural and muscular events culminating in the motion of a body part. But the exigencies of semantic organization in natural language would seem to call for a notion of volition as the (not physically manifest) only, and immediately, prior causing event to a body part's motion.

Now, even taken to this stage of analysis, the account is still inadequate to the criterial characterization of agency. True, in the serial-causative situation indicated in (149a), the addition of a volitional event has rendered the situation beyond the referential capacity of a sentence like the one in (150)

(150) The snail died as a result of my hand hitting it.

which simply represents a basic causative situation. But the same three-member causal chain in (149a) *is* implied equally by two different kinds of sentences. Both kinds of sentences represent the penultimate event, that of my hand hitting the snail, as involving agency. But the two kinds of sentence differ as to whether the final event, that of the snail dying, also involves agency. Thus, one kind of sentence specifies no agency for the final event—for example, (151).

(151) The snail died as a result of my hitting it with my hand.

The other kind of sentence does specify agency there, like (152).

(152) I killed the snail by hitting it with my hand.

(Here, of course, these sentences are each to be taken in the reading relevant to the discussion.)

Now, there is nothing strictly causal that distinguishes the situations specified by (151) and (152), inasmuch as both have the *same* set of causally related events (namely, those shown in (149a)). Rather, agency is understood to pertain to the latter's final event only because the entity (the one with will and body) *intends* that that event should result from the preceding event. Here, **intending**—or **intention**—is understood as a concomitant and independent mental event (state) with no causal effect on the chain of events initiated by the volitional act. Thus, finally, the notion of an **Agent** is criterially characterizable as an entity with body (parts), volition, *and* intention, where the body parts respond to volition, and intention applies to these responses and, optionally, to further consequent events.

The optionality just mentioned can be designated by the term **scope of intention**—that is, how much of a causal sequence it is that the entity intends. From an inspection of sentences that specify a causal chain with initial volitional event, it appears that intention always (by the nature at least of semantic, if not also psychological, organization) applies to the body-part event's resulting from the volitional event—this much, therefore, constituting an agentive situation in its own right, contained within a larger context—and that it may apply to progressively more of the succeeding causal sequence. In other terms, one end of the scope of intention is fixed at the beginning of the volitional event, and, without gaps, the other end can be located at the end of the body-part event or of any causally related event beyond that.

Taking for an example the causative sequence indicated in (149a), the scope of intention necessarily begins with the bottom line and extends through the middle line, and then may additionally extend through the top line. The smaller extent of scope is what applies to sentence (151): *The snail died as a result of my hitting it with my hand*. Here, I hit the snail with my hand intentionally (at least in the relevant reading), this much being taken as a contained agentive situation. But I did not intend that the snail should die as a consequence; this result is construed as accidental, “happenstantial,” or the like.

The larger extent of scope is what applies to sentence (152): *I killed the snail by hitting it with my hand*, where I also intend that the snail die thereby (again, in the relevant reading). There appears to be no possibility for a sentence, or for a circumstance, where I, producing the means by

which the snail will die, can intend that the latter event result but not the former.

Variable scope of intention and its independence from observable causality is even more evident for a longer causal chain. Such a longer chain is present, for example, in the situation in which: I (will my arms to) swing a bat, the bat hits a book lying on the floor, the book slides along into collision with a French door, and the glass of the door breaks. Unfortunately for clarity of demonstration, English lacks straightforward syntactic means for expressing longer causal chains. Thus, in the following sentences, relative and coordinate clauses are used several times in lieu of specifically causative constructions. But the paradigm in (153) can still serve in a suggestive way to evidence the points about increasing scope of intention and its independence from “objectively” observable causality.

- (153) a. I swung the bat and it hit a book, which slid into the French door and broke the glass.
 b. I hit the book by swinging a bat toward it and it slid into the French door and broke the glass.
 c. I slid the book into the French door by hitting it with a bat I'd swung toward it and it broke the glass.
 d. I broke the glass of the French door by sliding into it a book, which I'd hit with a bat I'd swung toward it.

5.2 Author and Agent

In this section, we observe that a sentient entity represented as the subject of a syntactically causative construction can either intend the final caused event or not, and that this difference distinguishes the semantic concept of an ‘Agent’ from that of an ‘Author’. In this regard, note first that there is another reading of (152), for which other subordinating forms than *by* are possible or more appropriate

- (154) I killed the snail $\left\{ \begin{array}{l} \text{with my} \\ \text{in} \\ \text{}^x\text{by} \end{array} \right\}$ hitting it with my hand.

which shares with (151) the specification that the final event (the snail's death) is consequent from my intentional actions but is not itself intended. In relation to a situation like that of (151), a form like (154) may be considered to be essentially synonymous. Alternatively, it may be thought to single out the volitional entity and foreground the entity's relation to the

situation as a whole or to its final event. The relation in the latter interpretation can be expressed detailedly as in (155).

(155) “be the entity whose volitional act initiated the causal sequence (which led to the final event) in”

Or, using a term intended to designate most of this, we can more succinctly say, as in (156),

(156) “be the Author of.”

In comparing a form like (154) with its agentive counterpart, or, more simply, in comparing the two distinctly read structures implicit in the ambiguous main clause form in (157)

(157) I killed the snail.

the initially specified sentient entity in the one functions as **Author** and is nonintentional with regard to the event specified, while that in the other functions as **Agent** and is intentional in that regard. These semantic properties make each distinctly read structure consonant or disconsonant with certain other syntactic constituents also having definite specifications as to intentionality, so that a construction combining two of these is accordingly either grammatical or ungrammatical. Such constituents include the following.

- (158) a. *Constituents specifying nonintentionality: S must have initial Author*
 S in/with ...
 S ... too ...
 may S!
- b. *Constituents specifying intentionality: S must have initial Agent (S by ...)*
 S in order that ...
 NP intend to/refrain from S
 NP' persuade/force NP to S
 S!

The functioning of such additional constituents can be illustrated for the main clause in (157) by forms like (159)

(159) I killed the snail by pressing on it *too* hard with my hand.

which can have *I* only as the nonintentional Author of the snail's death, and

(160) I killed the snail *in order* to protect the plant.

which can have *I* only as the intentional Agent of the snail's death.

But the best demonstration of intentionality correlation between a main clause and these further constituents is found where the main clause itself has a distinguishing element—for example, where, for the main verb, there exists a pair of lexical forms that specifically distinguish the intentional from its opposite (unlike the ambiguous *kill*) and are otherwise close in meaning. English affords few good examples,¹⁵ but, for this demonstration, a serviceable enough pair is provided by *mislaid* and *hide*, as in the main clause forms in (161).

(161) I $\left\{ \begin{array}{l} \text{mislaid (unint.)} \\ \text{hid (int.)} \end{array} \right\}$ the pen [somewhere in the kitchen].

