

Chapter 7: Summary of results - a blending account of the *binyanim* system.

In chapters 4-6 of the thesis, I developed a blending analysis of the *binyanim* system in Hebrew. The *binyan*, according to the analysis, is a grammatical marker for a conceptual and linguistic blending operation. In the blending operation, a complex event conceived in the world is blended with one of the languages' syntactic constructions. The blending operation involves the mapping of partial information from the conceived event onto the integrating syntactic construction. This operation results in a linguistic structure (the sentence communicated in the language) which represents the complex conceived event as an instance of a single tightly-integrated event structure. The role of the *binyan*, according to this analysis, is to mark the particular blending operation, and guide the hearer in the linguistic "de-integration" (or "un-packing") operation -- the reconstruction of a probable scenario which the speaker conceived and intended to communicate.

The analysis suggests that each *binyan* is associated with a *single* blending (or mapping) schema (with the *binyanim pa'al*, *nif'al*, and *hitpa'el* each associated with two variations of a more generic schema). Irrespective of the particular *syntactic* construction being used (identifying the general event structure communicated in a sentence), the *binyan* marks the particular elements that are mapped from the conceived event onto the integrating syntactic construction (and are thus explicitly expressed in the sentence).

Figure 7-1 summarizes the blending schema(s) associated with each *binyan* :

