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PRODUCTIVITY IN THE LEXICON: NEW-WORD FORMATION IN MODERN HEBREW

RUTH A. BERMAN

1. INTRODUCTION

The question of how new words are constructed in Modern Hebrew is of interest from several perspectives. The topic bears on two interrelated issues of concern to current linguistic theory: The nature of linguistic productivity in general, on the one hand, and the distinction between syntactic and lexical productivity, or between the rules of grammar — including those of inflectional morphology — and the domain of the lexicon, on the other. The latter question is the topic of a separate study, based on data from noun-compounding in Modern Hebrew (Berman & Ravid 1986). Here, our focus is on lexical productivity as manifested in current Hebrew usage, as an extension of prior, related studies of my own and of others (Berman 1982; Berman & Sagi 1981; and especially Clark & Berman 1984).[1]

Modern Hebrew affords a particularly good case for analysis of this issue on both extraneous sociolinguistic grounds and for reasons of internal structure. Thus, the language represents a rather extreme instance of "diglossia" as between the puristic requirements of prescriptive or official norms compared with the actual colloquial usage manifested by native speakers of different levels of education — as demonstrated in field-studies by Donag-Kinrot 1978; Nahir 1978; Ravid in preparation; and Schwarzwald 1981 (and for a survey of this area, see Rabin 1984). This disparity is reflected, inter alia, in the relative acceptability of lexical innovations (Alloni-Feinberg 1974, Nir 1982). One question which will concern us in the present study, then, is the extent to which word-formation devices that are officially sanctioned — by the authority of the Hebrew Language Academy; by usage manuals and prescriptive grammars recommended for the schools; and by accepted lexico-

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graphic practice — are reflected in the way speakers in fact construe new words in their language.

A second extraneous factor which makes Hebrew of interest in this connection derives from the peculiar socio-historical circumstances attendant on the revival of Hebrew as a spoken vernacular in the past eighty to a hundred years. There has been an immense spate of new-word formation activity in the language — including the early efforts of Eliezer Ben-Yehuda, David Yellin, and other Hebraists in turn-of-the-century Palestine alongside of more contemporary innovations to cover computer, space-age, and technical terminology in general; current political, economic, cultural, and other media-oriented coinages; as well as slang and similar in-group usages developed among schoolchildren, soldiers, students, and the like.

Finally, in more strictly structural terms, the nature of word-formation is of interest in view of the kind of formal devices available to Hebrew speakers for this purpose. Thus, Hebrew is a relatively synthetic, rather than agglutinating or isolating language, with a complex system of bound morphology and a rich array of lexicalization devices, including the peculiarly Semitic method for forming new words by means of consonantal roots associated with a large, but finite, set of affixal patterns. The main devices serving this function can be ranked in terms of the relative degree of incorporation or separation of different morpho-syntactic constituents, as follows:

(1) Illustration of Major Devices for New-Word Formation in Hebrew[2]

1. Zero-Affixation: [Conversion]	*menahel* V=(he) directs, N=director *bolet* V=protrude, Adj=conspicuous
2. Fused Affixation: [Root + Pattern]	*nóhal* CoCaC = procedure *blita* CCiCa = protuberance
3. External Affixation: [Stem + Affix]	*nohal-iy* = procedural *bolt-ut* = salience
4. Blending: [Stem + Stem]	*zrak-or* = throwlite = projector *rakével* = traincable = cable-car
5. Compounding: [Word + Word]	*zorek diskus* = discus-thrower *rakévet taxtit* = train-under = subway

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2. DESCRIPTION OF STUDY

Against this background, we undertook to investigate how native Hebrew speakers construe different classes of nouns in the actual and potential lexicon of their language. We constructed a test of innovative and conventional nouns, administered in writing to 28 native speakers of Hebrew — 18 college students or college-educated subjects aged 20—30, non-experts in linguistics and Hebrew language, and 10 eleventh-graders aged 17—18.[3] There were no appreciable differences between the responses of these two groups, so their results are treated together below.