These forms can be paraphrased as in (162), where the second braced portion in (a) isolates the semantic matter, other than intentionality, by which the two verbs differ from each other (and, thus, do not constitute an ideal example pair), and where the phrase in (b) is an attempt to capture the common portion of that semantic matter.

(162) a. I $\left\{ \begin{array}{l} \text{put (unint.)} \\ \text{put (int.)} \end{array} \right\}$ the pen in a place
 $\left\{ \begin{array}{l} \text{which I can no longer remember or find.} \\ \text{which others cannot see or find.} \end{array} \right\}$
 b. ... which is obscure.

When substituted for the S in the constructions in (159), only one or the other clause of the pair in (161), as distinguished by their verbs, yields a grammatical sentence.

(163) a. *Structures specifying a nonintentional Author*
 I *accidentally* °mislaid/*hid the pen somewhere in the kitchen.
 I °mislaid/*hid the pen *in* putting it in some obscure place.
May you °mislaid/*hide your pen so it's never seen again!

b. *Structures specifying an intentional Agent*
 I *intentionally* *mislaid/°hid the pen somewhere in the kitchen.
 I °mislaid/°hid the pen *by* putting it in some obscure place.
 I *mislaid/°hid the pen *so that* it would never be seen again.
 I *intend* to *mislaid/°hide the pen somewhere in the kitchen.
 I *refrained* from *mislaid/°hiding the pen in the kitchen.
 He *persuaded/forced* me to *mislaid/°hide the pen.
 *Mislaid/°Hide the pen somewhere in the kitchen!

5.2.1 Undergoer The notions of ‘Agent’ and ‘Author’, especially the latter, must be carefully distinguished from that of **Undergoer**, as in the following three-way contrasts.

- (164) a. I_A hid
 b. I_{Au} misplaced my pen (somewhere in the kitchen).
 c. I_U lost
- (165) a. The masochist (deliberately) _A broke his arm by hitting it with a hammer.
 b. The careless kid (accidentally) _{Au} broke his arm in hitting it playfully with a hammer.
 c. The hapless fellow (by misfortune) _U broke his arm when he fell.

Additional examples with the notion are shown in (166).

- (166) a. I caught my sweater on a nail.
 b. I developed a wart in my ear.

While an Undergoer, equally with an Author, does not intend the event mentioned, she also has not agentively undertaken actions that culminate in that event. Rather, the event is conceived as autonomously occurrent and as HAPPENING TO the Undergoer. In other words, it impinges on the personal state—that is, affects the subjective state—of a sentient entity. Although the construction involved is considered here because of its look-alike mistakability, it is not really interpreted as a causative at all. (Our term “Undergoer” is, of course, different from the “Undergoer” macrorole of Foley and Van Valin 1984.)

The semantics of the Undergoer construction prompts some comment on conceptual imposition by language. As already noted in contrasting our understanding of the *physical* world with *semantic* causation (section 2), enablement (section 4), and volition (section 5.1), a more rationalized interpretation of reality can be overlain, or preempted, by the “logic” of semantic organization. So again here, the semantic force of the Undergoer construction would seem to impose its sense of ‘autonomous event affecting one’s personal state’ on circumstances that vary greatly as to one’s actual causal involvement. For example, the construction classes together both the situation of ‘a wart’s growing on me’, which clearly involves no initiating agency on my part, and the situation of ‘my pen’s getting lost’. But my pen’s getting lost may have involved no agentive precursor sequence on my part—for instance, it could have been blown

away by the wind. Or it could have involved as much of an agentive precursor sequence as an Author situation—the pen could have fallen out as I intentionally withdrew my hand from my pocket.

Formally reflecting the noncausality of the Undergoer construction, there is indeed another surface construction whose sense is essentially the same, but in which the event appears as subject and the Undergoer (to the varying degree that this can be realized at the surface in English) appears in an oblique constituent. Thus, the previous examples have counterparts in the new construction shown in (167).

- (167) a. i. I broke my arm (when I fell).
 ii. My arm broke on me (when I fell).
 b. i. I lost my pen (somewhere in the kitchen).
 ii. *My pen got lost on me (somewhere in the kitchen).
 c. i. My sweater caught on a nail/a wart developed in my ear
 (*on me).

A characteristic of the Undergoer situation is its tendency to imply that the contained event is unpleasant to the Undergoer, as seen in (168), so that, more specifically than “happen to,” the event might be said to “mishap-pen to” or “befall” the Undergoer. For this reason, this type of construction is frequently termed the “adversative” in other treatments.

The term UNDERGO itself is apt in this regard, since it has both a more general meaning, the counterpart of “happen to,” and a specialization of meaning in the negative direction, the counterpart of “befall.”

- (168) a. *My plants are flourishing on me.
 b. °My plants are dying on me.

Syntactically, the situation’s underlying structure can be represented as in (169).

(169) S HAPPENed TO NP_U

With specific forms plugged in, this can derive as in (170).

(170) [my arm broke] HAPPENed TO me_U
 ⇒ my arm HAPPENed-to-break TO me_U
 broke on

The structure in (169) may be universally available: many languages have (and some abound in) sentences of its type, like the Spanish ones in (171). Often in these, the Undergoer appears as a dative, so that the TO, which

INTENDER in (a) and (b) by a pair of structures (presumably embedded in a matrix that specifies their relation, although none is indicated). The rationale for including in the agentive derivation a “(b)” stage, explicitly specifying the Author relation, is so that there will be a syntactic correspondence to the semantic conclusion that an Agent is an entity that both intends an event and initiates a causal chain leading to (i.e., “authors”) the event.

This is another instance of the **derivation of semantic relations**, already seen in note 7. Here, an entity that has the relation of Author (Au) to a causative situation and the relation of intender (In) to an ‘intentional’ situation bears the derived relation of Agent (Au + In \Rightarrow A) to the more complex agentive situation compounded of the simpler two.

The preterminal agentive structure, then, together with its ensuing derivation, might appear as in (179)

- (179) a. [S_R RESULTed FROM S_a]
 NP_{In} INTENDED [S_R RESULTed FROM S_a]
 b. (\Rightarrow) NP_{Au} 'AUTHORed [S_R RESULTed FROM S_a]
 NP_{In} INTENDED [S_R RESULTed FROM S_a]
 c. \Rightarrow NP_A 'AGENTed [S_R]
 [S_R RESULTed FROM S_a]
 d. \Rightarrow NP_A 'AGENTed-TO-RESULT S_R BY S_a
 e. \Rightarrow NP_A AGENTed S_R BY S_a

where, with particular forms plugged in at (e), the derivation continues as follows.

- e'. I AGENTed [the snail died] BY [I hit the snail with my hand]
 f. \Rightarrow I AGENTed-TO-die the snail BY my hitting the snail
 A killed by
 with my hand
 (I killed the snail by hitting it with my hand.)