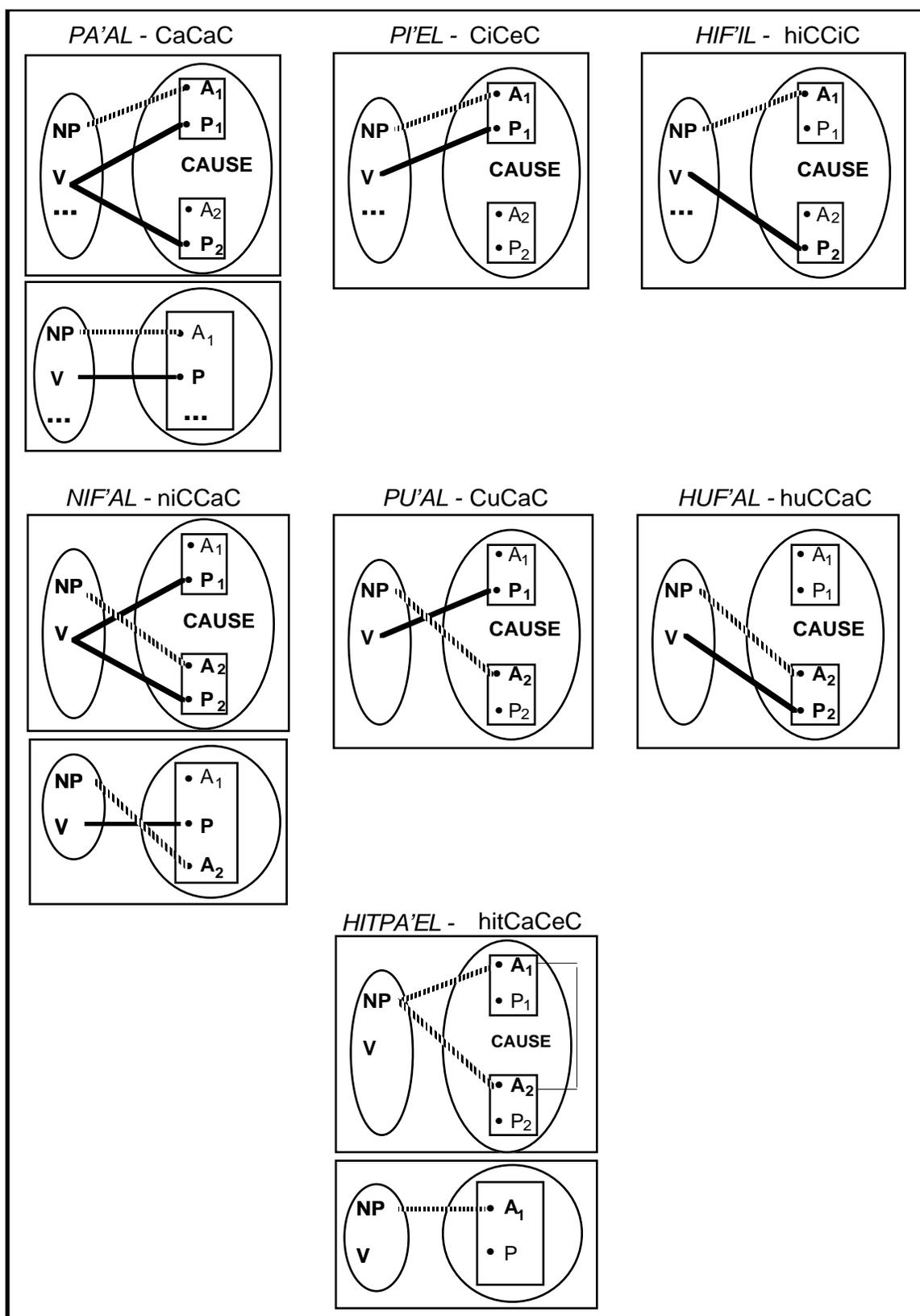


Figure 7-1: Summary - a blending analysis of the *binyanim* system.

The blending analysis of the *binyanim* system, as described in Figure 7-1, provides a *unified* and *systematic* account for the various grammatical functions of the system. Each *binyan* is associated with a single blending schema, and the different schemas complement each other. Each blending schema is defined as a function of two parameters: (1) the predicates which are mapped onto the main verbal slot of the integrating syntactic construction (and profiled by the verbal root); and (2) the participants which are mapped onto the first NP slot (the "subject" slot) of the integrating syntactic construction.

With regard to the mapping of predicates, the analysis identifies all together three types of mapping schemas from the conceived event onto the verbal slot of the syntactic construction: (a) the mapping of a *causing* predicate within a causal event; (b) the mapping of an *effected* predicate within a causal event; and (c) the mapping of an *autonomous* predicate (i.e., a predicate which is not itself part of a larger event sequence). The autonomous predicate may be either a predicate in a conceived single-predicate event structure, or the conceptual and linguistic integration of a sequence of predicates - a causing and effected predicates from a causal sequence of events). The three mapping schemas of predicates are illustrated in Figure 7-2.

With regard to the mapping of participants, the analysis identifies again all together three types of mapping schemas from the conceived event onto the first NP (subject) slot of the syntactic construction: (a) the mapping of a *causal agent* in a causal event; (b) the mapping of an *affected entity* in a causal event; and (c) the mapping of an *autonomous* entity (i.e., an entity which is not part of a larger multi-participant event). The autonomous entity may be either a participant in a conceived single-participant event structure, or the conceptual and linguistic integration of a causal agent and an affected entity in a causal event). The three mapping schemas of participants are illustrated in Figure 7-3.

