

Chapter 4: Blending analysis of the Hebrew causative stem *hif'il*

4.0 Introduction

I will start my blending analysis of the Hebrew verbal system with an analysis of the stem *hif'il* (hiCCiC). *Hif'il* verbs are traditionally defined as the *causative* derivation of basic *pa'al* verbs (and sometimes of *nif'al* verbs as well). For example, *barax* (b.r.x - *pa'al*) means 'to run away', while the *hif'il* form *hivriax* (b.r.x - *hif'il*) means 'to chase away' (or 'cause to run away'); *axal* (? .x.l. - *pa'al*) means 'to eat (food)', while *he?exil* (? .x.l - *hif'il*) means 'to feed (somebody) (food)' (or 'cause to eat food'); and *nixnas* (k.n.s-*nif'al*) means 'to enter', while *hixnis* (k.n.s-*hif'il*) means 'to bring in' (or 'cause to enter').

The relative regularity of the stem and its semantic similarity to analytic causative constructions (such as 'make V' in English, or 'faire V' in French) as well as synthetic causative constructions (such as V-*ase* in Japanese) attracted generative accounts of the stem based on universal formalisms of causative verb formation, such as "transitivization" (as in Saad & Bolozky, 1984), or "clause-union" (as in Cole, 1976) (see discussion of these formalisms in section 3.4). In Saad & Bolozky (1984), the *hif'il* verb is characterized semantically as an instance of 'valency increase' of an embedded verb (an additional actant/argument is added to the basic verb), and the role of the morphology is to mark the increase in valency. In Cole (1976, 1983), a process of clause union on the underlying causative logical structure together with universal grammatical principles such as the Accessibility Hierarchy Principle (originally proposed in Keenan & Comrie, 1972) derive the *hif'il* verb and determine the grammatical roles of its NP arguments.

In this chapter, I propose a blending analysis of *hif'il* sentences which is very similar to the blending analysis of English Caused-Motion sentences (described in chapter 2): a conceived causal sequence of events is blended with one of the available syntactic constructions in Hebrew (based on observed similarity in the generic structure of the conceived event, and the generic semantic schema of the syntactic construction). One predicate within the complex sequence of events is mapped into the verbal slot of the integrating construction (just as was suggested in the analysis of English Caused-Motion sentences). In the case of *hif'il* sentences, the predicate being mapped into the verbal slot in the integrating construction is always the *effected predicate* in a causative event (i.e., the predicate denoting the effected sub-event within a conceived causal sequence of events). The 'content' of the predicate is expressed in the blend by the verbal consonantal *root*. The verbal morphology (the *hif'il* stem) provides grammatical information about the grounding causal scenario and the blending operation: it marks the fact that the event denoted by the consonantal root is an *effected* event within a causal sequence (rather than, say, a *causing* event, or just an *autonomous* non-causative event - for the grammatical marking of the latter, see the discussion in chapter 5).

Figure 4-1 provides a schematic characterization of the blending operation involved in the generation of *hif'il* sentences. The figure thus defines the *mapping schema* associated with the grammatical pattern *hif'il*. The figure focuses on the mapping of predicates into the verbal slot in the integrating syntactic construction, and abstracts away for the moment from the particular syntactic construction being used (Input 2) and the mapping of participants from the conceived event into the integrating syntactic construction (these issues will be discussed in detail in the next section). The mapping schema associated with *hif'il* (as illustrated in Figure 4-1) is therefore an *abstraction* (or *generalization*) over all blending operations underlying the generation of causative *hif'il* sentences.

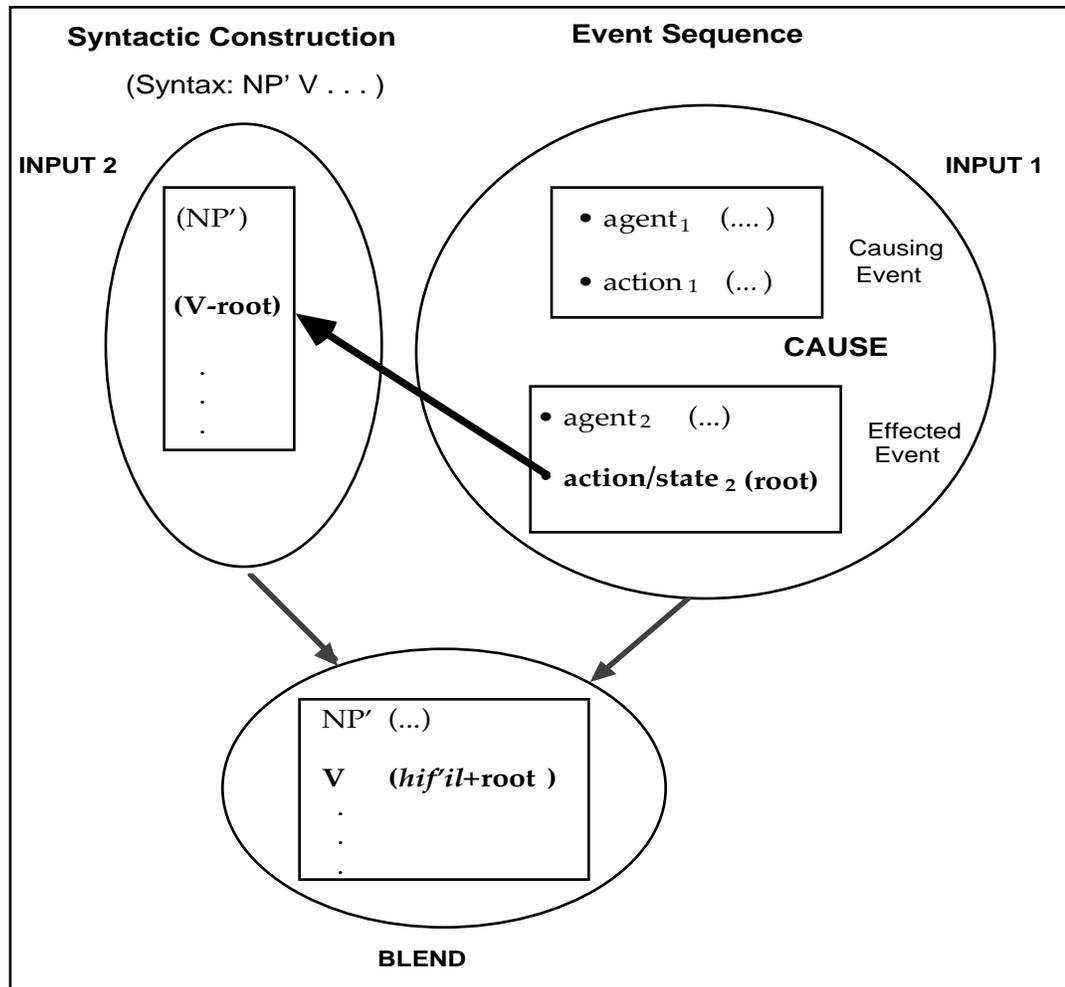


Figure 4-1: The mapping schema of predicates in *hif'il* sentences

In the rest of this chapter, I will discuss variations in the *syntactic environment* in which *hif'il* verbs occur. I will suggest that variations in the syntactic pattern (or "argument structure") are due to semantic differences in the original conceived causal sequence of events, which motivate the blending of the conceived causal sequence into different syntactic constructions. Advantages of the blending analysis over previous accounts of *hif'il* sentences, such as Cole's clause-union account (1976), will be discussed in section 4.2.

4.1 The interaction of *hif'il* morphology and causative syntactic constructions

Hif'il verbs may occur in different syntactic environments, as can be seen in examples (3)-(5). The use of the 'basic' form of the root (*pa'al* or *nif'al*) is exemplified in (3a)-(5a). The use of the *hif'il* form is exemplified in (3b)-(5b)¹.

- (3) a. *haxayal rac (r.u.c-pa'al) misaviv lamigrash.*
 the-soldier ran around the-courtyard.
 'the-soldier ran around the-courtyard'.
- b. *hamefaked heric (r.u.c-hif'il) et haxayal misaviv lamigrash.*
 The-commander run-*hif'il*_{past} ACC the-soldier around the-courtyard.
 'The commander made the soldier run around the courtyard'.
- (4) a. *ruti yarsha (y.r.sh-pa'al) et habayit.*
 Ruth inherited ACC the-house.
 'Ruth inherited the house'.
- b. *dani horish (y.r.sh-hif'il) et habayit leruti.*
 Danny inherit-*hif'il*_{past} ACC the-house DAT-Ruth.
 'Danny bequeathed the house to Ruth'.
- (5) a. *hatinok axal (?x.l-pa'al) et hadaysa*
 the-baby ate ACC the-cereal
 'The baby ate the cereal'.
- b. *aba he?exil (?x.l- hif'il) et hatinok et hadaysa*
 Daddy eat-*hif'il*_{past} ACC the-baby ACC the-cereal. or:

¹ All Hebrew examples in this study are given in Italics, followed by a word-to-word transfer of the Hebrew words into English (including the *binyan* and tense of the main verb; however, for simplicity, no other inflectional properties are marked), and an optional free English translation indicated by single quotes. Grammatical codes are given in capital letters. The codes to be used in the text are: ACC for 'accusative marker', DAT for 'dative marker', and OBL for 'oblique marker'. If one Hebrew morphological element corresponds to more than one English element and/or grammatical code, the collection of meaning equivalents in English is joined by hyphens.

aba *he?exil (?..x.l- hif'il)* *et* *hatinok* *baadaysa*
 Daddy eat-*hif'il*_{past} ACC the-baby with-the-cereal.

'Danny fed the baby (with) the cereal'

When the 'basic' (*pa'al* or *nif'al*) verb form is intransitive, the *hif'il* form is a two-place (transitive) predicate, as in example 3. When the 'basic' verb form is transitive, the *hif'il* form is a three-place predicate of two types: One entails an accusative object (*et*²) followed by a dative object (*le-*), as in example 4; the other, which is less common and often avoided, entails the occurrence of two accusative objects with the verb (example 3); In Modern Hebrew, one of the two accusative objects is often realized obliquely (cf., Cole, 1976).

My goal in this section is to ground and explain the three morpho-syntactic grammatical patterns described above in terms of the underlying conceptual schemas and blending operations that motivate their generation, without any recourse to generative grammatical principles. Specifically my blending analysis of *hif'il* will suggest that:

1. The causative *hif'il* verbal pattern is used to mark a single sub-event (the *effected* sub-event) within a conceived causal sequence of events. Marking other sub-events entails the usage of other *binyanim* (as demonstrated in chapters 5-6).
2. Variations in the argument structure of *hif'il* verbs are due to variations in *the type of causal event* being communicated. Variations in the generic causal event motivate linguistic blending into varying syntactic patterns (based on identified correlation between the semantics of the causal event and the semantics of the syntactic pattern), thus resulting in different argument structures for the verb.