The observation that an Agent-specifying nominal regularly appears across languages as a sentence’s subject (disregarding, of course, constructions like the passive and perhaps also ergative forms), while an Author-specifying nominal can appear either as subject or in other capacities in the sentence (e.g., as in English, in sentences (154) and (151)), still awaits semantic and cognitive explanation. But the surface manifestation does at least fall out in consequence from the way the derivational syntax has

- (181) a. I killed the snail (new F) by hitting my hand (old F) against it.
 b. I killed the snail (new F) by hitting it with my hand
 (old F \Rightarrow I).

5.3.3 Chaining of Agentive Situations The analysis of agentivity to this point leads to the consideration of a longer chain of agentive situations. Thus, since the derivation leading to the basic Agent structure type in (180f) (*I hit the snail with my hand*) is virtually the same as that leading to the next most complex Agent structure type in (179f) (*I killed the snail by hitting it with my hand*), it seems best to regard the derivation as specifically agentive and as cyclic, applying yet a third time—for example, for the next-again most complex Agent structure type—as exemplified by (182).

(182) I saved the plant by killing the snail on it with my hand.

5.3.4 Generic Causative Components Most of the discussion and illustration in this exposition on agency has involved sentences with a *by*-clause like that in (152), here repeated as (183).

(183) I killed the snail by hitting it with my hand.

How then is one to understand sentences with only an “instrumental” *with*-phrase—the illustrative matter of most other treatments of agency—such as (184)?

(184) I killed the snail with my hand.

Or, further, sentences with neither of these, like the one beginning this section?

(185) I killed the snail.

As compared with (183), which explicitly specifies that I performed an action of hitting the snail, with my hand functioning as Figure, sentence (184) appears rather nonspecific, seemingly asserting nothing more than that my hand was somehow involved. But closer semantic inspection reveals that (184) does not lay itself open to just *any* interpretation consonant with mere involvement, for it cannot refer to a situation in which, for example, my hand simply hung there, nor to one in which nothing more happened concerning my hand than that someone scratched it, and so on. In fact, the sentence specifies implicitly that I performed an action and that, in it, my hand functioned as Figure and was in force-exertional

contact with the snail, a specification that can be represented explicitly in deeper syntactic structures by a subsequently deleted *by*-clause containing the deep ACT ON verbal, like the one in (186).

(186) ... by ACTing ON it with my hand.
 \emptyset

Such a deeper *by*-clause represents generically a portion of an agentive situation that the surface *by*-clause in (183) makes specific. It is just such portions of situations—ones whose generic characteristics are both frequent and standard in human experience—that are often not found explicitly expressed in surface sentences, yet, of course, are entailed in their referent situations. As for the syntactic treatment of such a situational portion, an underlying structure that represents only generic characteristics subsequently gets deleted, with the consequence that the resulting surface sentence winds up functionally, but misleadingly, short. A still shorter sentence like (185) leaves unexpressed at the surface an even greater portion of an agentive situation, for it is not known which body-part is involved nor how much of a causal chain intervenes between the body-part event and the final event. But what is not particularized in (185) is, nevertheless, as determinate as the explicit particulars of (183). The step-by-step analysis beginning this section shows that I volitionally directed *some* body part in an event causally prior to the final one, a generic situational stretch that *can* be represented in deeper structures—for example, by a constituent like the one in (187).

(187) ... by ACTing ON it ... with a BODY PART of mine.
 \emptyset

5.4 Self-Agentive

Beside the sentence

(188) The log rolled down the slope.

which by all our semantic assessments specifies a simple autonomous event, a sentence like

(189) The girl rolled across the field.

would, on the syntactic score, seem to be completely comparable. Yet, while (188) cannot occur in any of the agentive frames of (158b), as indeed befits an autonomous-event sentence, (189) *can* occur in all of them.

- (190) The *log/°girl intentionally rolled. . . .
 The *log/°girl rolled . . . in order to get dirty.
 The *log/°girl intends to roll/refrained from rolling. . . .
 I persuaded the *log/°girl to roll.
 (You, *log/°girl,) roll . . . !

The same difference of behavior can be noticed for the sentence

- (191) The man fell off the cliff.

which specifies a simple autonomous event (with “the man”—i.e., his body—as Figure), as compared with a sentence like

- (192) The man jumped off the cliff.

The sentences in (189) and (192) apparently specify an Agent in the subject and imply intention—that is, are evidently agentive—but are distinct from agentive sentences encountered earlier (*I killed the snail*, *I hid the pen*) in having no direct object nominal nor any apparent other specification of some further physical object (such as a snail or a pen).

The key to understanding how this might be so may be provided by evidence like the following pairs of sentences. They are quite close in meaning, but where one sentence is of the preceding objectless type, the other has a direct object, the reflexive pronoun, as in (193).

- (193) a. The man jumped off the cliff.
 b. The man threw himself off the cliff.
 a. I trudged to work.
 b. I dragged myself to work.
 a. Lie down!
 b. Leyg zikh avek! (Yiddish)
 Lay yourself down!

The reflexive direct object pronoun in the (b) sentences here *does* seem to specify a physical object, namely, the whole body of the Agent. It is, thus, homologous with the body-part nominal *my hand* in the basic agentive structure type derived in *I hit (swung) my hand against the snail*—that is, it specifies a body ‘part’ functioning as the Figure of a simple motion event caused immediately by a volitional event on the part of an Agent who intends all this. With the appropriate modifications of (180e’), the derivational syntax of **self-agentive** forms, as these might well be called, can be suggested as in (194).

- (194) e'. I AGENTed [my BODY MOVED to work]
 BY [I WILLED ON my BODY]
 f. ⇒ I _AMOVED my BODY to work
 ⇒ ⇒ I dragged myself to work.
 g. ⇒ I _AMOVED my BODY to work
 WENT
 ⇒ ⇒ I trudged to work.

Here, the symbol GO has been chosen to represent the (universal?) derived deep morpheme specifying self-agented motion. This morpheme in English subsequently in a derivation necessarily conflates with morphemes of direction and deixis to give the surface morphemes *go* and *come*, or with morphemes of manner and the like to give such surface morphemes as *trudge*.

Grammaticosemantically, a subject nominal (*I, the man*) referring to an entity in its cognitive capacity as willer and intender pronominalizes and reflexivizes a later nominal (*my body*) referring to that entity's corporeality. This might at first be thought to violate some notion of coreferentiality, but it is in fact the norm rather than a special case, for such disparity is found in most sentences with reflexives. It can be seen clearly, for example, in a sentence like (195).

(195) I saw a bug on myself.

Here, *I* refers to my faculty of perception and *myself* refers to my body. This can be indicated more explicitly in a paraphrase (which perhaps also reflects a deeper structural stage of (195)) like

(196) My consciousness experienced-the-image-of a bug on my body.

in which the true coreferential element is contained in the two occurrences of *my*, apparently specifying some not further resolvable notion of essential identity.