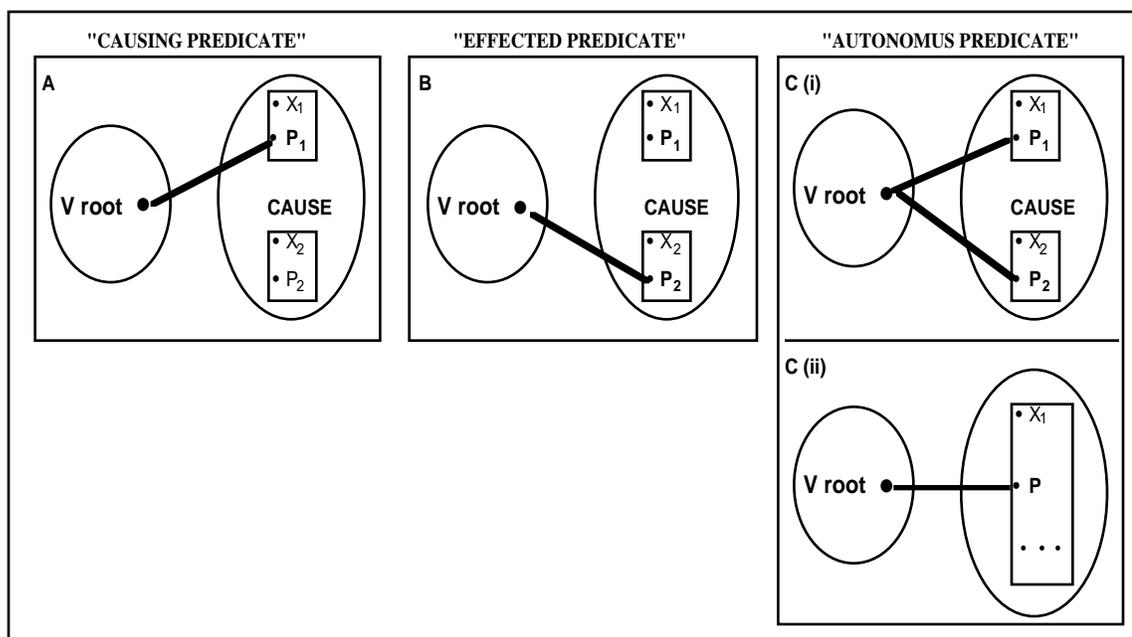


Figure 7-2: Summary - three mapping schemas of *predicates* in the *binyanim* system

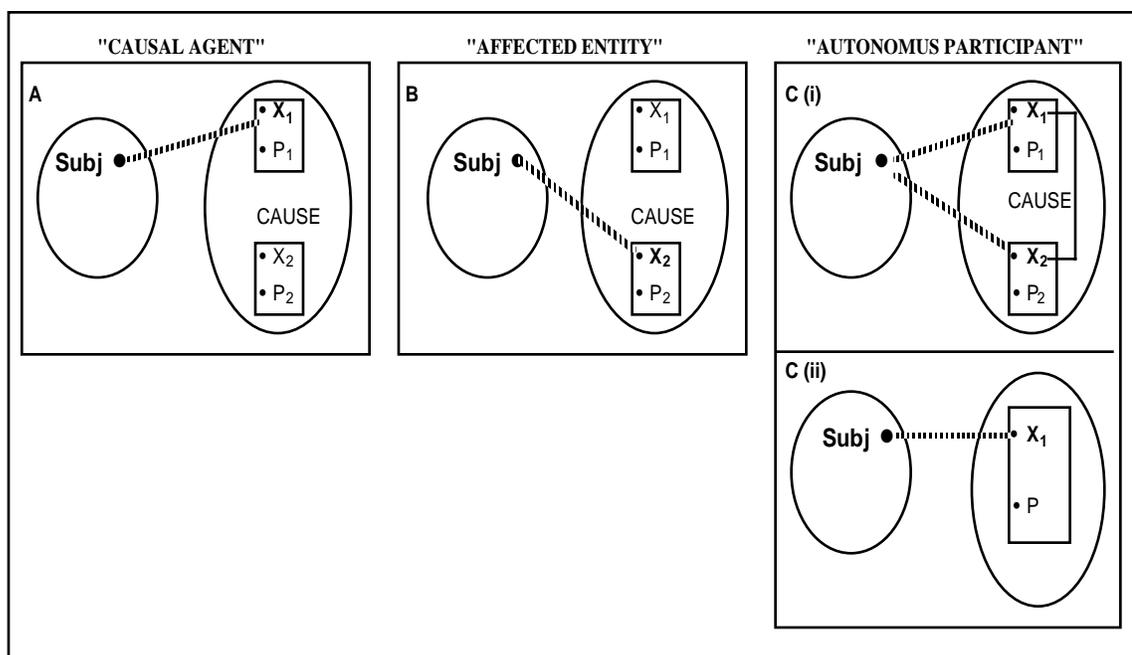


Figure 7-3: Summary - three mapping schemas of *participants* in the *binyanim* system

Table 7-1 defines each *binyan* as a function of the two mapping parameters (the mapping of predicates and the mapping of participants from the conceived event onto the integrating syntactic contraction) identified in Figures 7-2 and 7-3. The horizontal axis in Table 7-1 represents the first parameter: what is mapped onto (and profiled by) the verbal root (Figure 7-2). The vertical axis represents the second parameter: what is mapped onto (and profiled by) the first nominal (subject) slot (Figure 7-3).