² *et* is the Hebrew marker for *definite* direct objects; indefinite objects are not marked by a preposition.

4.1.1 *Hif'il* morphology and the Basic Transitive construction.

The most common use of *hif'il* in Modern Hebrew is as a two-place predicate in the Basic Transitive construction [NP V *et* NP]³, as illustrated in example 6:

- (6) *hamefaked heric (r.u.c-hif'il) et haxayalim.*
 the-commander run-*hif'il*_{past} ACC the-soldiers.

'The commander made the soldiers run'.

What is the conceptual structure that underlies (and gives rise to) sentence 6? The structure of the actual conceived causative event in the world is composed of two sub-events (the generic causative event structure defined in chapter 2). There is the causing sub-event, in which the commander acts in some way on the soldiers, and there is the *effected* sub-event - the soldiers running. These two sub-events are conceived as connected by a 'causal' predicate.

The conceived causal sequence of events is expressed linguistically through a *single* syntactic structure [NP V *et* NP] with a *single* predicate. The basic assumption (following Cognitive and Construction Grammar, see discussion in chapter 1) is that for the Hebrew speaker, the syntactic pattern [NP V *et* NP] is associated with an independent semantic schema. The schema represents the archetypal "transitive" event (Givón 1984): an agent (typically human), who volitionally acts on (i.e., exerts physical force on) and affects another entity (the patient)⁴. Langacker (1991b:210) describes the archetypal roles of "agent" and "patient" as follows:

³ The Basic Transitive construction may occur with either definite accusative objects (marked by *et*), or indefinite accusative objects (not marked by a preposition). For the purpose of emphasizing accusativity, I will define accusative constructions using the definite accusative marker *et*.

⁴ This schematic event structure clearly represents only the most prototypical sense of the Basic Transitive construction. A full description of this grammatical construction involves a network of extensions to the prototypical sense as well as a list of idiomatic uses of the construction as discussed in Goldberg, 1995; Lakoff, 1987; and Langacker, 1991b). It is analogous to a description of a prototypical sense of a lexical item which nearly always involves a network of polysemous and metaphorical extensions.

The 'agent' . . . volitionally carries out physical activity which results in contact with some external object [the patient] and the transmission of energy to that object . . . The 'patient' absorbs the energy . . . and thereby undergoes some change of state.

Each semantic role in the semantic schema is associated with one grammatical category in the syntactic pattern [NP V *et* NP]: the agent role is associated with the first NP, the patient role with the second NP, and the force-dynamic relation (Talmy,1985) between the two entities is associated with the main verb slot in the syntactic pattern. The syntactic pattern and its associated generic semantic schema are extracted from previously encountered instances of the construction (i.e., instances of two-participant transitive sentences).

According to the blending hypothesis, if structural correlation is found between the semantic structure of a conceived event and the semantic schema associated with one of the language's constructions, then there is cognitive pressure on the language user to blend the two together. Figure 4-2 provides a schematic description of the blending process underlying the generation of sentence 6:

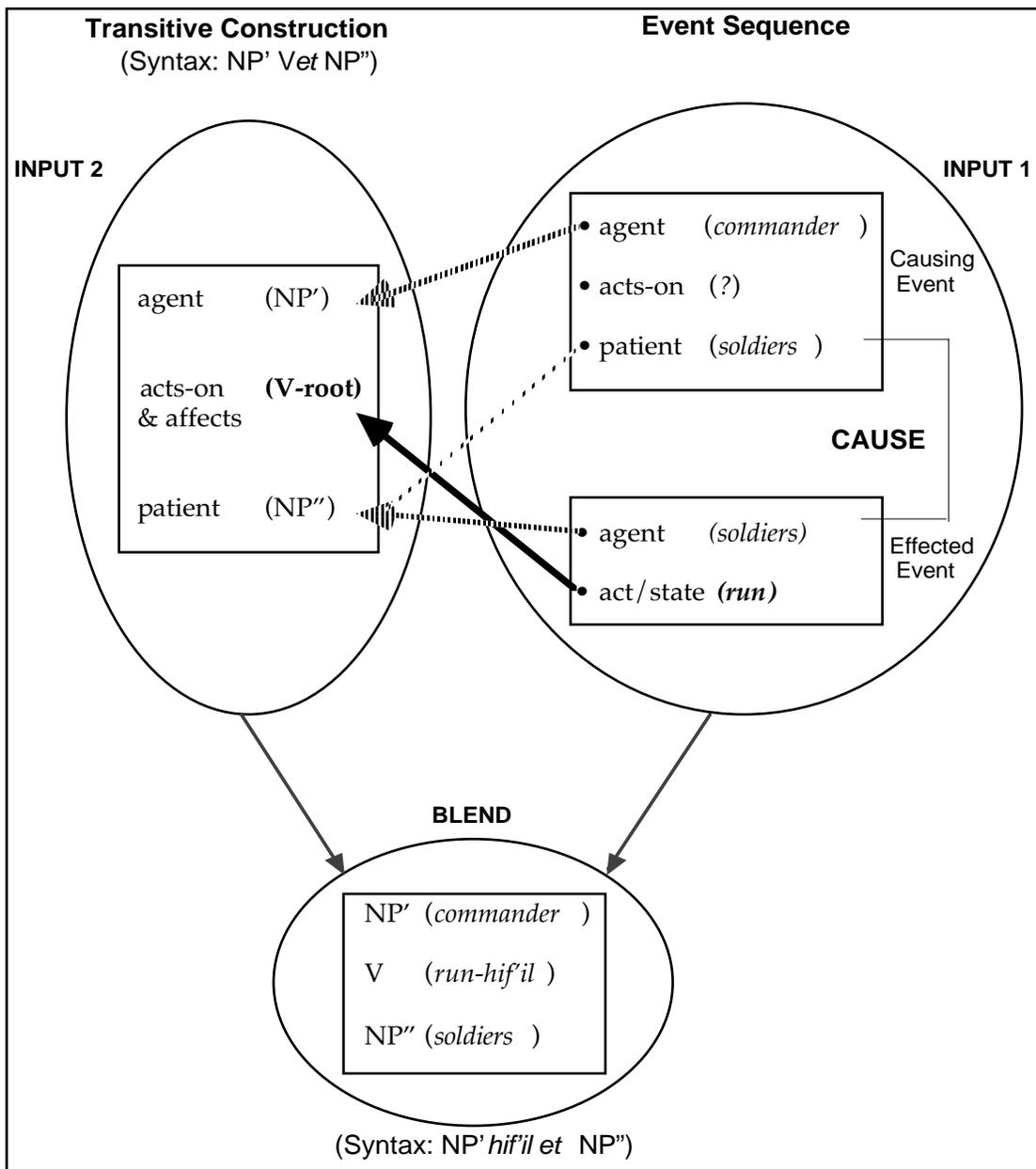


Figure 4-2: The blending operation underlying the generation of a Basic Transitive *hif'il* sentence.

The structure of Figure 4-2 is very similar to Figures 2-2 to 2-4 (in chapter 2) which illustrate the blending operations underlying the generation of English Caused-Motion sentences. On the right side of Figure 4-2 (Input 1) is a schematic characterization of the causal sequence of events in the world. Each participant and relationship in the conceived causal event is identified with a lexical item (in brackets)⁵. On the left side (Input 2) is a schematic characterization of the Hebrew Basic Transitive construction⁶: its syntactic form is [NP V *et* NP], and the generic semantic structure associated with it is of 'an agent acting on and causing some change to (or affecting) a patient'.

At the bottom of Figure 4-2 is the blended structure, which corresponds to the actual linguistic content expressed in communication. Its syntactic form is inherited from the integrating construction (Input 2), but with the main verb's *binyan* (morphology) being *hif'il*. The lexical root of the verb and the nominal participants are inherited from the conceived sequence of events (Input 1). The semantic content of the blend is a combination of the semantics of the integrating construction and the semantics of the lexical items that instantiate it, but it also has some emergent semantics of its own imposed by background world-knowledge frames (as discussed in chapter 2; see also Goldberg, 1995). For example, though nothing in sentence 6 explicitly provides information on *what* the commander did to make the soldiers run, a prototype is immediately imposed on the partial information provided in the sentence (the blend) that it is a verbal command uttered by the commander (rather than any physical force) that made the soldiers move.

The arrows in Figure 4-2 describe the mapping between the two input structures. As was discussed in chapter 2, it is typically the case that only *partial* information from the

⁵ In the figure, the lexical items are given in English (rather than in Hebrew) to simplify the figure for English readers.

⁶ In Langacker's diagrams of transitivity (1987), an arrow represents the transmission of energy between the agent and the patient role. In my diagrams, I prefer to omit such arrows to simplify the drawing, and instead define the relationship between the participants in actual words (e.g. 'act-on', 'affect', etc.).

conceived complex event is mapped onto the integrating construction (i.e., only some parts of the event are explicitly conveyed in the blend). In the analysis of blending operations in the generation of English Caused-Motion sentences (chapter 2), it was noted that only one predicate from the conceived causal event sequence is mapped onto the verbal slot of the integrating construction. The same is true for Figure 4-2 (sentence 6): only one predicate from the conceived causal sequence (Input 1) is mapped onto the integrating syntactic construction (and expressed in the blend via the verbal *root*). I suggest that in the case of *hif'il* verbs, what is mapped into the verbal slot of the integrating construction is *always the effected predicate* within the conceived causal sequence (e.g., 'run' - *r.u.c.*, in sentence 6, Figure 4-2). This means that in the blend the verb is morphologically composed of the *hif'il* pattern and the consonantal root of the *effected* predicate (i.e., *hif'il* + *r.u.c.*, in sentence 6).

Looking at other examples of *hif'il* sentences in the next few sections, we will see that indeed the *roots* of *hif'il* verbs always convey the *effected* predicate within a causal sequence of events, while the causing predicate is left unspecified. *Hif'il* verbs are hence most similar to analytic and synthetic causative constructions found cross-linguistically, which are composed of a verb marking an effected (or resulting) predicate together with some general causative verb such as 'make' or 'let', or a morphological 'causative' marker.