Much more investigation is needed to discover where it is, exactly, that a nominal referring to one part can pronominalize and reflexivize a nominal referring to another part of an entity's total self (which comprehends her psyche, her body, and perhaps even—it should not be ruled out beforehand, being possibly relevant for some languages—her possessions and her kin). For example, in the following series of sentences, where a successively smaller volitionally activated portion of the body effects the translational motion of a successively larger unactivated portion, only the last permits reflexivization.

- (197) a. The dog dragged $\left\{ \begin{array}{l} \circ \text{his catch} \\ * \text{himself} \end{array} \right\}$ along.
 b. The dog dragged $\left\{ \begin{array}{l} \circ \text{his lame leg} \\ * \text{himself} \end{array} \right\}$ along.
 c. The (half-paralyzed) dog dragged $\left\{ \begin{array}{l} \circ \text{his rear half} \\ \circ \text{himself} \end{array} \right\}$ along.

And similarly in the comparable series:

- d. i. I lifted my infant son (\neq *myself) off the floor with one hand.
 ii. I lifted my numb leg (\neq *myself) off the floor with one hand.
 iii. I lifted myself (= \circ all of my body except the hand itself) off the floor with one hand (pushing down).

5.5 Purpose and Uncertain Fulfillment

Not usually considered in connection with agentive forms like the sentence

(198) I killed the snail by hitting it with my hand.

are **purpose** forms like

(199) I hit the snail with my hand (in order) to kill it.¹⁶

which can, in fact, be seen as closely related, given the components into which agency was earlier analyzed. For, in both, my hitting the snail with my hand is an intended event caused by a volitional act (i.e., is a simple agentive situation), and it is intended that the snail's death result from the blow. The only difference in substantive content (i.e., rather than in matters of emphasis and foregrounding) is that, in (198), it is asserted that the snail in fact died as a result, whereas, in (199), it is not known whether death resulted or not.

In fact, a three-way comparison can be made. In a sentence like *The snail died as a result of my hitting it with my hand*, the known extent of causation is greater than the scope of intention. And in an agentive sentence like (198), they are equal and coextensive. But in a purpose sentence like (199), it is the scope of intention that exceeds the known extent of causation.

As for syntactic representation, it accordingly follows that the underlying structure of (199) should differ from that of (198), as this was represented in (179a), only as to the quantity of causal sequence asserted as

actually having occurred. Hence, it would contain the following pair of constituent structures.

(200) S_a
 NP_{In} INTENDED [S_R RESULTed FROM S_a]

To facilitate the further treatment of these structures, we will deal with purpose sentences that do not have agentive subordinate clauses, as in (199), but that have nonagentive ones, like (200) or the colloquial (201).

(201) I hit the snail with my hand so (that) it should die.

(202) I hung the clothes out { so they would dry }¹⁷
 { to dry }

Now, the surface-syntactic fact that *as a result (of that)* or *thereby* can be added (with greater or lesser felicity) at the end of, say, (200) and (202) (such constituents being absent here presumably because they were deleted from earlier structures) suggests that the two embeddings in (200) are related in the underlying ‘purpose’ matrix structure as

(203) S_a WITH [NP_{In} INTENDED [S_R RESULTed FROM S_a]]

whose derivation to the surface can be illustrated, with particular forms plugged in, as

(204) a. I hung the clothes out
 with [I INTENDED that they would dry as a result of
 that]

b₁. ⇒ ...
 WITH my INTENDING that they would dry
 ∅ intending
 as a result of that
 thereby

(I hung the clothes out, intending that they would dry
 thereby.)

b₂. ⇒ ...
 WITH the INTENTION on my part that they would
 in order, so ∅
 dry as a result of that
 thereby

(I hung the clothes out so that they should dry (thereby).)

Once isolated, the extension of intention past known effectuation can be discovered elsewhere—for example, incorporated in the meaning of verbs like *wash* and *rinse*, which in one sector of their usage are roughly characterizable as in (205).

(205) perform certain actions in order to remove the $\left\{ \begin{array}{l} \text{dirt} \\ \text{soap} \end{array} \right\}$ from

Thus, it would be infelicitous to use these verbs in referring to a circumstance in conflict with the implicit intentions, as in

(206) *I washed the shirt in dirty ink.

whereas, by contrast, verbs like *soak* and *flush*, which imply no intentional component extending beyond the actualized physical one (which is close to that of the preceding verbs), can be used comfortably for the same circumstance.

(207) a. °I soaked the shirt in dirty ink.

b. °I flushed dirty ink through the shirt.

The *wash* type of verb can be contrasted in the other direction with verbs like *clean*, which go on to specify the actualization of what for the others is merely an intention.

(208) a. °I washed the shirt, but it came out dirty.

b. *I cleaned the shirt, but it came out dirty.

We have just seen that the verbs *soak*, *wash*, and *clean* in that order form a progressive series with respect to scope of intention and its realization. With many differences overlooked, something like this semantic progression is also evident in the series *throw toward*/*throw to*/*throw IND.OBJ*. For, *throw toward*, as in

(209) I threw the ball toward °him/°the tree.

specifies no intentions extending beyond the physical actuality of a missile's (course of) flight. But *throw to*, as in

(210) I threw the ball to °him/*the tree.

further specifies the Agent's intention that a second entity catch the missile in response to its approach (and, of course, also specifies that entity as an Agent as well, capable and desirous of catching the missile). This suggests that (210) arises by conflation from a structure resembling the paraphrase in (211).

5.6 Caused Agency

We have so far been analyzing out the semantic factors that comprise agency. In this section, the exercise of such agency is seen as an event, specifically, as a cognitive event, that can itself be caused. Accordingly, we here analyze out the semantic factors that pertain to cognitive events and their causation.

By way of preparing the ground for this section's topic, we note that, although the semantic analysis of causation in this study has been largely of its application to physical events, most of it seems to apply as well to mental events. This is partially illustrated by the following sentential paradigm of causative types (analogous to that in (1)), which involve the causing of the mental event of someone's becoming sad.

- (216) a. I became sad as a result of news of his death coming to me.
 b. News of his death coming to me _Esaddened me/_Emade me (feel) sad.
 c. News of his death _Isaddened me (in coming to me).
 d. She _{Au}saddened me in giving me news of his death.
 e. She _Asaddened me by giving me news of his death.

Now, since an entity's volition and intention—the criterial components of agency—are also mental events, one might expect to encounter situations in which these, like sadness, are, in turn, caused. Here, that is, some event would (immediately or mediately) cause an entity's exertion of will on her body (parts) and her intention that certain events (at least the appropriate body (part) motions) result therefrom. Such a semantic phenomenon can be called **caused agency** or **inductive causation** (other treatments have used the term “instigative”). Indeed, something in the nature of this semantic phenomenon is evident in the situations specified by sentences like (217). As before, the causing event (smoke getting in the eyes) can be the earliest considered event, as in (a) and (b), or can in turn result from events initiated by an Agent, as in (c).