Table 7-1: Summary - defining each *binyan* as a function of two parameters: a mapping schema of predicates (horizontal axis) and a mapping schema of participants (vertical axis).

<i>predicate mapping</i> → <i>participant mapping</i> ↓	autonomous predicate Figure 7-2(C)	causing predicate Figure 7-2(A)	effected predicate Figure 7-2(B)
causal agent Figure 7-3(A)	<i>pa'al</i>	<i>pi'el</i>	<i>hif'il</i>
affected entity Figure 7-3(B)	<i>nif'al</i>	<i>pu'al</i>	<i>huf'al</i>
autonomous Figure 7-3(C)	<i>pa'al</i> <i>hitpa'el</i>	<i>hitpa'el</i>	<i>hif'il</i> <i>hitpa'el</i>

Note that according to Table 7-1, each *binyan* is associated indeed with a *single* blending schema (which is a combination of a mapping schema of predicates and a mapping schema of participants). When one *binyan* occurs in more than one cell in Table 7-1, the cells are in the same row or line: for example, *hitpa'el* occurs in three cells in Table 7-1, but all cells are in the same row. This means that *hitpa'el* is associated with *one* participant mapping schema (Figure 7-3/C), but is neutral with regard to (or generalizes over) the mapping of predicates. Each of the stems *pa'al* and *hif'il* occurs in two cells in Table 7-1, but the cells are in the same column. This means that *pa'al* and *hif'il* are each associated with *one* predicate mapping schema (Figures 7-2/C and 7-2/B respectively), but

generalize over the mapping of participants. Two *binyanim* that occur in one cell (e.g., *pa'al* and *hitpa'el*, or *hif'il* and *hitpa'el*) suggest that their semantics (blending function) overlaps in certain contexts (as discussed in section 6.4.2).

The blending analysis of the Hebrew *binyanim* comes closest in its approach to the view suggested in Jenni's study of Biblical Hebrew (1968), summarized and reiterated in Siebesma (1991). Jenni assumes that the verbal *binyanim* system originally formed a closed system of grammatical categories. In the system each of the seven verbal stems had, morphologically and semantically, a clearly defined function distinct from that of others. Each verbal stem stood, in form and meaning, in distinctive opposition to each of the other verbal stems. The blending schemas identified for each *binyan* in this thesis also define a distinct function for each *binyan*, which is complementary to the functions of other *binyanim*. The blending schemas of all seven *binyanim* (Figure 7-1) form a unified grammatical system¹.

The results of the blending analysis are also very similar to the ones reached by Waltke and O'Connor, 1990, for Biblical Hebrew (though the methodology and initial assumptions in the two accounts are very different). Compare Table 7-1, which summarizes the findings of the blending analysis of the *binyanim* system in this study, to Table 7-2 summarizing Waltke and O'Connor's results (as found in their book, 1990: 358). Waltke and O'Connor suggest that Hebrew *binyanim* are a function of the voice of a primary subject, and a secondary subject in a causative event (if one exists). The vertical axis in Table 7-2 represents the voice of the primary subject (PS), and the horizontal axis represents the voice of the secondary ("under-") subject (US).

¹ It should be noted here again that the blending account proposed in this thesis for the *binyanim* system covers only the *most frequent and prominent* functions of each *binyan*. The large number of idiosyncrasies in the lexicon and minor grammatical functions associated with each *binyan* are not analyzed in this thesis.