The blending analysis of *hif'il* is thus compatible with cross-linguistic analyses of causative morphological verbs as composed of a causal predicate and an "embedded" verb (or the "background" and "figure" respectively in Talmy's analysis, 1976). In the blending analysis of *hif'il*, the *binyan* designates the "background" causal scenario, and the root designates the "figure", or the "embedded" effected event. The blending analysis of *hif'il* differs, however, from generative accounts of causative constructions in several respects:

- (1) In the blending analysis, the underlying causative structure includes *three* predicates (a causing predicate, an effected predicate, and a causal-relation predicate -

Input 1 in Figure 4-1), rather than only *two* (an effected predicate, and a causal-relation) as in most generative accounts⁷. In chapter 5, I will discuss another (mostly) causative *binyan* in Hebrew (called *pi'el*) which, I suggest, marks the mapping of the *causing* predicate onto the root of the main verb in the syntactic construction. The blending analysis of *pi'el* does not line up as easily with traditional characterizations of morphological causativity (as the blending analysis of *hif'il* does).

(2) In the blending analysis, the *hif'il* verb is not the outcome of some abstract rule applied to a "basic" verb (e.g., a "transitivization" rule which adds an actant to a "basic" verb, as in Saad & Bolozky, 1984), but is rather the outcome of a cognitive integration operation of a complex sequence of events into a single integrated structure (syntactic and semantic). The *binyan* is the grammatical marker of the blending operation and provides cues to the hearer in reconstructing (or "de-integrating") the blending configuration during the process of interpretation (see discussion in section 2.4).

(3) The blending analysis assumes independent existence (and semantic content) for *consonantal roots*, which become the input entities to the blending operation (this is in contrast to generative accounts such as clause-union or transitivization which apply the causative operation to full-fledged "basic" verbal forms⁸). In actual language, there is clearly no such entity as a consonantal root (since the roots never occur alone in the language, but only in combination with morphological patterns). The semantics of the root therefore constitutes (in the view of this thesis) a *schema abstraction* (in the sense

⁷ See, for example, Di Sciullo and Rosen (1990): a construction such as *fare* ('make') in Italian is represented as ([agent] causes [event]). The representation follows the Lexical Conceptual Structure (LCS) representation of Jackendoff, 1990. In the LCS, the effected event is represented (but not the causing activity).

⁸ In this respect, the blending analysis also differs from Goldberg's (1995) construction grammar analysis. In Goldberg, a "fusion" process occurs between a *verb and its argument structure* and a syntactic construction. In the blending analysis of Hebrew proposed in this thesis, the fusion is between a consonantal *root* and a syntactic construction. It is only through the blending process that the abstract root is associated with a *binyan* (marking the mapping operation) and an "argument structure" (which is inherited from the syntactic pattern of the integrating construction).

of Langacker, 1987): the root semantics is an *abstraction* over the semantics associated with all instantiations of the root (in different parts of speech⁹). Any instantiation of the root in the lexicon is an *elaboration* of this abstract schema, adding more details and specification to it^{10,11}. According to this characterization of the consonantal root and the blending process (through which a consonantal root is combined with a *binyan* and argument structure), *pa'al* verbs are not more “basic” than *hif'il* verbs (as assumed in most accounts of the *binyanim* system, see section 3.2), but rather define different *elaborations* on the abstract schema denoted by the root.

4.1.2 *Hif'il* morphology and the Transfer construction

The main verb in example 7 is again in the *hif'il* form, but its argument structure includes *three* nominal participants rather than two (in example 6).

(7) *dani horish (y.r.s-hif'il) et habayit leruti*
 Dannyinherit-*hif'il*_{past} ACC the-house DAT-Ruth
 ‘Danny bequeathed the house to Ruth’.

If we compare the underlying conceptual structure and blending processes involved in the generation of sentences 6 and 7, we can identify the semantic parameters that yield on one hand the *same binyan (hif'il)* in both sentences, but on the other hand a different argument structure in each case.

⁹ Consider, for example, the root *k.t.b.*, discussed in Berman (1978:70). The root is the basis for verbs such as *katav* ‘write’, *hixtiv* ‘dictate’, *hitkatev* ‘correspond (by mail)’; nouns such as *katav* ‘reporter’, *katava* ‘news report’, *ktav* ‘script, handwriting’, *ktiv* ‘spelling, orthography’, *mixtav* ‘letter’, *mixtava* ‘writing desk’, *ktiva* ‘(act of) writing’, and the participle *katuv* ‘written’. All these words clearly have a *common semantic element* which defines the root semantics.

¹⁰ See also Gesenius (1910:101) who states that roots are “mere abstractions of stems in actual use . . . They represent rather the hidden germ of the stems which appear in the language”. (Note that Gesenius is using the term *stem* differently than the way it is used in this dissertation. In my writing, the term *stem* is equivalent to *binyan*. In Gesenius, *stem* refers a lexical word, i.e., a root+*binyan* combination).

¹¹ The positing of roots as abstract entities from which words are generated is also compatible with Aronoff’s word-based morphology account (Aronoff, 1994).

The conceived event being communicated in sentence 7 is a causal macro event (just as in sentence 6). The causing sub-event involves an agent (*Danny*) which acts in some way on a patient (the *house*). As a result, another participant (*Ruth*) possesses (*inherits*) the house. The fact that the root of the main verb expresses the *effected* event ('inheriting') accounts for the use of the *hif'il* vowel pattern.

Note however that the internal structure of the causing and effected sub-events underlying sentence 7 (Input 1, Figure 4-3) and sentence 6 (Input 1, Figure 4-2) are very different. I suggest that it is the difference in *the type of conceived causal event* in sentences 6 and 7 that motivates the integration of each causal event sequence into a different syntactic construction (thus resulting in an *hif'il* verbs with a different "argument structure"). The generic semantic structure of the conceived event in sentence 7 is one of *intended transfer* or *causation of possession* (i.e., "X acts on Y to cause Z to possess Y", see also Rubinstein, 1976). I suggest it is this inherent transfer semantics in the conceived event of bequeathing that motivates the integration of the causal sequence into what I identify as the *Hebrew Transfer construction*. The syntactic form of the Transfer construction is [NP V *et* NP *le*-NP¹²], and its associated semantic structure is of a generic

¹² Two constraints should be added to the definition of the syntactic form of the Transfer construction: First, that the NP preceded by *le-* is animate (to distinguish the dative marker *le-* from the locative marker *le-*. And second, that *le-* cannot be replaced by another preposition (*avur* or *bishvil*), in which case *le-* marks a benefactee rather than a recipient (cf. Berman, 1982c).

The linear ordering of the accusative NP and the dative NP with respect to each other in the Transfer construction is governed by very much the same constraints as have been noted for 'double-object' constructions in English (Berman, 1982b). If the Indirect-Object (dative NP) is a pronoun, a definite NP, or some other clearly referential or presupposed element, then the Indirect-Object will tend to *precede* the Direct-Object (accusative NP). Otherwise, both orderings are acceptable (depending on which object is more highly 'individuated').

Given the relatively free-order of the arguments in the Transfer Construction, it might have been more appropriate to define the form of the construction using grammatical *functions* rather than categories (as in Goldberg, 1995). However, I found that defining the construction using grammatical categories and markers makes it easier for non-Hebrew-speakers to follow the analysis of Hebrew examples. For convenience reasons, I define and refer to the construction using one linear ordering only (the DO preceding the IO) but the reader should keep in mind that the alternative order is possible as well.

"transfer" event (Input 2 in Figure 4-3)¹³.

What is the evidence for the existence of the Transfer construction in Hebrew? Berman (1982b) reports on a previous detailed analysis of dative-marked arguments in Modern Hebrew and suggests that the canonical dative in Hebrew, just as in other languages, bears a Recipient relation to the event. The accusative-dative argument structure pattern occurs in Hebrew with many basic three-participant verbs meaning 'to give', 'to contribute', 'to send' - in all of which "some entity is volitionally transferred by an agent to a recipient" (Berman, 1982b:104). Rubinstein (1976) discusses examples of two-place transitive verbs in Biblical Hebrew whose semantics "shifts" when they occur with the accusative-dative argument structure, in which case a component of "causation of possession" is added to the core meaning of the verb. For example, the semantics of the transitive verb *leharim* 'to lift' changes when the verb occurs with the accusative-dative syntactic pattern, in which case it means 'to contribute' or 'to offer' (i.e., 'lift and give away'¹⁴). As Rubinstein (1976, 1989) notes, many of these biblical 'semantic shifts' have become so entrenched in Modern Hebrew that they are marked as an additional sense of the verb in dictionaries.

Figure 4-3 outlines the underlying conceptual structure and linguistic blending operation involved in the generation of sentence 7. The arrows in Figure 4-3 describe again the mapping between the participants of the conceived event and those of the integrating construction: the agent of the whole causal event is mapped onto the agent role of the integrating construction; the patient in both the causing and the effected conceived sub-

¹³ The semantic definition of the Hebrew Transfer construction does not imply that the transfer was successful. Some *hif'il* transfer verbs (i.e., *hif'il* verbs with accusative-dative argument structure) are conventionally associated with successful transfer (as in *hilibish* - 'dress', *hiskir* - 'rent', and *hesi* - 'marry off'). In other cases, an intention of transfer exists, but it does not imply that the transfer was completed, as in *hishmi'a* - 'play a record, cause to listen', *her?a* - 'show' (as we can say: 'he showed her the picture, but she did not even look at it'). For simplicity, I will refer to the construction from now on as a 'Transfer' construction (whether intended or completed).

¹⁴ Rubinstein describes in his paper the historical motivation for the semantic association between lifting and offering a gift.

event is mapped onto the patient role of the integrating construction; and the possessor role in the effected event is mapped onto the recipient role in the integrating construction¹⁵. The important point to note for the blending analysis of *hif'il* is that what is mapped into the *verbal slot* of the integrating construction is again the *effected* predicate.