The test concerned five classes of nouns: (i) Agent nouns — like the real words *menahel* 'boss, manager', *xacran* 'janitor', *studént* 'student' (see n. 2 above); (ii) Instrument nouns — e.g. *misparáyim* 'scissors', *iparon* 'pencil', *mxonat-ktiva* 'writing-machine = typewriter'; (iii) Place nouns — like *mis'ada* 'restaurant' *malon* 'hotel', *xadar-sheyna* 'bedroom'; (iv) Collective nouns — e.g. *taklitiya* 'record-collection', *gedud* 'troop', *kvucat-kadurégel* 'football team'; and (v) Abstract nouns — e.g. *tóhar* 'purity', *aclut* 'laziness', *cima'on* 'thirst'. Subjects were presented with three different tasks, presented in the following order:

(2) A = Production of innovative coinages — 40 items

Subjects were given definitions of words that do not exist in Hebrew — e.g. "What would you call a person that's always hugging?" = *ha-marbe le-xabek*; "What would you call a collection of balloons?" = *osef shel balonim*.

B — Selection of innovative items — 30 items

Subjects were asked to select 30 out of a total of 52 items, 10 each as best suited to being names of: a person that does a certain job; an instrument, utensil, or machine; and a location, respectively.

C — Listing of conventional words — 35 items

Subjects were asked to write down the first 5 or 10 words came to their minds for each of the five classes of nouns noted above.

The items used as the basis for new coinages in Part A were taken from a list of 40 common verbs used in a prior study of how children and adults comprehend and produce innovative agent and instrument nouns in Hebrew (Berman, Hecht & Clark 1982), while the forms provided in Part B were based on findings of this study combined with the devices typically associated with the various classes of Hebrew nouns, as further specified below. In general, the questionnaire was constructed to test a series of hypotheses about the lexicon in Modern Hebrew, deriving from the following sources:

— Examination of entries for these different classes of nouns in sources concerned primarily with more normative written usage, including a major standard monolingual Hebrew dictionary (Even-Shoshan 1979); a Hebrew-English dictionary based on frequency counts (Balgur & Dagut 1975); listings of Hebrew noun patterns (Avinery 1976, Barkali 1964, Rabinowitz 1947); and studies of specific classes of nouns (Du Nour 1979, Gluska 1981, Ornan 1979);

— Findings of studies which examine different aspects of the current Hebrew lexicon: Alloni-Feinberg 1974, Attias 1980, Berman & Ravid 1985, Bolozky 1978, Donag-Kinrot 1978; Nir 1982; Ravid 1978; Werner 1982, 1983;

— Results of small-scale studies of how speakers coin new terms for specific subclasses of nouns conducted by students of mine in the context of class projects in lexicology; and

— Results of a prior study of 60 children aged three to twelve years and of 12 adults on an oral task requiring them to construct and to interprete innovative agent and instrument nouns in Hebrew (Clark & Berman 1984).

3. HYPOTHESES AND FINDINGS

Below we present the main findings of the questionnaire outlined in (2) above, from the point of view of: the options preferred for coining new terms (Section 3.1); how these accord with normative dictates (3.2); the role of the conventional or well-established lexicon (3.3); types of structural devices favored by speakers (3.4); the status of compounding as a word-formation device (3.5); and the relative transparency or distinctiveness of the different noun classes we examined (3.6).

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Device	Samp respo
CaCCan	*zabkan*
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Verb-an	*mistak*
Final -an	. . . .
m-=Verb	*mekace*
maCCeC	*madlek*
miCCaC	*mislak*
mi/maCCeCa/et	*ma'axe*
	mixlar
. . . iya/yada	*sadran*
	rakavi

(0) Note: Horizontal
class of nouns. Figures

3.1 *Preferred Options*

We assumed that speakers' preferences with respect to new-word formation in their language would not be haphazardly distributed across a random collection of devices, and that there would be a fair amount of a g r e e m e n t among subjects across the different tasks. On the other hand, we felt that speakers' choices might diverge considerably from official norms for new-word formation, and that this discrepancy would be more apparent when speakers were required to innovate freely by producing forms of their own (Part A of the test) than when they were asked to select or judge most suitable forms (Part B). These assumptions were largely borne out by the major response-patterns on the first part of the questionnaire, as set out in Table 1 below.