Table 7-2. Waltke & O'Connor's (1990) analysis of the *binyanim* system

<i>Voice of US</i> <i>Voice of PS</i>	Absence	Passive	Active
Active	<i>pa'al</i>	<i>pi'el</i>	<i>hif'il</i>
Passive/Middle	<i>nif'al</i>	<i>pu'al</i>	<i>huf'al</i>
Reflexive	<i>nif'al</i>	<i>hitpa'el</i>	<i>hif'il</i>

Note that both the analysis of *binyanim* proposed in this thesis, and the analysis by Waltke and O'Connor (1990), put *causation* (and the causative event structure) as the center pole around which the grammatical functions of the different *binyanim* are to be defined. And though the two analyses differ in their initial assumptions on what aspects of causation are grammatically marked by the *binyanim* system (Waltke and O'Connor focus on the marking of the voice of participants in the causal event, while my analysis focuses on the arrangement and interaction of predicates and participants in the causal sequence), the structural organization of the *binyanim* system as illustrated in Tables 7-1 and 7-2 is largely the same. The two tables differ in fact in the content of only one cell - the bottom left cell which is associated with the stem *nif'al* in Table 7-2 (Waltke & O'Connor's analysis), but with *pa'al* and *hitpa'el* in Table 7-1 (my analysis). Both analyses however associate this cell with a *reflexive* function (Waltke and O'Connor suggest that *nif'al* marks an "implicit reflexive notion . . . [where] the action affects the subject of the verb or her interests" (1990:356); In my analysis, the two *binyanim* -- *pa'al* and *hitpa'el* -- are associated with one-participant/one-predicate events with possible "distinguishability" of sub-components of the participant or predicate which provides the reflexive content (section 6.4.2). The gap between the two tables may thus be only due to the fact that Waltke and O'Connor analyze

Biblical Hebrew, in which time the *nif'al* played a larger reflexive role², while my analysis is of Modern Hebrew in which *hitpa'el* is the prominent reflexive *binyan*.

The blending analysis of the *binyanim* system differs largely from traditional accounts of voice and causation. First, in contrast to accounts in which passive, middle, and causative constructions are *derived* from active clauses (see presentation in chapter 3), the blending analysis assumes that all *binyanim* (associated with active, passive, middle, reflexive, or causative functions) are generated from underlying conceptual structures, each *binyan* marking a special type of conceptual blending operation. Thus, no *binyan* is more "basic" than others.

Consider for example, the traditional "active-passive" distinction. The three *binyanim* *pa'al*, *pi'el* and *hif'il* (the first row in Figure 7-1) are traditionally defined as "active". The three *binyanim* *nif'al*, *pu'al* and *huf'al* (the second row in Figure 7-1) are traditionally defined as "passive" (with *nif'al* also associated with "middle" and sometimes "reflexive" functions in Modern Hebrew grammar). In the blending analysis, the difference between the "active" and "passive" *binyanim* is defined in terms of their blending schemas: in all active *binyanim*, what is mapped onto the subject slot of the integrating syntactic construction is the *causal agent*; in the passive *binyanim*, what is mapped onto the subject slot is the *affected entity* in the conceived causal event (see Figure 7-1). The definition of the passive *binyanim* is therefore independent of the active *binyanim*, and is not a "derivation" from other basic forms. The link between a so called active *binyan* and its corresponding passive *binyan* (e.g., the link between *hif'il* and *huf'al*) is defined in the blending analysis in terms of similarity in predicate mapping schemas (e.g., in both *hif'il* and *huf'al* it is the *effected* predicate in the conceived causal sequence that is mapped onto

² Research suggests that in pre-biblical time the *nif'al* was used primarily to denote the *reflexive* counterpart of *pa'al* verbs (Glinert, 1989; Siebesma, 1991). In biblical times, the *nif'al* took over the function of another *binyan* which was used to denote the *passive* counterpart of *pa'al*, and in Modern Hebrew, the *nif'al* functions primarily to denote passive and middle voice. Note that the development in the function of the *binyan* is motivated by the semantic overlap in the function of each of these "voice" phenomena (passive, middle, and reflexive) as suggested in this study as well as in Kemmer (1993).

the verbal slot of the integrating construction).