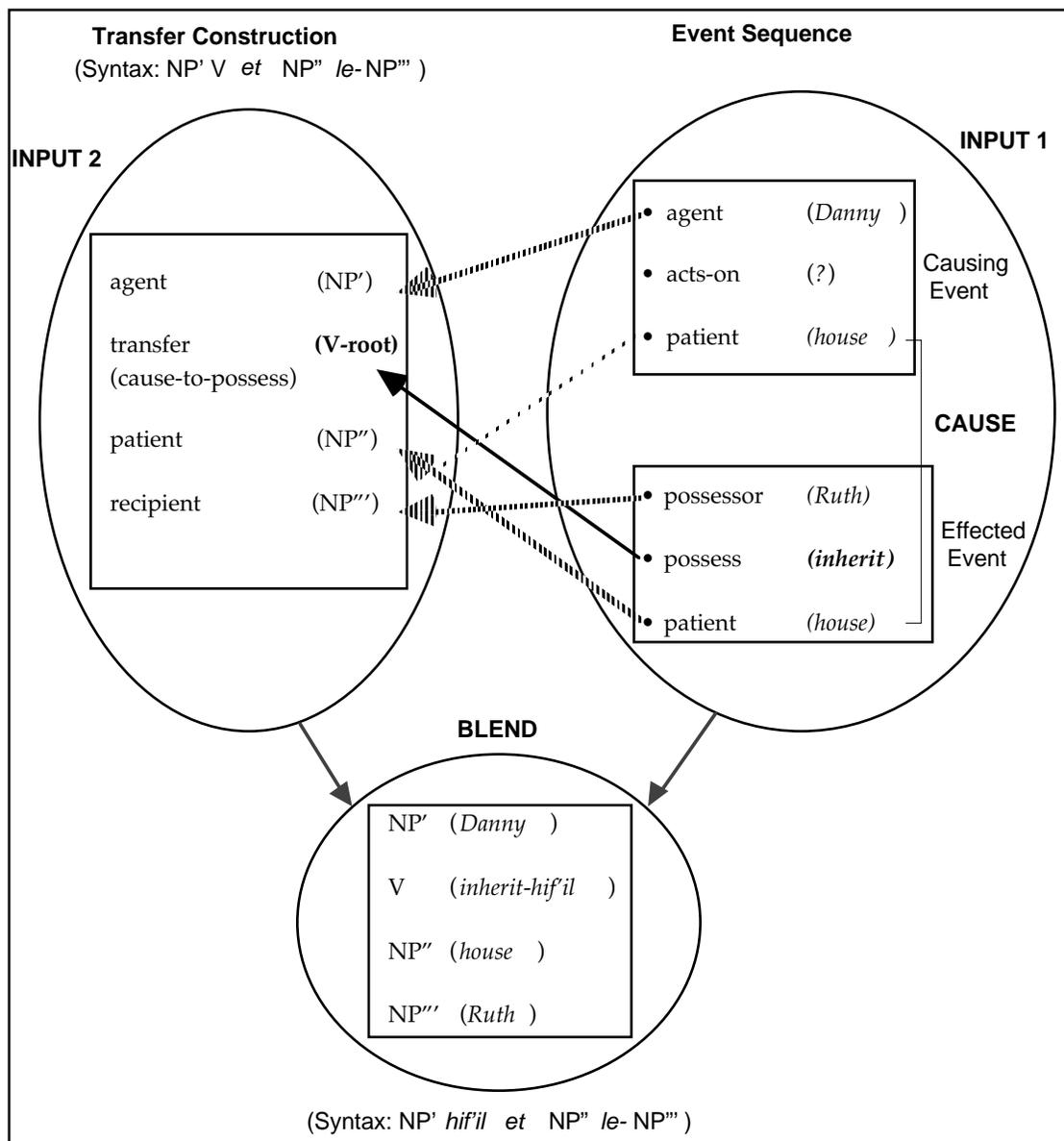


Figure 4-3: The blending operation underlying the generation of an *hif'il* Transfer sentence

¹⁵ The possessor role is compatible, and can be mapped onto, the recipient role since a recipient is also an (intended) possessor (i.e., the recipient role is a *sub-case* of the possessor role).

An interesting point to note is that the syntactic structure [NP V *et* NP *le*-NP] can also be used as an integrating construction for *metaphorical* transfer events, as in example 8:

(8) *dani* *her?a(r.?.h-hif'il)* *et* *hatmuna leruti.*
 Danny see-*hif'il*_{past} ACC the-picture DAT-Ruth.
 'Danny showed the picture to Ruth'.

The effected event in sentence 8 ('see', indicated by the root *r.?.h*), denotes *metaphorical* (rather than physical) possession of the transferred object (the picture). The agent (Danny) is operating in some way on the picture (e.g., displaying the picture in front of the recipient's eyes), thereby enabling the recipient (Ruth) to see (and thus know and metaphorically *have*) the content of the picture. The blend here is based on "shared metaphorical entailments" across several entrenched metaphorical mapping systems (Lakoff and Johnson, 1980): one is the SEEING IS KNOWING metaphor; the second is the metaphor of IDEAS (mental structures) ARE OBJECTS, which can be transferred from one person to another (the "Conduit Metaphor", Reddy, 1979)¹⁶. These metaphorical mappings allow the conceptual and linguistic mapping of the Experiencer-Possessor role in the conceived causal sequence of events onto the Recipient role in the integrating Transfer construction.

In Appendix A is a list (A-1) of all *hif'il* verbs in standard Modern Hebrew that occur with the Transfer (accusative-dative) construction (or argument-structure).

¹⁶ Based on the metaphorical mapping systems identified by Lakoff & Johnson (1980), the metaphorical mapping in (8) seems to work as follows (Tim Rohrer, personal communication): by enabling the recipient Ruth to *see* the picture, the agent also enables Ruth to *know* the content of the picture (SEEING IS KNOWING), and thus "have" ("possess") that content (MENTAL REPRESENTATIONS ARE OBJECTS). The agent thereby *transfers* (the mental representation of) the picture to Ruth.

4.1.3 *Hif'il* morphology and the Bitransitive construction.

In examples 9-10 is a third type of *hif'il* sentences. These are three-participant *hif'il* sentences, but the case marking of the object NPs is different from the case marking in the "transfer" *hif'il* sentences 7-8 (section 4.1.2). While the transfer sentences 7-8 are composed of one accusative (*et*) and one dative (*le-*) object, examples 9-10 are composed of *two* accusative objects (or sometimes one accusative and one oblique *be-* object¹⁷).

- (9) *aba he?exil (?..l -hif'il) et hatinok et ha-/ba-?/be- daysa.*
 daddy eat-*hif'il*_{past} ACC the-baby ACC-the/OBL-the?/OBL cereal.
 'Daddy fed the baby (with) cereal'

- (10) *Hamarkid hirkid (r.k.d- hif'il) et hakahal et/be- rikud hamakarena*
 The-dance-instructor dance-*hif'il*_{past} ACC the-audience ACC/OBL the-dance-of-macarena
 The dance instructor (or DJ) had the audience dance (brought the audience to dance) the Macarena'.

What is the motivation for the difference in argument structure between the *hif'il* sentences 7-8 and 9-10? This question has occupied numerous grammarians (including Junger, 1987, and Cole, 1976, whose account I will discuss in detail in section 4.2)¹⁸. I suggest that it is again a difference in the type of the causal macro-event conceived in the world that motivates blending of the causal sequence of events into a different grammatical construction (hence resulting in a different argument structure for the main verb). And

¹⁷ Stern (1979:35) notes that for numerous two-place transitive verbs in Hebrew, the accusative marker of the object can be replaced by the preposition *be-* as a "stylistic variance" (i.e., with no significant change in meaning). However Stern also suggests that there is a tendency to see some semantic difference in the use of each marker: though the evidence is not consistent, when difference is recorded, it seems that the *et* marker is used when the activity is aimed at the *whole* object, while *be-* is used when only part of the object is affected. Further support to this assumption is found in example (12) above. When the oblique marker *be-* is used, rather than *et*, there is a slight preference to use the indefinite (rather than the definite) form of the object (the cereal in example 9), suggesting that only part of the object is being affected.

¹⁸ Note that the Hebrew double-accusative construction is not the same as the English double-accusative construction. In particular, Hebrew has no partially-automatic "promotion" process (in the generative grammar sense) which transforms accusative-dative sentences into double-accusative in English. In Hebrew (unlike English), most three-participant verbs occur in either the accusative-dative (Transfer) construction or the double-accusative construction, but not in both (see Appendix A).

independently of the integrating syntactic construction, if what is mapped into the verbal slot of the integrating construction is the *effected* predicate in the conceived causal event, then the *binyan* of the main verb is in *hif'il*.

When first analyzing the generic causal semantics of the events reported in examples 9-10, they seem to be instances of "transfer" events (just like examples 7-8). I suggest however that the transfer semantic component in 9-10 is only *secondary* to the principal event being communicated: that of an agent acting on and affecting a patient (i.e., the same generic schema associated with the Basic Transitive construction, discussed in section 4.1.1). That is, in contrast to Transfer sentences (such as 7-8), in which the focus is on the transferred object, I suggest that in Bitransitive sentences the focus is on the Transitive event of an agent manipulating a patient. The transferred object plays a secondary role, as the *instrument* or *carrier* for the main event to happen.

For example, in sentence 9, the main event reported in the sentence is 'daddy feeding the baby'. The third participant in the event (the 'cereal') denotes an object upon which both the agent (daddy) and the patient (the baby) jointly act, and which thereby serves as the 'carrier' or 'means' for achieving the main activity ('feeding') and its effects.

Similarly, in sentence 10, I suggest that the main event being communicated is the dance instructor acting on the audience ('cause the audience to dance'), where the dance (the Macarena) is the 'carrier' or 'medium' for the main event to occur. Again, both the dance instructor and the audience must jointly act with regard to the third object (the dance), though not necessarily in the same way (for example, the instructor may play the dance music and give verbal instructions, while the audience is dancing).

What is the grammatical evidence supporting the above claim? The grammatical characteristics of the second accusative object in the Bitransitive construction support the idea that it functions more as an instrument or carrier, rather than as a 'moving-patient' transferred between an agent and a recipient. First, as noted before, the second accusative

object can be marked by the oblique marker *be-* (meaning 'with, by') rather than by the accusative marker *et*. Since a common function of *be-* is to mark an inanimate instrument¹⁹, it suggests that the second accusative object (the moving patient) in the Bitransitive construction is construed as an instrument or medium as well. Second, the moving object in the Bitransitive construction may be omitted, a fact which further supports the hypothesis that it is construed as a participant of lesser importance to the main event denoted by the verb²⁰ (note that the transferred object in the Transfer construction, in contrast, cannot be omitted). Third, unlike the "transfer" sentences 7-8 in which the linear ordering of the two objects is flexible, in examples 9-10 the patient (e.g., the baby) always comes first and the instrument comes second. This strict order points to the relative significance of each participant to the main event denoted by the verb (cf., Berman, 1982c).