Coinages for the six items intended to yield A b s t r a c t nouns are not included in Table 1, since this proved to be a problematic category. Over 10% of the items received "no response" blanks — as compared with only 4% no responses across the other categories;

Table 1

Most highly favored response types in the production of innovative forms (Part A), given in percentages for four different classes of nouns [N = 28]

Device	Sample responses	# Items:	Noun Class: Agents 280	Instrum 280	Place 224	Collec 168
CaCCan	*zabkan* hugger		48.2			
Stem-an	*stalkan* fleer		7.9			
Verb-an	*mistaklan* looker		27.5			
Final -an	. . . . .		83.6(1)			
m-=Verb	*mekacec* cutter			7.1		
maCCeC	*madlek* lighter			21.4		
miCCaC	*mislak* run-place				8.6	
mi/maCCeCa/et	*ma'axela* eating-utensil					11.9
				26.4	32.9	
	mixlama dream-place					
				54.9	41.5	
. . . iya/yada	*sadraniya* arranging-place					
	rakaviyáda train-collection				30.8	57.7

(1) Note: Horizontal lines mark off the most favored responses for each class of nouns. Figures entered between lines are sums of several subclasses.

and subjects interpreted these as adjectives in over 20% (35 out of 168) of their responses — giving either real words, e.g. *matok* 'sweet' for the quality of something 'tasty' (Hebrew *ta'im*), *margía* 'soothing' as the quality of something 'blue' *(kaxol)*, *meyushan* 'antiquated' for the quality of a thing that is old (*yashan* — with the same root), or else novel adjectives such as *yashin* 'old-y', or participial-like forms — e.g. *menumax* 'shorted' for the quality of a person who is short *(namux)*. In general, results on this subset yield a very mixed picture, as follows. Around 40% of the coinages took one of three forms commonly used for abstract nouns in Hebrew, thus: 22% were given the suffix *-ut*, as in innovative *te'im-ut* 'tasti-ness', *raz-ut* 'thin-ness'; another 10% (17 words) got the ending *-on* as an external suffix (e.g. *nemux-on* 'short-ness') or as part of an affixal pattern, e.g. *kixalon* 'blue-ness', as in conventional *shiga'on* 'madness', (but 11 of these were non-innovative — the single item *razon*, which is the conventional word for 'thinness'); and another 12 words (7%) took a vowel-internal CóCVC — e.g. innovative *nómex* 'shorty-ness', *tó'am* 'taste-ness', *rózi* 'thinny-ness'. Other answers included items ending in *-an* — mostly (16 out of 24) for the single item defined with a verb rather than an adjective to name the quality of a person who is constantly falling *(nofel)*, as well as numerous more idiosyncratic forms, depending on the particular input item in each case. It thus seems that this noun class — at any rate as represented in the task at hand — did not evoke any single response or class of responses as most favored for new-word formation. In the subset of "abstract" nouns, rather, inter-subject agreement was manifested in the high number of identical answers given to a specific item — as noted for conventional *razon* 'thinness' and innovative *naflan* 'faller/falling' above.

Elsewhere, our hypothesis of "agreement" is largely confirmed by how subjects performed when deriving innovative nouns from verbs. This is overwhelmingly the case for the 10 Agent noun items randomly distributed across the 40 definitions constituting Part A: Over 80% of these coinages ended in the syllable *-an* — exactly corresponding to the clear preference for this ending shown in innovative agent nouns in our earlier, oral study (Clark & Berman 1984). Such forms also account for nearly a quarter of all the Instrument nouns coined as well, although these yielded a more varied picture than the agents, as follows: Around one-quarter were forms ending in *-an*; another quarter were masculine nouns with a prefixal *m-*; and a q
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prefixal *m-*; and a quarter were words with prefixal *m-* and a feminine suffix (stressed *-a* or unstressed *-et*). This reflects the greater variety of forms typical of instrument nouns in general — as further discussed below. Place nouns also selected as high as one-third feminine nouns with prefixal *m-*; another third took the less conventional option of suffixal *-iya* — an ending which together with other non-native feminine endings such as *-iyáda* accounts for over half of all the innovative Collective nouns as well.