By removing the requirement to link (or derive) passive, middle, or causative forms to more basic forms, the blending analysis proposed in this thesis has the advantage of easily accommodating instances of so-called "non-basic" verbs whose root does not occur in the standard Modern Hebrew lexicon in any other "underlying, basic" verbal form (from which the "complex" verb can be derived). Consider, for example, the many *hitpa'el* forms in standard and colloquial Hebrew (some of which are listed in Appendix C) which are based on *adjectival* or *nominal* roots (i.e., roots denoting stative predicates that occur with adjectival or nominal, but not other verbal, morphological patterns). In generative accounts which derive "complex" verbs from underlying "basic" verbal forms, such *hitpa'el* verbs require special account. For example, Junger (1987:88) who proposes to derive *hitpa'el* verbs by a detransitivization operation from the basic-transitive form of the root (typically *pi'el*), notes that reflexive verbs derived from nouns or adjectives "are not cases of detransitivization . . . since the root does not occur in any other verbal pattern", and hence require a different account. In the blending analysis, in contrast, since what is mapped onto the verbal slot of the integrating construction is a consonantal *root* (identifying an abstract semantic predicate) rather than any actual verbal form, the existence of other root-*binyan* combinations in the lexicon is irrelevant to the generation of a given "complex" form.

As another example, consider the many *nif'al* verbs in the Modern Hebrew lexicon with no parallel *pa'al* form (or with a parallel *pa'al* form whose meaning is not the active variation of the *nif'al*). The roots of these *nif'al* verbs often co-occur with causative stems - *hif'il*, *huf'al*, *pi'el* or *pu'al* (discussed in section 6.2), as in examples 26-27 below (examples from Stern 1994:20; translations from Bolozky 1996):

(26) a. *nivhal* (*b.h.l-nif'al*) - become frightened/startled

b. *hivhil* (*b.h.l--hif'il*) - frighten/startle ³

(27) a. *nexlac* (*x.l.c-nif'al*) - be rescued, escape ⁴

³ The *huf'al* form of the root *b.h.l* (*huvhal*) is used as the passive form of a second homonymous sense of *hivhil* - 'to rush in', but not as the passive of the sense 'to frighten'.

b. *xilec* (*x.l.c-pi'el*) - rescue

c. *xulac* (*x.l.c-pu'al*) - be rescued

The *nif'al* forms in examples 26-27 (*nivhal*, *nexlac*) are defined in some studies as the "basic" forms from which the causative forms (*hif'il*) are derived, and in other studies (e.g., Stern, 1994:20) as additional "passive" derivations from the causative verb (the *hif'il* or *pi'el* form). These special analyses of particular *nif'al* verbs as derived from *hif'il* (rather than the "regular" *pa'al*) probably result from a requirement in most accounts of the *binyanim* system that the "complex" (passive, middle, or causative) verb be derived from a "basic" (active) verbal form. These proposals however seem somewhat ad-hoc, and present the *nif'al* stem as an irregular and ambiguous. In the blending account, examples such as 26-27 do not require special analysis. Since the semantic field is defined by the root, and not by any basic verbal form, there is no need to assign basic semantics to one of the realizations of the root over other realizations. The various root-stem combinations constitute different forms of linguistic blending and conceptual construal of the basic semantics denoted by the root⁵.

⁴ The *pa'al* form of the root *x.l.c* (*xalac*) has the specific meaning of 'to remove', 'to take off (shoes)'. It is not the 'active' variation of the *nif'al* form semantics.

⁵ For example, starting with the hypothesis that the root semantics of *x.l.c* - 'rescue' (in 27) prototypically involves causation and effect (i.e., some causal agent *rescues* another entity, thereby causing a change in the state of the entity - the 'affected' patient), the use of the *pi'el* stem to describe the agent's activity is motivated (i.e., it fits the general blending schema proposed for *pi'el* as marking *causing* predicates, i.e., predicates which involve some expected effect on a patient, in this case - the patient being 'free' or 'out') The *nif'al* form, as suggested in section 6.3, is used to denote an event where the causal force is unclear: it may be an external force which is not mentioned or is unknown (the passive construal), or the event may have "just happened" or caused by "internal" forces (the middle construal), i.e. the subject rescued herself, escaped. This characterization of the event contrast with the *pu'al* characterization which clearly suggests that another agent, *external* to the theme, was doing the rescue. Indeed, Stern (1994:20) notes a difference between the *pu'al* and *nif'al* forms in 27 that an agent phrase can be added to the *pu'al* form (denoting the causal agent in the rescuing event), but not to the *nif'al* form. This latter fact is in accord with the semantic characterization of the *pu'al* vs. the *nif'al* forms above. The important point to note is that the *binyan* assigned for describing each type of event (the *pu'al* type, or the *nif'al* type) in the blending analysis is *independent* from the existence of other forms in the standard lexicon: each *binyan* describes a particular type of blending schema (and thus a pragmatic construal) of an event, and the *binyan* whose schema best fits the characterization of the conceived event is the one to be used with the root (no derivation from other lexical forms is involved).