While the syntactic behavior of the "transferred" (mover-patient) object in the Bitransitive and Transfer constructions differs widely, the syntactic and semantic function of the subject and the first accusative object in the Bitransitive and *Transitive* constructions is very similar, as reflected also in the very similar blending configurations underlying their generation in both constructions (compare the structural similarity of the causal event sequence and the mapping operations in Figures 4-2 and 4-4).

To summarize, I suggest that the syntactic pattern [NP V *et* NP *et* NP] forms an independent construction in Hebrew²¹, which is a formal (grammatical) and semantic extension to the Basic Transitive construction [NP V *et* NP]. The core semantics of the Bitransitive construction is that of the Basic Transitive construction (i.e., an agent acting on and affecting a patient), with an additional participant upon which both the agent and the

¹⁹ As in *katavti et hama?amar be'et* ('I wrote the paper *with* a pen').

²⁰ The 'instrument' accusative object, in general, does not fit any of the characteristics of a regular direct object (for example, it cannot be passivized or cliticized, Cole, 1976).

²¹ The Bitransitive construction is not very common in Modern Hebrew, but was much more common in Biblical Hebrew (Waltke & O'Connor, 1990).

patient jointly act, and which serves as a carrier or instrument for the main activity of the agent on the patient. In Appendix A is a list (A-2) of all *hif'il* verbs that commonly occur with the Bitransitive syntactic pattern (i.e., *hif'il* verbs followed by two accusative objects)²².

Figure 4-4 illustrates the blending process involved in the generation of sentence 9. In the figure, the agent of the whole causal sequence ('daddy') is mapped onto the agent role in the integrating construction; the patient of the causing event (the 'baby') is mapped onto the patient role of the integrating construction; and the patient role in the effected event ('the cereal'), also identified as the instrument or medium in the causing event (Daddy acts on the baby using the cereal), is mapped onto the patient-instrument role in the integrating construction. The double status of the 'cereal' in the causal event (both as a patient of the baby's effected activity of eating and as the carrier of the agent's causing activity) supports its alternate marking as either accusative or oblique-instrumental. The chosen marking, I suggest, depends on the construal (section 1.2.2) of the event by the speaker (each grammatical marking highlighting a different role of this object in the causal sequence). Note that if the secondary object (the cereal) is removed from the characterization of the causal event (Input 1), the remaining structure and blending configuration is exactly the same as the one underlying Basic Transitive *hif'il* sentences (Figure 4-2).

²² The reader is invited to compare the two lists of *hif'il* verbs in Appendix A (A-1 which lists all Transfer *hif'il* verbs, and A-2 which lists all Bitransitive *hif'il* verbs; both lists are adapted from Cole, 1976). All verbs in list A-1 convey a scenario of "transfer" (physical or metaphorical) where the focus is on the transfer of an object to a recipient (and not on the manipulation of the recipient). The focus in all the *hif'il* verbs in list A-2 is on the manipulation of the patient-recipient.

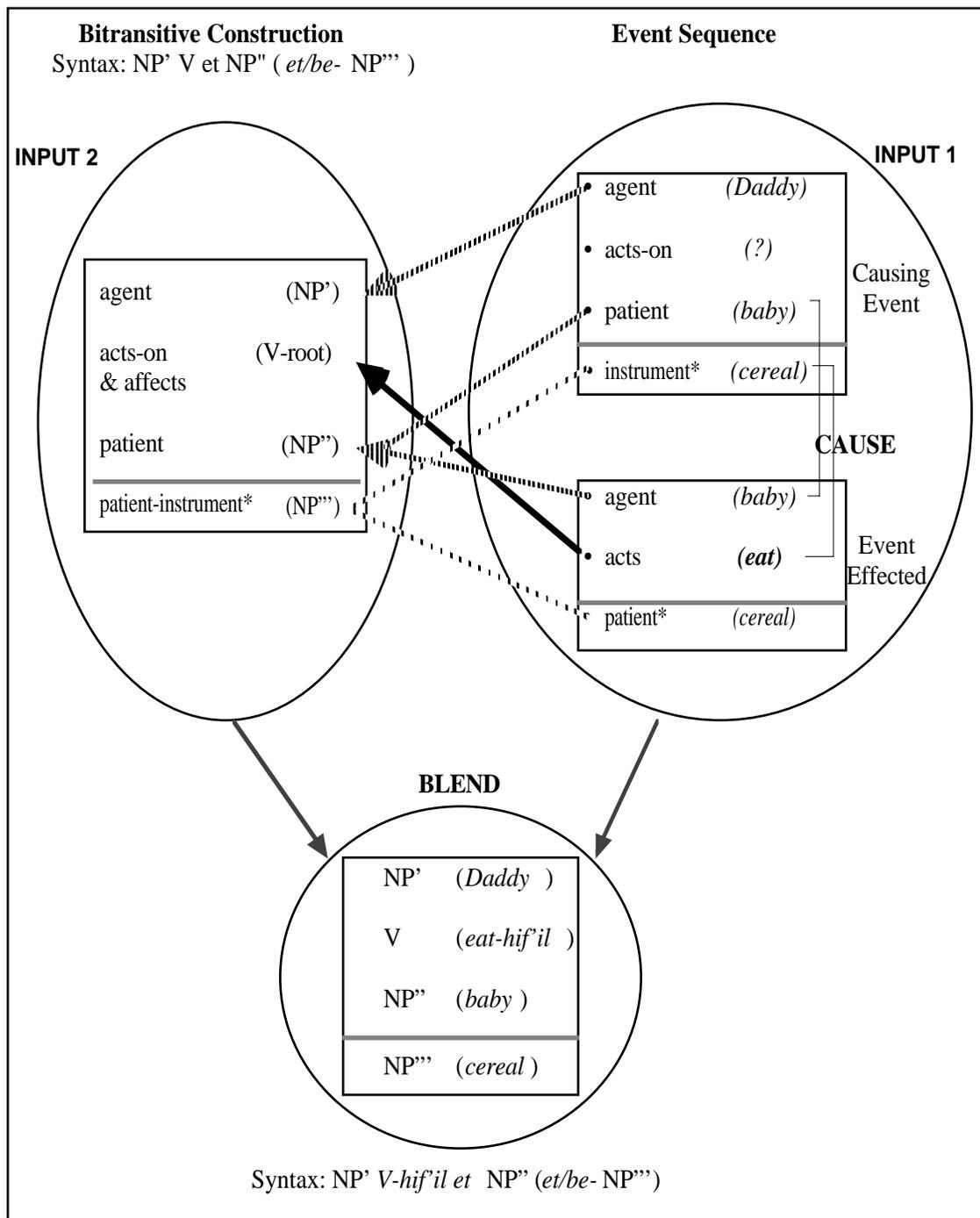


Figure 4-4: The blending operation underlying the generation of an *hif'il* Bitransitive sentence.

4.2 Advantages of the blending analysis of *hif'il* .

The Conceptual Blending analysis of Hebrew *hif'il* sentences provides a cognitive-semantic characterization of the *hif'il* stem, and of the different argument structures that are used with *hif'il* verbs. The different argument structures reflect integration of the causal sequence of events into different syntactic constructions (based on correlation between the generic structure of the causal event and the semantics associated with the syntactic pattern). The *hif'il* verbal morphology marks that, irrespective of the particular type of causal event involved, what is mapped into the verbal slot (and expressed by the verbal root) in the integrating construction is the *effected* predicate in the conceived causal event. In this section I will discuss the explanatory and predictive advantages of the blending analysis of *hif'il* over previous accounts.

One important fact that has not been accounted for in previous analyses of the *hif'il* pattern is the small number of lexicalized *hif'il* verbs that are actually in use in Modern Hebrew. Though the morphology allows great productivity, only a small proportion of the transitive, non-causative verbs have a corresponding lexicalized causative *hif'il* form. For example, while the following *pa'al* transitive verbs have an *hif'il* causative counterpart: *axal-he?exil* ('to eat'-'to feed'), *ra?a-her?a* ('to see'-'to show'), *shama-hishmi'a* ('to hear'-'to make hear'), many other *pa'al* verbs have no corresponding *hif'il* form in the standard Modern Hebrew lexicon, as in *shavar-*hishbir* ('to break'-'to cause to break'), *patax-*hifitax* ('to open'-'to cause to open'), or *xalav-*hexliv* ('to milk'-'to cause to milk').

Generative accounts of *hif'il* so far did not offer any principles to *restrict* the generation of *hif'il* sentences to fit their distribution in Modern Hebrew. Since no common semantic property has been found to define the group of basic transitive verbs with no corresponding *hif'il* form, it has been concluded that this group forms an "accidental lexical gap"²³. In this

²³ Junger (1987:81) states: "the group of verbs which do not occur in *hif'il* . . . seem to form an accidental gap. I could not detect any semantic or syntactic common denominator linking them."

section, I will suggest that the Conceptual Blending analysis of *hif'il* introduced in this chapter provides a straightforward explanation for the small proportion of basic transitive verbs with a corresponding *hif'il* form, as well as for some other grammatical properties of the *binyan*.

4.2.1 Cole's clause-union account of *hif'il* sentences

Several generative devices have been proposed to account for the generation of *hif'il* sentences in Hebrew, including 'predicate raising' (Resto, 1989) and 'clause union' (Cole, 1976, 1983). I have chosen to concentrate on Cole's account since his work provides the most thorough study of *hif'il* verbs in Modern Hebrew.

Cole assumes that Hebrew causative *hif'il* sentences are derived through a process of clause-union: a bisentential source is collapsed into a unisentential structure, by the rule of clause-union, to yield two-place predicates for embedded intransitives predicates or three-place predicates for embedded transitives predicates. Cole's study concentrates on three-place *hif'il* verbs as in examples (11-12) (discussed in this dissertation in sections 4.1.2 and 4.1.3):

- (11) *dani her'a(r.'h-hif'il) et hatmuna leruti*
 Danny see-*hif'il*_{past} ACC the-picture DAT-Ruth.
 'Danny showed the picture to Ruth'.
- (12) *aba he?exil (?x.l -hif'il) et hatinok et ha/ba- daysa.*
 Daddy eat-*hif'il*_{past} ACC the-baby ACC/OBL the-cereal.
 'Daddy fed the baby (with) the cereal'

In the clause-union approach, a sentence such as 11 is derived in underlying structure from an object complement construction such as [Danny CAUSE [Ruth sees the picture]]. Cole (1976) focuses his attention on the derived grammatical relations and case marking of the noun phrases which originate in the complement clause. Specifically, Cole notes that the case marking of the underlying subject of the complement (CS) differs in the two

examples: in 11 the CS bears dative case marking; in 12 it is obligatorily accusative.