Beyond these main trends, as shown in Table 1 above, each noun class manifested at least one other relatively favored response, thus: Agents — 5.5% *benoni* (present-tense, participial) verb forms; Instruments — 11.5% various suffixes including *-iya* and also *-it* (e.g. *xapar-it* for a machine used for digging = *la-xpor*); Collectives — 10% forms with plural endings or other suffixes, etc. Other responses varied, coming to around only 10% of the Part A forms coined for the six different noun classes, as follows: No answer — 4.5%; real words (i.e. failure to innovate) — 4%; blends and compounds — 3.5%.

Clearly, then, responses given by a large group of native-speakers asked to coin names for a variety of items, randomly distributed across the five classes of agents, instruments, places, collectives, and abstract states were by no means unmotivated or haphazard, but showed a considerable degree of clustering or agreement among the subjects. Moreover, as we note further below, these responses accord only partially with the specifications of official or normative innovators (Section 3.2) as well as of the conventional lexicon (3.3 below).

3.2 *Comparison with Normative Requirements*

Our next hypothesis was that innovative coinages would not be fully in accord with the prescriptive requirements as to the "desired" forms for coining new terms in each lexical class — for instance, CaCaC for agent-occupations — e.g. *pasal* 'sculptor', *ganan* 'gardener'; maCCeC for instrument nouns — e.g. *mazleg* 'fork', *magber* 'amplifier'; miCCaCa for place-nouns — e.g. *mis'ada* 'restaurant', *mirpa'a* 'clinic'; and CaCeCet for collectives — e.g. *tayéset* 'squadron' *canéret* 'pipeworks'. We assumed that responses in Part B of the test, where subjects were required to judge the suitability of innovative forms with respect to nouns in the different classes rather

than to coin new items themselves as in Part A, would be a truer reflection of selfconscious norms for how words "should" be constructed. And this, in fact, proved to be the case, as shown by the breakdown of results for Part B of the test, where subjects were required to select for each of the three classes — Agent, Instrument, Place — 10 items out of the innovative forms presented to them (30 out of a total 52).

Table 2

Distribution of forms selected as innovative items suited to three classes of nouns (Part B), given in percentages for five morphological categories [N = 28]

Sample forms	Morphological Categories*						
	-an	ma...(a)	mi...(a)	iya	CVCVC	Verb	Total**
	dalt-an door-er *kivut-an* address-er	*madgem* exampl-er *marshema* list-ant	*mitpas* catch-et *mimtaka* sweet-er	*shamniya* fat-ery *tmuniya* picture-y	*zashid* suspectee *zarar* hurry-er	*mekatleg* catalog-ist *mashrit* thread-er	
Agent	49%	1.3%	—	—	19.7%	19.2%	89.2%
Instr	11%	42.5%	10%	+ 3%	16.0%	16.0%	98.4%
Place	1.8%	28.6%	40%	16.7%	5.7%	1.0%	94.1%

Note: *Each of these 5 morphological categories was represented by 10 items. Percentages in the table were calculated out of the total number of items selected for that category. Thus, if each of the 28 subjects selected 10 agent nouns, then the total responses = 280 for agent nouns.
** The fact that the totals do not add up to 100% is due to occasional selection of other forms presented on this part of the test, outside of the six options listed here — e.g. *koshl-ut* 'failing-ness', *pikaxon* 'clever-ty'.

The findings for Part B show a clear trend to differentiation between the three noun classes: Over 40% of all responses selected words ending in *-an* for Agents, words beginning with *ma-* for Instruments, and words beginning with *mi-* for Places. On this task, however, speakers selected a variety of innovative forms well beyond the range of those which they deployed in creating coinages of their own in Part A. Specifically, in the previous task, subjects had conspicuously avoided options which are less "transparent", in the sense of manifesting overt one-to-one relations between a given lexical class of noun and a given stem-external affix to denote that class (and see further Section 3.4 below). Yet here, in Part B,

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	CVCVC	Verb	Total**
s	*zashid* suspectee *zaraz* hurry-er	*mekatleg* catalog-ist *mashzil* thread-er	
	19.7%	19.2%	89.2%
	16.0%	16.0%	98.4%
	5.7%	1.0%	94.1%

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many of the options which were selected for both Agent and Instrument nouns were relatively more opaque forms: those where root plus vowel alternations yield interdigital CVCVC surface forms and those with a *beneni* participial form which could also be a present-tense verb. Thus, whereas t o g e t h e r these two devices account for as few as 7% of all responses on Part A (3.5% and 4% for agent and instrument nouns respectively), they were selected in some 30%, or almost one-third, of the cases in Part B (15.5% and 14% respectively). Moreover, in Part B, Place nouns showed a higher proportion of the normative miCCaCa pattern than of the corresponding maCCeCa forms characteristic of colloquial usage (cf. required *midraxa* 'sidewalk' alongside of commonplace *madrexa* — as further discussed in Section 4 below).