- (217) a. The squirrel left its tree as a result of smoke getting in its eyes.
 b. Smoke getting in its eyes _Emade the squirrel leave its tree.
 c. I _Amade the squirrel leave its tree by fanning smoke in its eyes.

5.6.1 Structure of Psychological Causativity Earlier it was determined that the semantic organization of agency was so structured as to contain a fixed set of particular components, namely, the events involving intention,

volition, and body parts. Similarly, it is an issue to ascertain whether there are any determinate components in the mind-internal causal stretch leading to a final mood state or exercise of agency. Now, various mental events can be *taken* to occur along the way—for example, for (216), that the arrival of news of death leads to my hearing and understanding the news, that this (against a background of my feeling some bond with the deceased) causes a sense of loss, and that this, in turn, causes my feeling of sadness. And indeed, various mental events that are taken to occur along the way can be specified at the surface, as, for example, for (217b), in the following sentences (where, after the initial phrase, the remainder of the subject clause, recapping some prior causal events, can be omitted).

- (218) a. Smoke getting in its eyes—
 b. Feeling pain from smoke getting in its eyes—
 c. Wanting to stop feeling pain from smoke getting in its eyes—
 d. Deciding to move as a result of wanting to stop feeling pain from smoke getting in its eyes—made the squirrel leave its tree.

And, for its part, this last line involving ‘decision’ can be built up to in something like these three incremental stages.

- (219) a. Weighing alternative courses of action as a result of wanting to stop feeling pain from smoke getting in its eyes—
 b. Settling on moving as the best course of action as a result of weighing the alternatives because of wanting to stop feeling pain from smoke getting in its eyes—
 c. Intending to move as a result of settling on that as the best course of action by weighing the alternatives because of wanting to stop feeling pain from smoke getting in its eyes—
 —made the squirrel leave its tree.

But most of these semantic distinctions seem more to be expressive of the speaker’s notions than to be structurally determinate in accordance with universal semantic organization.

Considering further, then, we do come up with two more likely candidates for playing a structural role. In the case where the causal sequence begins externally (by however many removes) to the sentient entity, there is one probable candidate for semantic-structural determinacy: an event of (sensory, informational, and so on) **IMPINGEMENT** on the entity (examples include news *coming to me*, smoke *getting in its eyes*). And one additional possible candidate is an internal event (perhaps the earliest

such) of COGNIZING or EXPERIENCING such an impinging event (e.g., my hearing and understanding the news that has come to me).

In the search for yet another candidate, we now look briefly at a set of situations related to caused agency for which a criterial, focal component is abstractable, and will then consider whether the component is imputable also to caused agency. This component is an event of what may be termed **intent**, to be distinguished from that of **intention**, the notion dealt with until now. Where the latter entails expectations for certain consequences of undertaken actions and is involved in constructions with a DIFFERENT-subject complement, especially taking *that*

(220) I intended that they would become politically independent as a result of my establishing a fund for their operation.

the former entails expectations of one's subsequently undertaking an action the idea for which one now has in mind, and it is involved in constructions with a SAME-subject complement, especially taking *to*.

(221) I intended to establish a fund for their operation later that week.

We have already looked at one of the situations that criterially involves this intent component. It is that of 'decision', wherein an entity enters a state of intent (to perform a subsequent action) as a result of weighing alternative courses of action and choosing one of these, as in (222).

(222) The squirrel decided to leave its tree as a result of smoke getting in its eyes.

Another such situation is that of 'persuasion', where the entity enters a state of intent (to perform a particular subsequent action) as a result of another entity's presenting arguments (or acting otherwise, in the more generic form of this situation type) for the course of action, as in (223).

(223) I persuaded him to leave the building.

To this speaker, *persuade* does not specify the actual carrying out of the intent, since it is possible to continue (223) with *but he later changed his mind and stayed*.

A third situation is that of 'intended persuasion' (which includes the imperative), where the entity's entering a state of intent (to perform a subsequent action) is intended (in our original sense) by another entity to result from the latter's arguments, directions, and so on, as in (224).

- (224) a. I urged/instructed/ordered her to leave the building.
 b. Leave the building!

The main verbs in (222) to (224) are understood here to arise by conflation from deeper constituents, roughly like the following forms. These contain the specification of ‘intent’, indicated here by the deep verb INTEND’, which is marked with a prime to distinguish it from the deep verb INTEND that represents the concept of ‘intention’.

- (225) a. (for NP1) by CHOOSing this ALTERNATIVE, (to) COME-to-INTEND'
 (to ...) decide
 b. (for NP2) by-PRESENTing-ARGUMENTs, (to)AGENT-to-INTEND'
 (NP1 to ...) persuade
 c. (for NP2) (to) GIVE-DIRECTIONS, INTENDing-to-AGENT-to-INTEND'
 (NP1 to ...) order

Caused agency differs from these situations in that it includes the actual undertaking of the final action. But possibly it incorporates the meaning of one or another of these situations within itself. In that case it, too, would have the event of ‘intent’ (to perform the final action) as a fixed structural component. Among the evidence for such an incorporation are the following two observations: The prompting event in a situation of ‘decision’ can be introduced in a sentence not only by *as a result of*, but also—in fact, par excellence—by *because (of)*. But the same is true for a situation of caused agency.

- (226) The squirrel $\left\{ \begin{array}{l} \text{decided to leave} \\ \text{left} \end{array} \right\}$ its tree $\left\{ \begin{array}{l} \text{as a result of} \\ \text{because of} \end{array} \right\}$ smoke
 getting in its eyes.

This suggests that the whole ‘decision’ situation, along with its ‘intent’ component, is incorporated therein. And a comparison of their meaning suggests that the situation of ‘intended persuasion’ represented by

- (227) I instructed the maid to clean the kitchen.

is contained whole—perhaps along with the structuralness of its ‘intent’ component—in the caused-agency situation represented by

- (228) I had the maid clean the kitchen.

which seems, in addition, to specify only that the maid was in fact ‘persuaded’ and that she actually carried out the instructions.

Among the situations just treated, we can discern a rough series of three types, each of which is expressed by certain surface verbs. For the situation of ‘intended persuasion’, which does not entail the acquiring of intent, there are the verbs *urge*, *instruct*, *order*, and so on. For that of ‘persuasion’, which entails the acquiring of intent but not necessarily performance, there are the verbs *persuade*, *convince*, *talk into*, *decide* (someone to . . .), *determine* (someone to . . .), and so forth. And for that of ‘caused agency’, which, in addition, entails performance, there are the verbs *induce*, *cause*, *get*, *have*, *make*, *force*, and so on.