According to Cole (1976), the derived grammatical relation of the CS is governed by two universal grammatical principles (the noun phrase Accessibility Hierarchy principle originally proposed in Keenan and Comrie, 1972, and another principle proposed by Cole, 1976 - the Placeholder principle). In Cole's analysis, the difference in case marking pattern (11 or 12) is determined by which of the two universal principles takes precedence in the generation process when conflict occurs. The Hierarchy principle takes precedence, according to Cole, only when the CS is "subject-like" (or semantically agentive). This results in the case marking pattern in 12. Otherwise, when the CS is not "subject-like", the resulting case marking pattern is as in 11. The crucial semantic property, according to Cole, is therefore the *agentiveness* of the complement subject. In cases where the CS is *non-agentive* (e.g., 'Ruth' in example 11), it will be marked as dative (*le-*) in the derived structure. When the CS is *agentive* (e.g., 'the baby' in example 12), it will be marked as accusative (*et*) in the derived structure (for further details refer to Cole's papers, 1976, 1983).

If we examine the two lists on Appendix A, we find that indeed the *hif'il* causative forms of *non-agentive* verbs such as *ra?a* ('to see'), *yada* ('to know'), or *zaxar* ('to remember') all occur with an accusative-dative argument structure (that is, the complement subject is marked as dative). On the other hand, *hif'il* forms of *agentive* verbs such as *axal* ('to eat') and *rakad* ('to dance') occur with the bitransitive (or accusative-oblique) pattern (that is, the complement subject is marked as accusative).

Cole's proposal thus provides a good generalization for the distribution of three-place *hif'il* verbs between the two syntactic patterns (11-12). Nevertheless, I argue that his proposal cannot provide a complete account for all the properties of the system:

1. some verbs in the so-called "non-agentive" (accusative-dative) group (Appendix A-1), such as *nasa* ('to marry') and *saxar* ('to rent'), are in fact associated

with *agentive* semantics (in contrast to Cole's prediction). Indeed, Cole in his paper (1976) 'struggles' to try and demonstrate a low level of agentivity for these verbs.

2. Cole's proposal cannot account for an additional (though less common) case marking pattern that occurs with some three-place *hif'il* predicates. In this third pattern, the CS is marked with the preposition *me* ('from'), rather than with an accusative or dative marker (see example 14 in the next section).

3. Finally, Cole's clause-union account does not provide any principles to restrict the generation of three-participant *hif'il* verbs in a way which explains the small proportion of basic transitive verbs in Hebrew with a corresponding causative *hif'il* form.

4.2.2 The solutions provided by the blending analysis

In section 4.1, I suggested that *hif'il* sentences are generated through a process of conceptual blending performed by the speaker, whereby a sequence of events is blended with an independent integrating syntactic construction. The blending is possible only if correlation can be found between the semantics of the causal sequence of events and the semantics associated with the syntactic construction. Note that the syntactic constructions and blending operations are taken to have real cognitive status and hence their semantic structure is assumed to impose real conceptual constraints on the speaker.

In the analysis of *hif'il*, I specifically suggested that:

I. *hif'il* verbs followed by one accusative and one dative objects are the outcome of blending a macro causal event with inherent semantics of *transfer* (causation of possession) into the Hebrew Transfer construction (whose syntactic form is [NP V *et* NP *le*-NP]).

II. *hif'il* verbs followed by two accusative objects are the outcome of blending a macro causal event with inherent semantics of *an agent modifying a patient via joint*

activity on a third participant into the Hebrew Bitransitive construction (whose syntactic form is [NP V *et* NP *et/be*-NP]).

The blending proposal, hence, naturally divides the list of three-place *hif'il* predicates into two groups associated with two different generic causation scenarios, each scenario correlating with one of two possible argument structures. There is no need to rely on auxiliary universal grammatical principles (such as the Placeholder principle in Cole's account) to explain the occurrence of the two argument structures and the association of each *hif'il* verb with one argument-structure.

The blending analysis also supplies simple and straightforward answers to the following problems noted in Cole's account:

(1) While Cole has to struggle to attribute non-agentiveness to basic transitive verbs such as 'rent (from)' and 'marry' to explain the association of their *hif'il* counterparts with the accusative-dative argument structure, in my account the association is straightforward: the semantics of 'cause to marry' (or 'marry off') and 'cause to rent from' (or 'rent to') involves *transfer* (physical or metaphorical²⁴). Therefore these verbs are associated with the Transfer (accusative-dative) syntactic pattern (or argument-structure).

(2) An interesting property of three-place *hif'il* verbs is that while some *hif'il* predicates like *lehazkir* ('to remind', the causative form of *lizkor* 'to remember'), and *lehalbish* ('to dress', the causative form of *libosh* 'to put on clothes') mark their complement subject as *dative* (just as predicted by Cole), their semantically *opposite* verbs *lehashkiax* ('to cause to forget', the causative form of *lishkoax* 'to forget'), and *lehafshit* ('to undress', the causative form of *lifshot* 'to take-off clothes') mark their complement subject with the preposition *me* (meaning 'from')²⁵. This is demonstrated in examples 13-

²⁴ The metaphorical transfer semantics in a verb such as 'marrying off' is evident in English expressions such as 'give in marriage' (which is the equivalent of 'marrying off'), as well as parallel idioms in Hebrew.

²⁵ When the preposition *le* is used with such verbs, it marks a *benefactee* ('for') and not a *recipient* (cf., Berman, 1982c).

14 below:

(13) *dani hizkir (z.k.r-hif'il) leruti et pgishatam*
 Danny remember-*hif'il*_{past} DAT-Ruth ACC their-meeting.

'Danny reminded Ruth of their meeting'

(14) *dani hishkiax (sh.k.x-hif'il) meruti et kol caroteyha*
 Danny forget-*hif'il*_{past} OBL_{from}-Ruth ACC all her-problems.

'Danny made Ruth forget all her problems'

Cole's analysis (1976) cannot account for the difference in case marking between 13 and 14, since in Cole's account the only relevant property for the case marking of the complement subject is its level of agentiveness, and clearly the level of agentiveness of the complement subject in 13 and 14 is about the same. Moreover, in Cole's account, what defines the case marking of the complement subject is the Accessibility Hierarchy principle in which an oblique marker like *me-* ('from'), has a completely different status (lower) than the dative marker *le-*. This contrasts with the clear semantic similarity in the event structures underlying sentences 13 and 14.

In my account of *hif'il*, in contrast, there is a straightforward explanation for the marker *me-*: while, for example, the event of 'remind' or 'cause-to-remember' is metaphorically associated with *transferring* a memory *to* a recipient, the conceptual scenario involved in the event of 'cause-to-forget' is one of *transferring* a memory *away from* a recipient. These conceptual scenarios motivate the integration of the event of reminding into the "transfer to" construction [NP V *et* NP *le*-NP], while integrating the event of causing to forget into an equivalent "transfer from" construction [NP V *et* NP *me*-NP], associated with basic "transfer away" verbs such as *lakaxat* 'to take away', and *lesalek* 'to send away'.

(3) A final advantage of the blending account of *hif'il* is that it provides a simple explanation for the small proportion of basic transitive verbs in Hebrew that have a corresponding lexicalized *hif'il* form in the standard lexicon (a fact has not been accounted

for in Cole's analysis and other generative accounts). As the blending analysis suggests, the actual usage of a syntactic construction to express a conceived causal event requires structural correlation between the semantics of the construction and the semantics of the causal event. It hence implies that the actual expression of a causal sequence of events through a single syntactic structure (with a single predicate *hif'il*) is restricted only to a limited class of verbs whose causal scenario fits the semantics of one of the integrating constructions in the language.

So far in my study I identified only *two* independent three-participant syntactic constructions in Hebrew²⁶: the Transfer construction (transfer of possession to and from a recipient), and the Modification-by-Tool construction (an agent affecting a patient via joint activity on a third entity). It hence follows that generation of three-participant *hif'il* sentences is *restricted to roots whose associated causal scenario fits one of the two generic causative events* defined by the two three-participant constructions available in the language.

For example, I suggest that the basic transitive verb *liftoax* ('to open') does not have a corresponding *hif'il* form, since its causative semantics ('cause-to-open') does not correlate with either the transfer scenario of the accusative-dative (Transfer) construction (causing someone to open a door does not transfer the door to that person), or with the modification-by-tool (Bitransitive) scenario (causing someone to open a door does not modify that

²⁶ According to the program laid in Construction Grammar (specifically in Goldberg, 1995), to identify a syntactic pattern as an independent construction it is necessary to show that aspects of its syntax or semantics cannot be attributable to the lexical items that instantiate the construction. Similarly, I defined the argument structure of an *hif'il* causative verb as an independent construction only if it could not be derived from the basic (non-causative) semantics of the root, and if the argument structure itself occurs with other non-*hif'il* verbs in the language, all forming a coherent semantic class.

In principle, however, there may be other (though not frequent) independent three-participant constructions in the language which I have not discovered yet.

person in any significant way)²⁷.

The same explanation holds for other basic transitive verbs with no corresponding lexicalized *hif'il* form, such as *shavar* - 'to break', *xalav* - 'to milk', *badak* - 'to examine', *daras* - 'to run over', *kataf* - 'to pick (a fruit)', and more. The causative semantics of all these verbs (i.e., 'cause to break', 'cause to milk') fits neither the transfer scenario nor the modification-by-tool scenario (i.e., causing someone to break an object does not modify the 'breaker', nor does it transfer the object to the 'breaker'; similarly causing someone to milk a cow does not modify the 'milker', nor does it transfer the cow to the 'milker')²⁸. In Appendix B is a list of twenty basic transitive *pa'al* verbs in Hebrew with no corresponding *hif'il* form (the list is adapted from Cole, 1976). The conventional causal scenario associated with each of these *pa'al* verbs does not correlate with the semantics of either three-participant constructions²⁹.

To summarize, the proposed blending analysis of *hif'il* suggests that the generation of a

²⁷ I am referring here to *conventional (repeated)* causal scenarios in the speakers community. It is of course possible that a scenario evolves in a particular community of speakers in which causing someone to open something has clear associated effect on the opener (a repeated effect which is known to the speakers in the community). In such circumstances, the blending analysis predicts that an *hif'il* form of 'open' (*liftoax*) would evolve (first as a marked form in the language, and then as part of the standard lexicon).