The distinction between "colloquial" or freer coinages in Part A and the more "normative" or selfconscious judgements made in Part B is yielded by comparing the most favored responses given on these two tasks, as in Table 3 below.

Table 3

Distribution of responses on most favored categories for innovations in open-ended production (Part A) and in selection of forms presented (Part B), given in percentages [N = 28]

Class	Form	Part A (production)		Part B (selection)	
Agents	CaCCan	48		30	
	Word/Stem-*an*	35		20	
	Others:		17		50
Instruments	maCCeC	19		32	
	maCCeCa	15		11	
	. . . an	25		11	
	Others:		41		46
Places	miCCaC(a/et)	21		45	
	maCCeC(a)	20		28	
	. . . iya	25		17	
	Others:		34		10

These findings are not consistent with what we had evaluated as the normatively preferred devices for the different noun classes, as established by careful examinations of word-lists and other sources such as those listed at the end of Section 2 above. We assumed that the official coinages would favor the following breakdown of

forms: Agents would be evenly distributed between (i) CaCCan — e.g. *batlan* 'idler', *parshan* 'commentator'; (ii) CaCVC — e.g. *cayad* 'hunter', *katav* 'reporter' and also *kacin* 'officer', *pakid* 'clerk'; and (iii) Conversion — e.g. *shofet* 'judges / a judge' judge', *me'amen* 'coaches / a coach'; contrastingly, Instruments would opt for (i) the maCCeC pattern, as in established *mazleg* 'fork', *masrek* 'comb' and more recent *makren* 'projector', *macber* 'battery'; (ii) some feminine maCCeCa nouns, as in recent *mamtera* 'sprinkler', *mavxena* 'test-tube'; and (iii) the so-called segolate pattern, as in established *degel* 'flag', *resen* 'bridle', and newer *belem* 'brake', *hedek* 'trigger'; while in normative terms, Place nouns would require either miCCaCa as in *mis'ada* 'restaurant', *mixlala* 'college', and, less commonly, masculine miCCaC nouns like *misrad* 'office', *mitbax* 'kitchen', or else they would take compound forms, particularly with the superordinate head noun *bet-*, as the bound form of 'house = place-of' — as in established *bet-knéset* 'synagogue' *bet-xaroshet* 'factory'.

These predictions were not borne out at all in the open-ended production task of Part A — even although the questionnaire was administered in writing, and we had assumed that this medium would yield more selfconscious renderings than a comparable oral task had earlier shown to be the case (Clark & Berman 1984). More surprisingly, these normative options were by no means the only ones selected in the judgement task given in Part B, either. This accords well with findings for the adults who participated in our earlier, oral study. They had consistently avoided CVCVC forms for agents and *ma-* prefix forms for instruments in a production task, but when subsequently confronted with such innovative forms in a comprehension task, they responded by revealing their awareness of more official norms. Thus, after they had been presented with several coinages such as *maxper* 'digger' *madlek* 'lighter', *mashbera* 'breaker' to indicate instruments, respondents often said things like "Oh, I should have given that before, too!", or "Oh, that is the (right/correct/good) way we should talk about instruments". Such comments, like the discrepancies we found between coinages (Part A) and selections (Part B) in the present, written tasks, indicate that what speakers do in themselves making up new words is by no means identical to the set of normatively approved or official options available to them at a more selfconscious level of performance.