5.6.2 Differences among Particular Caused-Agency Verbs Of this last group of English verbs, none (though *induce* is perhaps among the closest) seems to specify the causation of agency relatively “purely”—that is, without further strong specifications as to the causation’s type, means, and so forth. But we can here look briefly at some of these verbs’ additional idiosyncratic specifications.

The verb *get* generally can follow an Agent but not a causing event, while, at least for some speakers, *cause* generally exhibits the reverse pattern.

- (229) a. Smoke getting in its eyes $\left\{ \begin{array}{l} \text{induced} \\ * \text{got} \\ \text{caused} \end{array} \right\}$ the squirrel to leave its tree.
- b. I $\left\{ \begin{array}{l} \text{induced} \\ \text{got} \\ * \text{caused} \end{array} \right\}$ the squirrel to leave its tree by fanning smoke in its eyes.

More accurately, *get* properly occurs when in the total situation there is some entity—an initial Agent is just one case of this—who considers the caused action proper or desirable. For instance, in

- (230) The forecast of rain for the following week finally got him to fix the roof.

the so-considering entity could be the speaker (I, e.g., thinking it was shameful how he let his house go unrepaired) or, indeed, the influenced Agent (he, e.g., needing and wanting the excuse that the forecast afforded him).

The verb *have*, likewise, must follow an Agent, but it is there incompatible with a *by*-clause.

- (231) a. *My giving her instructions had the maid clean the kitchen.
 b. °I had the maid clean the kitchen (*by giving her instructions).

Moreover, *have* specifies that the causing is done by means of giving instructions that are to be followed (i.e., specifies a circumstance where ideas are communicated and comprehended), so that, accordingly, it is not appropriately used where the influenced Agent is not a sentient entity (e.g., an infant or animal).

- (232) *I had the squirrel leave its tree.

As a verb expressing the causing of agency, *have* of course also requires that the complement subject and verb be agentive (and, so, can be added to the list of similar constituents in (158b)).

- (233) I had him $\left\{ \begin{array}{l} \text{*misplace} \\ \text{°hide} \end{array} \right\}$ the pen somewhere in the kitchen.

The other verbs expressing caused agency have this requirement too, but they cannot be used in a demonstration like (233) because they also have other usages without the requirement (as in °I induced/made/got him to misplace the pen). The verb *make* seems to specify that the causing is done by means of threats (i.e., contingent assurances of causing pain).

- (234) a. I $\left\{ \begin{array}{l} \text{°got} \\ \text{°made} \end{array} \right\}$ him (to) clean the garage by threatening to cut his allowance (if he didn't).
 b. I $\left\{ \begin{array}{l} \text{°got} \\ \text{*made} \end{array} \right\}$ him (to) him (to) clean the garage by promising to raise his allowance (if he did).

In general, each causative verb or inflection in a language has its own pattern of requirements for the type of causative situation in which it can be used. Such causative types differ from each other with respect to the particular structural factors that they comprehend. The list in (235) provides a heuristic example of the kind of array of such factors that might be developed for ascertaining a particular causative element's requirements.

- (235) a. INSTRUMENT/EVENT-CAUSED PHYSICAL (i)/
 MENTAL (ii) EVENT

- i. A rock (flying into it) broke the window.
- ii. A knife (flying at him) scared the spy.
- b. AGENT-CAUSED PHYSICAL (i)/MENTAL (ii) EVENT
 - i. Pat broke the window by throwing a rock into it.
 - ii. Pat scared the spy by throwing a knife at him.
- c. INSTRUMENT/EVENT-CAUSED AGENCY OVER A PHYSICAL (i)/MENTAL (ii) EVENT
 - i. Money (offered to her) induced Pat to break the window.
 - ii. Money (offered to her) induced Pat to scare the spy.
- d. AGENT-CAUSED AGENCY OVER A PHYSICAL (i)/MENTAL (ii) EVENT
 - i. I induced Pat to break the window by offering her money.
 - ii. I induced Pat to scare the spy by offering her money.

Here, *have*, as already noted, can be used only for type (d). *Make* can be used for all the types, though with rather different meanings in each (note, e.g., its difference in *The rock made*—vs. *John made the window break*). The Turkish causative verb inflection, as observed by Zimmer (1976), can be used for all but (c), leading some—for example, Givón (1975) and Brennenstuhl and Wachowicz (1976)—to abstract a notion of hierarchical “control,” common to the ones but not the other.

5.6.3 Inducing Syntactically, caused agency can in the first instance be represented by an embedding of an agentive structure in any causative matrix—for instance, preceding RESULT FROM or following (to) EVENT or (to) AGENT, as illustrated by (236a). However, we might want the combined specification of the caused-agency situation’s defining semantic elements—presumably corresponding to a clustering of similar elements in human cognition, a clustering that might be called (the concept of) ‘inducing’—to occur at a single locus. Accordingly, a later stage of syntactic representation may be derived containing the conflation of the earlier matrix causative verb—for example, EVENT or AGENT, with a copy of the embedded structure’s AGENT verb, a conflation that can be represented by _EINDUCE (for *to* EVENT *to* AGENT) or by _AINDUCE (for *to* AGENT *to* AGENT), as in (236b). The ensuing derivation after this stage might proceed as indicated in the remainder of (236).

- (236) a. I AGENTed [he AGENTed [the snail died]] by ...
-ing ...

Other verbs of this nature in English are *drive*, *chase*, *smoke (out)*, *scare (away)*, *lure*, *attract*, *repel*. Most of these, unlike *send*, specify an idiosyncratic means or manner of inducing. One such, *lure*, was analyzed earlier. Another example is *drive*

(239) $\underbrace{\text{by-CREATing-UNPLEASANTNESS-(for—), (to) }_A\text{INDUCE-to-go-(THENCE)}}_{A\text{drive}}$

as in the following sentence, which has, externally to the main verb, additional concurrent specifications of direction and means.

(240) I drove the squirrel from its tree by fanning smoke in its eyes.

In terms of a table of factors like that in (235), the present verbs have different use patterns. Some, like *drive*, can have an Agent, Author, Instrument, or causing event as subject (thus paralleling *make*)—for example,

(241) $\underbrace{\text{in-BEing-UNPLEASANTNESS-(for—), (to) }_1\text{INDUCE-to-go-(THENCE)}}_{1\text{drive}}$

as in (242).

(242) The smoke drove the squirrel from its tree.

Others, like *send* (just like the *have* that it incorporates), require an Agent as subject.

(243) My need for cigarettes $\left\{ \begin{array}{l} \circ \text{made/*had the maid go} \\ * \text{sent the maid} \end{array} \right\}$ to the store
for a pack.

Still others, like *attract* and *repel*, seem intrinsically to require an instrument or causing event as subject, as in sentences like (244)

(244) (The inclusion of) the rodeo attracted crowds to the fair.

since, in sentences with an Agent, a *by*-clause seems best to construe with an implicit verbal notion of “managing (to)” or “succeeding (in)” (hence, to construct with a deleted deep verb specifying this).