²⁸ To express causation with predicates such as *liftoax* ('to open'), an analytic causative construction [NP V *le*-NP V-infinitive *et* NP] may be used. The analytic syntactic construction can be used to express any causal scenario since its associated semantics is one of *generic* causation ('X caused Y to do Z'), with no additional semantic constraints. For example, the analytic causative form (i) is possible, but not the *hif'il* form in (ii):

- | | | | | | | |
|------|--------------|-------------------------------|---------------|----------------------------|-----------------|-----------------|
| (i) | <i>ruti</i> | <i>garma</i> | <i>ledani</i> | <i>liftoax(p.t.x-inf.)</i> | <i>et</i> | <i>hadelet.</i> |
| | Ruth | caused | DAT-Dani | to-open | ACC | the-door. |
| (ii) | <i>*ruti</i> | <i>hifitixa(p.t.x-hif'il)</i> | <i>ledani</i> | <i>et</i> | <i>hadelet.</i> | |
| | Ruth | open-CAUSE _{past} | DAT-Dani | ACC | the-door. | |

²⁹ Two notes should be made here:

First, phonetic and phonological factors play a role in the formation of *hif'il* forms in addition to semantic-conceptual parameters. For instance, conditions on pronounceability may interfere with the generation of an *hif'il* form, as well as instances where the *hif'il* slot is already 'taken' by an homonemic root (Bolzky, 1978; Sivan, 1964). However, none of these special conditions exists for the list of verbs in Appendix B. Hence, we must look for a semantic-conceptual explanation.

Second, I do not claim that there are *no* accidental gaps in the generation of *hif'il* verbs. Clearly, as in every linguistic system, there are idiosyncratic exceptions. However, I do suggest that the blending framework provides *motivation* (if not full explanation) for the notably small number of three-place *hif'il* verbs.

causal *hif'il* sentence is not an automatic syntactic operation that can be applied to any basic verb to yield its causative form. Rather, the generation of an *hif'il* sentence is conditioned by the availability of a syntactic construction whose semantic structure correlates with the conceived causal event, and by which the causal event sequence can be expressed as an integrated single-predicate event structure. The two causal scenarios associated with the two available three-participant syntactic constructions (the Transfer and Bitransitive constructions) define (and restrict) the type of scenarios that can be expressed in a single three-participant *hif'il* sentence³⁰.

4.2.2.1 An experiment The implausibility of generating *hif'il* sentences for predicates such as *patax* ('to open') is further confirmed in an experiment I ran. Six native Hebrew speakers were asked to provide case marking for newly-coined *hif'il* forms of transitive verbs which lack a corresponding lexical causative form in the standard Modern Hebrew lexicon (the list of test items is the one in Appendix B).

This experiment repeats a similar experiment run by Cole (1976). Cole reports that his subjects all agreed on the case marking for the nominal arguments of the newly coined *hif'il* verbs, in a way which conforms to his 'agency' hypothesis (i.e., agentive complement subjects are marked as accusative, while non-agentive complement subjects are marked as dative). Specifically, as Cole notes, his subjects found it possible to give an agentive interpretation to all the test items (the new *hif'il* forms), thus always allowing the complement subject to be marked as accusative.

However, when I ran the same experiment, my results were dramatically different. My

³⁰ The generation of *two*-participant *hif'il* sentences, in contrast to three-participant *hif'il* sentences, is not as restricted (and is quite productive in child language and slang, see section 4.3). I suggest this is because two-participant causal scenarios (i.e., scenarios of causation of a single-predicate event) can be integrated into the Basic Transitive syntactic construction whose associated causal semantics is very general (i.e., 'an agent acting and affecting a patient', section 4.1.2). This general causal scenario accommodates the event structure of a wide variety of two-participant causative events (the only restriction seems to that the causation be direct, i.e., not mediated; cf. Talmy, 1976).

informants often refused to provide any case marking for the objects of the newly-coined *hif'il* verbs, claiming that neither case marking pattern made sense to them or sounded acceptable³¹. According to the blending account presented in this dissertation, the difficulty in assigning case marking to these newly-coined *hif'il* verbs is predictable. The reason is that no common causal scenario could be associated with these novel *hif'il* forms which also correlates with the semantics associated with the two optional three-participant case-marking patterns.

An important point to note is that my subjects had no problem in generating the novel *hif'il* verbs themselves, but only in providing an argument structure for these newly-coined *hif'il*. That the subjects had no problem in generating novel *hif'il* forms is not surprising as this operation is still productive in the language (as attested in child language and in slang, see discussion in section 4.3). The difference though between novel *hif'il* forms in slang and child language, and the novel *hif'il* forms in the experiment, is that the "natural" novel forms in the language are mainly derived from basic *intransitive* (one-participant) verbs, whose causal *hif'il* form can be incorporated into the Basic Transitive syntactic construction (see footnote 29). In contrast, the *hif'il* forms of basic *transitive* verbs (as in the experiment) must be incorporated into one of the language's two three-participant constructions whose associated semantics is more restricted.

When my subjects finally did provide case marking patterns for the test *hif'il* forms (still noting how uncomfortable and confusing the task was), the distribution between the dative and accusative case-marking for the "complement subject" seemed completely

³¹ Cole in his paper does not provide any details on the actual configuration of the experiment. Hence, differences between the results reported in Cole's experiment and mine may be due to differences in procedure.

random³². I could not detect any correlation between the semantics of the verb and the marking of the complement subject, neither within the answers of one subject, nor across subjects. Moreover, even though I provided some context to each newly-coined *hif'il* verb, emphasizing an agentive interpretation to the complement subject (when ambiguity exists), there was nevertheless no preference towards the accusative marker (in contrast to what was reported in Cole).

To summarize, though the results of my experiment do not by themselves prove the validity of the “conceptual blending” hypothesis, they do provide further support to the idea that generation of a causal *hif'il* sentence is not an automatic (abstract) syntactic operation that can be applied to any basic verb to yield its causative form. Rather, the generation of *hif'il* sentences is guided and *restricted* by underlying conceptual structures and cognitive operations which must be taken into account for explaining the linguistic data.

4.3 Innovative *hif'il* verbs in (non-standard) Hebrew

Further support for the analysis of the *hif'il* stem could come from lexical innovations. As Bolozky (1986:39) notes “lexical innovations tend to reflect semantic regularities . . . since innovators look for transparent generalizations in word-formation situations”.

As discussed in section 1.2.4 (presenting the general conceptual blending framework of

³² For the 20 *hif'il* test items, the distribution between accusative marking and dative marking for the complement subject was as followed (the complete results of the experiment can be requested from the author):

- Subject 1: 15 items marked as dative, 5 items marked as accusative.
- Subject 2: 10 items marked as dative, 10 items marked as accusative.
- Subject 3: 20 marked as dative.
- Subject 4: 8 items marked as dative, 12 items marked as accusative.
- Subject 5: 7 items marked as dative, 13 items marked as accusative.
- Subject 6: 20 marked as accusative.

Note that both case markers (*et* and *le-*) can be used to mark the complement subject, independently from the actual role the subject plays in the causal event. This is because both markers frequently occur with *hif'il* forms in Modern Hebrew marking functions *other* than those intended in this test. First, the dative marker (*le-*) is used in Hebrew to mark not only a recipient or goal, but also a benefactee (where *le-* is best translated as 'for'). Since every *hif'il* verb may be interpreted as an action for the benefit of a complement subject, the complement subjects may all be marked as *le-*.

Fauconnier and Turner, 1994), conceptual and linguistic blends may become entrenched over time, and are then used schematically. The entrenched blends are the ones that form the formal lexicon of the language. The blending "schema" common to many entrenched blends (i.e., the common mapping configuration extracted from many entrenched linguistic blends, e.g., as in the use of the *hif'il* stem) is nevertheless proposed to be "alive" in the conceptual system of language speakers and ready for creative (non-schematic) processing. As the analysis of translation examples in chapter 8 will show, translation between languages which make use of different entrenched blends to represent the same conceived event in the world often requires the conscious activation of these entrenched (schematized) blends to accommodate the formal linguistic differences. In addition, blending schemas, extracted from many entrenched blends, can be extended creatively by language speakers to form *novel* conceptual and linguistic blends. Hebrew speakers, for example, often make use of grammatical patterns such as the stem *hif'il* (which, I suggest, marks a *schema of blending*, integrating a causal predicate and an effected predicate from a causal sequence), to create novel conceptual and morphological blends (i.e., create novel *hif'il*-root combinations). These novel combinations are typically first considered as marginal forms (i.e., "colloquial" or "slang" forms), outside the realm of the formal lexicon of the language, but if used repeatedly (in a way conforming to the phonological rules of Hebrew), they can become part of the standard language.

Nir (1993) distinguishes three different types of lexical innovations: Innovations in literature (used for stylistic reasons; their morpho-syntactic structure must clearly point to their meaning so they can be understood by the reader). 2. Innovations in slang (their unique feature is that their use is voluntary; the speaker chooses to use a slang form rather than a standard form, even though both are available). 3. Innovations in children speech (common when children feel there is a gap in the lexicon, or when they do not know the right form). In the rest of the section, I will briefly examine examples of innovative *hif'il*

verbs in these three categories.

Innovations in *hif'il* are not as common as innovations in other verbal patterns in Modern Hebrew (according to Sivan, 1964, less than 15% of all innovative verb formations are in *hif'il*³³), but the use of *hif'il* in verb-coinage is very consistent: *hif'il* verbs are mostly used to coin causative verbs (where the root marks the effected event in the causal sequence), a fact which supports the claim that Hebrew speakers are aware of the function of this *binyan* (or its blending schema) in spite of its partial regularity (Bolozky, 1982, 1986; Berman 1982a; Berman & Sagi 1981; Nir 1993; Sivan 1964).

Not surprisingly, most innovative *hif'il* forms are *two*-place predicates occurring in the Basic Transitive syntactic form (section 4.1.1). This is not surprising since, as discussed in the previous section, the Basic Transitive syntactic construction is the *least restrictive semantically* (i.e., its generic semantics of causation can accommodate any causal sequence with direct causation, in contrast to the more restrictive semantics associated with the other two integrating constructions that we discussed: i.e., the Transfer, and the Bitransitive constructions, section 4.1.2-3). The roots of these innovative *hif'il* verbs have a *non-causative* semantics (describing mostly *states* or "intransitive" *motion* events). The blending pattern is similar to the one associated with entrenched two-place causative verbs (e.g., *heric* - cause to run, analyzed in section 4.1.1, Figure 4-2).

Berman & Sagi (1981) give some examples of children's (four to six year old) spontaneous two-place *hif'il* innovations:

- (15) a. *hisxi* - *hif'il* form of *saxa* ('to swim'); the child refers to her father who is helping or teaching her to swim.
- b. *heshin* - *hif'il* form of *yashan* ('to sleep'); the child refers to the event of putting someone to sleep.