Waltke and O'Connor in their comprehensive work on Hebrew syntax (1990) express their dissatisfaction with previous accounts of the *binyanim* system:

Three unfortunate problems have marred discussion of the stem system. First, scholars have tended to describe the system as based formally on the *Qal* [pa'al] stem. Second, they have described the stems notationally in an atomistic way, that is, assigning a meaning or set of meanings to each stem independently. Third, they have neglected the very systematic character of the system (p. 352).

Waltke and O'Connor note in addition with regard to the first problem that while "it is correct to see a split between the *Qal* and the other stems, . . . there can be no doubt that all the stems are of the *same order of phenomenon* [italics added]" (p. 351, fn4).

The blending analysis of Hebrew *binyanim* provides an account of the system which overcomes all three problems noted by Waltke and O'Connor. First, the analysis describes all *binyanim* as the *same type of conceptual and linguistic* phenomena. At the basis of this operation stand conceptual entities, each associated with a highly schematic lexical representation (i.e., representation which is not yet realized by an actual linguistic form). In Hebrew, these abstract representations equal the *consonantal roots*, which denote a "core" semantic field (or the semantic schema abstracted from all lexical items derived out of the root). Through a process of conceptual and linguistic blending, these lexical representations are blended with grammatical patterns (syntactic constructions and verbal stems) to yield the actual linguistic form (i.e., the verbal realization of the blend). The same type of operation is involved in generating basic *pa'al* (*qal*) verbs as well as causative *pi'el* and *hif'il* verbs and clauses. The difference lies in the particular mapping configuration associated with each stem, but not in the generic process. All the *binyanim*, hence, are of the "same order of phenomenon".

Second, the blending analysis attempts to study the function of the Hebrew *binyanim* system as a *whole*. The analysis defines the different *binyanim* as marking different blending schemas: each *binyan* marks the mapping of different aspects of a conceived event into an integrating construction. Thus, the role of each *binyan* is defined in contrast to the

role of all other *binyanim*, and as complementing the function of others (Figure 7-1). Together, the seven *binyanim* form a unified formal system for marking a generic conceptual operation (blending).

In addition to analyzing the connection between conceptual structure, meaning, and grammatical form in the *binyanim* system, the blending analysis provides some new insights into the system: the analysis proposes a clear distinction between the causative function of two different causative stems (*pi'el* and *hif'il*), and motivates some distributional facts about the system (which have not been explained so far) such as the limited proportion of three-place *hif'il* predicates (section 4.2.2). The analysis also accounts for the so-called "grammatically ambiguous" *binyanim*, such as *nif'al* and *hitpa'el* (chapter 6), by suggesting that a single mapping schema is associated with each *binyan*; and for the association of one grammatical function with several *binyanim* (e.g., the many passive *binyanim*) by pointing to differences in blending configurations associated with each passive *binyan*. Finally, the analysis suggests a novel way for analyzing the *interaction* between morphological *binyanim* and syntactic constructions and their interface with semantics: the analysis points to similarity in semantic structure of verbs in *different binyanim* but with the *same* argument structure (e.g., compare Figures 5-3-A and 5-3-B, in chapter 5), as well as of verbs in the *same binyan* but with *different* argument structures (e.g., compare Figures 4-3 and 4-4, in chapter 4).