(245) The owner attracted [$<$ MANAGED TO/SUCCEEDed IN (attracting)] crowds to the fair by including a rodeo.

There is a still further degree of conflation for caused agency than that manifest in the preceding cases. Here—in addition to (a) the fact of

resolving the situation of this last example into some of its components and interactions, as is attempted in (258).

(258) I, at various times partly determined by my monitoring of the shifting stage in the baby's eating process during a sitting, conveyed food to and into the baby's mouth, using physical stimulation to induce it to open this when kept closed, and the baby opened its mouth each time in response to visual or tactile cues, otherwise "mouthing" and swallowing the food irregularly, during the sitting.

Another issue to investigate pertains to situations that are represented by agentive syntax, but in which an event proceeds autonomously once it is initiated by an Agent. Two types of such situations are illustrated by the following sentences.

- (259) a. i. I'm drying the clothes.
 ii. I'm thawing the meat.
 iii. I'm burning a candle in his memory.
 iv. I'm boiling the water.
 v. I'm growing corn in that field.
 b. i. We're cooling down the blast furnace.
 ii. I'm draining the water from the tank.

Here, for example, the clothes dry on their own once I have hung them up, the meat thaws on its own once I remove it from the refrigerator, the candle continues burning once I have lit it, the water comes to a boil once set on the burner, and the corn grows by itself once planted. This post-initiation autonomy is expressed by a syntactic structure, as in (260a), that is the same as that used for the more expected reference to a continuous causal input, as in (260b).

- (260) a. I'm drying the shirt outside on the clothesline.
 b. I'm drying the shirt by flapping it in the air.

Needing explanation is the fact that the (b) sentences of (261) can be reformulated in an enabling construction with *let*, while the (a) sentences cannot.

- (261) a. *I let the candle burn by lighting it.
 *I let the water boil by setting it on the fire.
 *I let the corn grow by planting it.

- b. ° We let the blast furnace cool down by extinguishing the fire.
- ° I let the water drain from the tank by pulling the plug.

One of the more significant issues wanting attention pertains to the existence of gradience in causative concepts. Thus, there is an apparent continuum in the degree and quality of the causality expressed by surface sentences, from the rigorously causative to the sovereignly autonomous, as suggested by the (b) forms in the following series.

- (262) a. i. I became sad *as a result of* hearing news of his death.
 ii. Hearing news of his death *caused* my becoming sad.
- b. i. I became sad *in response to* hearing news of his death.
 ii. Hearing news of his death *occasioned* my becoming sad.
- c. I became sad.

Such a continuum goes in the face of this chapter's theoretical treatment of the semantics and syntax of causation in terms of discrete all-or-none factors. One approach, which faults neither the observations of gradience nor of discreteness, would conclude that a sentence located along the continuum is conflated from a deeper sequence of interleaved causative and autonomous structures containing (adverbial, etc.) specifications of various attendant circumstances. Thus, for example, the (b) sentences of (262) well might be taken as compactions of (1) a strictly causative structure specifying that my hearing the news of his death created (caused to come into being) in my mind a particular Ground, or basis ('occasion'), and (2) a strictly autonomous structure specifying that my mood of sadness grew of its own accord on (as a "response" to) that Ground. This approach gains some support from the evidence of sentences that as a whole express a particularistic, mediate notion of causality, like the preceding (b) sentences, but that also explicitly set forth causative and autonomous subparts containing additional "adverbial" specifications—for example,

- (263) Poverty $\left\{ \begin{array}{l} \text{brings about} \\ \text{leads to} \end{array} \right\}$ the conditions that $\left\{ \begin{array}{l} \text{allow} \\ \text{favor} \\ \text{foster} \end{array} \right\}$ the growth of delinquency.

Here, the two verbal expressions in the first set of braces both specify actual causation, with *lead to* also indicating that this is of a continuing, incremental, and cumulative sort. And the verbs in the second set of braces all specify an event of true autonomy, ensuing amid a break in direct causation—an almost placental interface. Further, the succession of the

verbs within the second set of braces indicate an increasing provision of the “materials” needed by the ensuing event to carry on.

Another significant matter for investigation is the variation within and across languages as to which portion of the (causal) circumstances surrounding an isolably simple event must (or need not) be expressed at the surface. For example, in an English sentence referring to the situation of a customer asking a store owner the price he has set on an item, there is the open option of mentioning neither role, either role, or both roles played by the two human participants.

- (264) a. How much is this?
 b. i. How much do you charge for this?
 ii. How much do I pay for this?
 c. i. How much are you charging me for this?
 ii. How much do I pay you for this?

Similarly free as to the mention or lack of mention of the human participant are sentences with the verb *turn up*

- (265) a. The cufflink I’d been looking for for a week finally turned up at the bottom of the clotheshamper.
 b. I finally turned up the cufflink I’d been looking for for a week at the bottom of the clotheshamper.

even though the situation referred to by a sentence without such mention, like (265a), necessarily and clearly involves the activities of a volitional and perceiving entity. On the side of required mention, English sentences with the verb *find*—otherwise quite comparable to those with *turn up*—can be cast only in the (265b) form, specifying the involved entity. In the same vein, in reference to a situation where a glass that has been in my grasp falls to the floor, a normal (rather than philosophical, scientific, humorous, or child’s) English sentence must make mention of my involvement

- (266) a. *The glass fell.
 b. °The glass fell out of my hand /°I dropped the glass.

in contrast with Hindi, for one, which colloquially says the equivalent of (266a).

The obverse of the preceding issue is the matter of how distant a portion of the circumstances surrounding an event *can* be expressed at the surface as directly involved. At least the notion of responsibility, for one

case, can be attributed to an entity even at many removes. For example, in one science fiction film, a person was held responsible for the sinking of a ship (in as many words) in that he had abducted two natives of a mystic island whose inhabitants called forth a giant creature that swam the ocean in pursuit of its charges and ran into the ship.

Notes

1. This chapter is a moderately revised version of Talmy 1976b, but it leaves much of the original paper unchanged. Thus, it still shows in precursor form some of the ideas that became more developed in subsequent work (and that can be read here in other chapters)—for example, ideas of force dynamics. And it also retains some features of then-current linguistic approaches—for instance, of transformational grammar and of generative semantics. Apart from these historical retentions, though, its analysis of the semantic factors that comprise causativity and that distinguish types therein remains valid. More specifically, the main objective of this chapter has been, by following a stepwise procedure, to analyze out component after component of the semantic complex that constitutes linguistic causativity, and to show the relationships of these components to each other. And while these interrelationships of semantic components are here represented in a derivational format, they can also be readily understood in other terms—for example, in terms of conceptual structure and of lexical semantic structure.

Most of the original paper's terminology has been updated to accord with my current usage and with the other chapters in this volume. But the material pertaining to force-dynamic concepts has been left intact to serve as a record of its precursor form.