³³ The most common pattern in innovative verb-formation is *pi'el* (discussed in chapter 5). However, phonetic and phonological factors affect the use of *pi'el* in addition to semantic-conceptual parameters. For instance, conditions on pronounceability dictate that all quadrilateral (or longer) roots are realized in *pi'el* (Bolozky, 1986).

Examples of two-place *hif'il* verbs in adult slang are mostly derived from nouns, with the (metaphorical) semantics of 'causing someone to be like N, or in a state involving N', as in 16 (examples from the *Israeli Slang Dictionary*, Axiasaf et al., 1993):

- (16) a. *hitkil* - derived from *takala* (noun - 'accident', 'fault'), meaning 'to cause someone to be (or to put someone) in a stressful, faulty situation'.
 b. *hishviz* - derived from another slang word *shvuz* (adj - tired, frustrated, depressed) meaning 'to cause someone to be *shavuz*'.

In contrast to innovative two-place *hif'il* forms, examples of innovative three-place *hif'il* predicates are much harder to find (as expected from the discussion in the previous section). No instances of innovative three-place *hif'il* forms were reported in Berman's studies on child language (Berman, 1993; Berman & Sagi, 1981), and in my research I found only two examples in adult slang (examples 17-18):

- (17) *hextif* - derived from *xataf*, literally 'to grab' but in slang it means 'to absorb' or 'to receive non-voluntarily' (the *Israeli slang dictionary*, Axiasaf et al., 1993; example also mentioned in Cole, 1976). The *hif'il* form means 'to give non-voluntarily', and is followed by an accusative object (the transferred item), and a dative object (the 'recipient'). It is used mainly to denote violent acts, as in *hextif stira le...* ('give a slap, a kick to...')³⁴.

Note that the argument structure of the verb *hextif* (in 17) is in accord with both Cole's predictions (the complement subject is non-agentive hence it is marked as dative) and with my predictions (the causative action is one of transfer, hence the verb is used with the Transfer accusative-dative syntactic pattern). The argument structure in the next example (18) however does not fit Cole's predictions, though it can be accounted for in the blending analysis presented in this manuscript. The novel *hif'il* form in example 18 was found in an Israeli humorous song³⁵. The song tells the story of a 'simple' soldier, being 'persecuted' by a top sergeant. The sergeant penalizes the soldier for his misbehavior with

³⁴ An anonymous referee also noted that in the same slang context (of violence acts) the non-slang forms *natan* ('give'), and *hevi* ('bring') are also used as metaphorical extensions of literal transfer events.

³⁵ The song is *uzi-uzi*, performed by the Israeli group *hagashash haxiver* in their record *hagashash haxiver at the double chin club*.

a fine. The novel *hif'il* form that is used in the song is *hiknis*, derived from the noun *knas* ('fine')³⁶.

- (18) *shalosh lirot hiknis oti*
 three pounds fined(?) me
 "(he) fined me three pounds".

The novel *hif'il* form *hiknis* may be interpreted as either 'to give a fine', or 'to cause to pay a fine'³⁷. The complement subject (the soldier) is certainly non-agentive, and hence should be marked as *dative* according to Cole's account. Also, if *hiknis* denotes the transfer of the fine from the sergeant to the soldier (i.e., 'give fine' or 'cause to have a fine'), then according to the blending account, the recipient (the soldier-speaker) should be marked as *dative* as well. However, the complement subject (the speaker) in 18 is marked as *accusative* (*oti* - 'me', first, singular, accusative pronoun).

The accusative marker is motivated once we consider the topic of the song. From the theme of the song, it is clear that the intention of the speaker (soldier) in sentence 18 is not so much to denote the transfer of the fine ('three pounds') from the sergeant to the soldier, as it is to focus on the *effect* of the sergeant on the speaker (i.e., the "oppression" of the simple soldier by the sergeant by means of the fine). The fine in this case is just the *means* in the hands of the oppressor (the sergeant). This interpretation perfectly fits the associated generic semantic schema proposed for the Hebrew Bitransitive construction (section 4.1.3). From the blending point of view, it is hence not surprising that the speaker chose to

³⁶ In standard Hebrew there are a number of *denominative hif'il* verbs, many of which "express the 'bringing out' or the 'producing of a thing', and so are properly regarded as causatives" (Gesenius, 1910:145). Examples of denominative *hif'il* verbs in standard Hebrew include the following verbs: *hivkir* - 'to bring forth a firstborn' (from *bxor* - 'first born'); *himxiz* - 'to turn into a play' (from *maxaze* - 'play'); *hismil* - 'to go to the left' (from *smol* - 'left'); *hexrim* - 'to boycott' (from *xerem* - 'boycott').

³⁷ Note that a standard *pa'al* form *kanas*, meaning 'to fine', already exists in Modern Hebrew. The form *kanas* is used with one animate accusative object and one oblique *be-* ('with') object (to denote the recipient of the fine and the fine itself, respectively). It turns out that it is quite common in non-standard Hebrew to turn already causative *pa'al* verbs into *hif'il* in order to emphasize their high transitive-causative semantics. For example, Berman & Sagi (1981) report on children using non-standard *hif'il* forms rather than the standard *pa'al* forms for highly transitive-causative roots such as *d.x.f* ('to push') and *l.x.c* ('to press').

blend the intended communicated event with the Bitransitive syntactic pattern. Note that such an explanation which takes into account the rhetoric intentions of the speaker is not possible in Cole's clause-union analysis of *hif'il* argument structures.

4.4 Conclusions

In this chapter, I proposed an analysis of the causative *hif'il* stem in Hebrew as a marker of grammatical blending. The *hif'il* stem marks to the hearer that a causal sequence of events has been linguistically integrated into a single clause structure, with the *effected* sub-event mapped onto the verbal slot of the integrating syntactic construction. The *hif'il* stem thus prompts the hearer to reconstruct a whole causal sequence of events out of the partial information provided in the sentence. The structure of the reconstructed causal event should fit the generic event structure schema associated with the syntactic pattern (the construction). The effected predicate in the reconstructed causal event should be the one denoted by the root of the main verb in the sentence.

The blending analysis of *hif'il* sets the stage for analyzing the whole *binyanim* system as a single unified grammatical and cognitive system. A parallel account will be suggested in the next chapters (chapters 5-6) for the other *binyanim* marking grammatical functions such as passive, middle, reflexive, and other causatives. Each *binyan* will be identified as marking a particular *blending schema*, each schema involving different mappings of predicates and participants from the conceived event onto the integrating syntactic construction.

Note that the blending operation underlying the generation of Hebrew *hif'il* sentences (Figures 4-2 to 4-4) is very similar to the proposed blending operation underlying the generation of English caused-motion sentences (chapter 2, Figures 2-1 to 2-5). The grammatical blending framework thus provides a common ground upon which to analyze both morphological and syntactic causatives. The predicate mapping in *hif'il* sentences

parallels in particular the mapping underlying English caused-motion sentences such as 'she trotted the horse into the stable' (Figure 2-3): in both it is the effected predicate in the causal event that is mapped into the verbal slot of the integrating construction. English and Hebrew differ however in the grammatical marking of the mapping patterns involved in the blending operation: while Hebrew morphology clearly marks which predicate was mapped into the verbal slot of the integrating construction (the *effected* predicate in the case of *hif'il* sentences), nothing in the English grammar marks the predicate mapping.

An important aspect of English grammar compared to Hebrew grammar, from the blending point of view, is that the morphological structure of English allows a relatively 'free' mapping of almost every aspect of a conceived event (i.e., the stem denoting it) onto the integrating construction with no change in the lexical-morphological form of the stem. For example, the stem 'walk' in 'I walked' or 'I walked the dog' does not change even though in the causative sentence 'I walked the dog', the 'walking' refers primarily to the dog's effected activity rather than to the agent's motion (note that this is just a different characterization of a well-know fact about English that its verbs frequently take the same form in both transitive-causative and intransitive-middle contexts). English, moreover, allows the mapping of non-verbal predicates into the verbal slot of the integrating construction, again with no change in morphology, as in examples 19-20 below (examples from Fauconnier and Turner, 1996). In (19), the *tool* used to carry on the causing sub-event (the hammer) is mapped onto the verbal slot of the integrating construction, and in (20), the vehicle used for the motion of the object in the effected sub-event (the cart) is mapped onto the verbal slot of the integrating construction. The mapping thereby defines two denominative verbs (both are conventional derivations in English).

(19) David hammered the nail into the door.

(20) He carted the drums into the warehouse.

In Hebrew, the situation is very different. Since any verb in Hebrew must be assigned

to one of the seven *binyanim* (to form a root-*binyan* combination), the blending of predicates with syntactic constructions obligatorily involves morphological marking (i.e., *binyan* assignment). The assignment cannot be to any *binyan*, but only to the one designating the relevant mapping schema (e.g., a root would be combined with an *hif'il* pattern only if the mapped predicate denotes the effected sub-event in a causal event). Finally, root-*binyan* combinations cannot be freely assigned in standard Hebrew but are limited to a set of conventional combinations in the standard lexicon (creative combinations are more common in nonstandard discourse: e.g., in humor, street language, and poetry).

Therefore, in contrast to the discussion of blending in English caused-motion sentences (chapter 2), the discussion of blending in Hebrew in chapters 4-7 is mostly confined to entrenched, conventional lexical verbs from the standard lexicon. Following the basic argument of cognitive linguistics that entrenched and novel instances of language reveal the same basic cognitive mechanism (and are a matter of degree rather than binary dichotomy, cf. Fauconnier, 1997; Langacker, 1987; Lakoff, 1987), I similarly analyze novel creative blends (such as English caused-motion sentences) and entrenched lexical blends (such as Hebrew standard root-*binyan* combinations) as motivated by the same type of conceptual and linguistic blending operations. That the blending in the standard Hebrew *binyan*-root combinations is entrenched simply means (in the view of this thesis) that these combinations (and the blending schema they mark) have been repeatedly used by speakers to the point of becoming a cognitively integrated linguistic unit. However, this does not mean that the conceptual and linguistic blends that give rise to these integrated units cannot be consciously accessed. On the contrary, as Fauconnier (1997:22) suggests when discussing entrenched metaphorical blends: “what the entrenchment does is make the mapping less noticeable at a conscious level, but at another level, it is more available than ever for reasoning, inference transfers, and conceptual elaborations”.