2. With respect to the example in (1b), my dialect of English permits the use of *from* to introduce a clause expressing cause. Readers to whom this is not acceptable can substitute the phrase *as a result of*.

In everyday speech, a possessive *'s* form need not be present in a nominalized clause. Since no causative issues are affected, it will in fact usually be omitted for greater colloquial effect in the examples.

As for this last matter, many example sentences will still be bookish, which may be felt to detract from the force of the argument. They are used, however, because they often reflect at the surface the form inferred for certain deeper structures more closely than do colloquial forms, which on the contrary often seem to arise as the result of further derivation.

3. The following are the symbols I use in this chapter to indicate sentences' "acceptability." The asterisk (*), as in standard practice, marks an ungrammatical or otherwise unacceptable sentence; a raised x (x̂) marks a marginal sentence; and an acceptable sentence is optionally marked with a raised circle (°), a mnemonic for "okay."

4. This circumstance is basically a case of the earlier "poetry-writing" situation, but it is considered separately here because its event by turns both does and does not take place.

5. Similarly, as will be explicitly treated later, an Agent causative sentence like

(i) I broke the window with a hammer.

which specifies only the causally involved object, always at least implies a causal event

(ii) I broke the window by ACTing ON it with a hammer.

and can always, in addition, supply the specifications for one, as in (iii).

(iii) I broke the window, by hitting it with a hammer.

6. Examples that seem to contradict this principle—for example,

(i) The aerial_i toppled off the roof as a result of its_i wobbling.

can always be seen to imply a form expressing action on the element—for instance,

(ii) The aerial_i toppled off the roof as a result of its_i wobbling's acting on it_i.

or, with more specifics added in,

(iii) The aerial topped off the roof as a result of the wobbling it underwent (from the wind) loosening it.

7. In derivational terms, it may be deemed that there exist at least the following four types of derivational process: (i) derivation of syntactic structures, (ii) derivation of lexical forms, (iii) derivation of syntactic relations, (iv) derivation of semantic relations. Of these, only the first three have been recognized in the literature, and only the first two have received comprehensive treatment. The fourth is what is instantiated here and below.

8. How the *off* might arise, as well as how the whole derivation from (103a) to (103b) might proceed transformationally, is gone into in Talmy 1975b under the term “clause conflation.”

9. The underlying structure for this should perhaps have some other matrix verbal than BE-the-INSTRUMENT-IN (or, BE-the-IMMEDIATE-INSTRUMENT-IN), maybe something like BE-a-MEDIATE-INSTRUMENT-IN.

10. Usually, as in (114), this will be a case of overcoming a natural tendency to move—that is, keeping the Figure in place. However, the reverse dynamic opposition—that is, keeping the Figure moving—is also possible, as in the situation represented by (i).

(i) The stirring rods breaking let the ingredients settle (thereby ruining the experiment).

11. We posit that the release of restraint is a distinct semantic circumstance. This poses a problem, it should be noted, for the thesis that complex causative situations consist only of simple events and basic causative situations. This is because the circumstance, as specified in (128)'s subject clause, is not a bona fide instance of either.

12. The *let* appearing here, which takes a *by*-clause specifying the enabling event and which is kin to the *let* of (125), which takes a subject clause with the same specification, is to be distinguished from a homophonous form. This further *let'*

takes only an Agent as subject and indicates that he refrains from or does not think to prevent an already ongoing event.

- (i) I let' the water drain from the tank
 - ... because I didn't care if it ruined the rug.
 - ... because my attention was turned elsewhere.

It has difficulty taking a *by*-clause, which would have to specify the mode of refraining.

- (ii) I let' the water drain from the tank ^xby not putting the plug back in.

13. Of course, the use of *kill* over *die* requires *that* I did something, but even this much relation between *I* and the verb is absent where there is but one lexical form involved, as in *The snow melted*/*I melted the snow*.

14. As for surface representation, the further antecedent event, unspecified in (142), cannot be expressed in an additional subordinate clause

- (i) *I killed the snail by hitting it with a stick by manipulating the stick with my hand.

nor in the reduced phrasal form of such a clause where this results in a sequence of two *with*'s,

- (ii) *I killed the snail by hitting it with a stick with my hand.

but otherwise it *can* be expressed in the following reduced phrase.

- (iii) °I killed the snail by hitting (swinging) a stick against it with my hand.

15. Another candidate for an Author/Agent verb pair is that in

- (i) I spilled/poured water over the embers.

This pair is not ideal, though, because *pour* may permit an Author reading for some speakers, while *spill* does not necessarily require an intended causal sequence before the final unintended event, as *mislays* does.

By contrast with English, verbs in Sinhalese (apparently all except the one meaning 'to fall') have two forms, one specifying nonintentionality and the other specifying intentionality.

16. Not to be confused here is a nonpurpose reading of this form—especially evoked where *in order* is lacking and the *to*-clause has a low intonation—that is paraphrasable as (and presumably derivable from something resembling)

- (i) I hit the snail with my hand as the method *by which I killed it*.

17. The perhaps full surface set of standard English purpose clause introducers (i.e., excluding special expressions like *for the aim of*) running from the bookish to the colloquial, is, for the agentive

- (i) I hung the clothes out $\left\{ \begin{array}{l} \text{(in order) that I might} \\ \text{(in order) to} \\ \text{so (that) I might} \\ \text{so as to} \end{array} \right\}$ dry them (thereby).

and for the nonagentive

(ii) I hung the clothes out $\left\{ \begin{array}{l} \text{(in order) that they would} \\ \text{so (that) they would} \\ \text{(for them) to} \end{array} \right\}$ dry (thereby).

18. Alternatively, on the model of the following surface-sentence pair

- (i) a. I threw the ball to go into the basket at the other end of the court.
 b. I threw the ball into the basket at the other end of the court.

which differ as to whether or not the intended final event is specified to have occurred, the sentence *I threw the ball to him* could be thought to arise from a deeper structure resembling

(ii) I threw the ball to go into his GRASP.

and *I threw him the ball* from one resembling

(iii) I threw the ball into his GRASP.

where the deep noun GRASP would be understood to represent the conflation of complex structures yet to be determined.

19. Such indications of semantic notions as MAKE THREATs and GIVE INSTRUCTIONS appearing here, or PRESENT ARGUMENTs, and so on appearing earlier, are intended merely as discursive counters, not seriously to be taken as deep morphemes, each specifying a discretely distinguishable notion (as, surely, MAKE, GIVE, and PRESENT here cannot be taken to do, being used, rather, to reflect surface usage).

20. The increase in conflatedness from (250) to (249) would be shown to greater effect if there were an intervening stage. The comparable sentences in (i) do constitute a three-stage series.

- (i) a. I arranged with the hospital staff to have a specialist examine her.
 b. I arranged to have a specialist examine her.
 c. I arranged a specialist's examining her.

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