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Ranking	Agents N = 280
1st	CaCaC [37%]
2nd	Benoni Verbs [20%]
3rd	...an/ay [16%/14%
Others	13%

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3.3 *Role of the Conventional Lexicon*

Here we refer to the status of well-established items in the shared lexicon of users (what Aronoff 1976 terms "old" words; see, too, Berman & Ravid 1986). We hypothesized that in this respect formal factors would carry less weight than amount and centrality of occurrences in actual usage. That is, in their own wordstock, speakers will be attentive to prototypical instances of categories — where this notion is characterizable not in structural terms, but in relation to the everyday familiarity or pragmatic salience of referents, on the one hand, and the accessibility or linguistic prominence of the lexical items which encode them, on the other. We tried to evaluate this by asking subjects to list the first words that came to mind for each of the classes in question here (Part C). Results for the most favored response-types are given in Table 4.

Table 4

Most favored response types in listing of real words for five classes of nouns (Part C), in percentages

Ranking	Noun class				
	Agents N = 280	Instruments 280	Places 140	Collectives 140	Abstracts 140
1st	CaCaC [37%]	maCCeC(a) [28.5%]	ma/miCCeCa [41.5%]	. . . iya [30%]	Adjectives [32%]
2nd	Benoni Verbs [20%]	Favorite Items [25.5%]	. . . iya [20%]	Sporadic Items [30%]	Action-Nominal [30%]
3rd	. . . an/ay [16%/14%]	Sporadic Items [21.5%	Compounds [14%]	No Response [30%]	. . . ut [17%]
Others	13%	24.5%	23.5%	10%	21%

When asked to list words known to them in the different categories, speakers did not make reference to any particular structural device or morphological pattern to start with. They initially wrote down words that seemed to them "best exemplars" of a given class — for instance, words like *nagar* 'carpenter, *xashmelay* 'electrician' for a person with a certain job. Very popular among the agents were nouns like: *more* 'teacher', *mehandes* 'engineer', *masger* 'metalworker', indicating, firstly, that semantics rather than morphological form dictated their choices and, secondly, that there was a high

enough level of agreement among these particular items to suggest a clearly shared type of response-pattern for different subjects. Interestingly enough, over one-third of the agent nouns listed were in the CaCaC pattern, e.g. *tabax* 'cook', *tayas* 'pilot' *nagar* 'carpenter', in marked contrast to what we had found on the two innovative tasks. This suggests that such nouns are noteworthy as part of the *established* rather than of the *potential* lexicon of agent-nouns in current Hebrew usage. Yet in this matter, too, semantics was uppermost: If a subject gave a noun such as, say, *xayat* 'tailor' chances are his or her next word on the list would be *toféret* 'dress-maker', just as after giving as an instrument noun the word *iparon* 'pencil', very commonly indeed the subject would then list *et* 'pen' and/or *sargel* 'ruler'. The impact of semantic prototypicality was even clearer in the listing of instrument nouns. Here, the two most popular items (given by more than 20 out of the 28 subjects!) were the words *patish* 'hammer' and *kaf* 'spoon', followed by some more incidental or sporadic items given by five or fewer of the subjects — e.g. *mexonit* 'car', *mekarer* 'fridge', as well as loan words like *blender*, *mikser*.

The specific Place nouns selected from the conventional vocabulary were, however, more in accord with the coinages of the earlier sections of the test, around 40% of the words given being in the form of m. . .a — e.g. *maxbesa* 'laundry', *mizbala* 'garbage-dump'. But this set also included relatively many compounds —e.g. *bet-séfer* 'house-book' = 'school', *ulam rikudim* 'dance hall', *migraš sport* 'sportsfield'.

In contrast to these three sets of nouns — words for agents, instruments, and places — speakers seemed to have a hard time accessing collective nouns in their vocabulary. This may be because they are not even aware that words like *kvutsa* 'group', *arema* 'heap', or *kovec* 'set' are in fact members of this particular semantic category. Thus, several subjects gave the word *kita* 'class(room)' as the name of a place, but none considered that the same word could also specify a collection (of people).

The results on Part C strongly confirm our hypothesis that the devices which speakers favor for innovating new words are only in part a reflection of the well-established vocabulary. Thus, new agent nouns today rarely take the surface shape of CaCiC, although Biblical Hebrew had several such nouns — e.g. *kacin* 'officer' *nasix* 'prince' (possibly as many as its CaCaC nouns like *tabax* 'cook', *sabal* 'porter');[4] and bo
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'porter');[4] and both Biblical and Mishnaic Hebrew had adjectives with the same surface form — a pattern which today is used almost exclusively for coining adjectives with a passive '-able' sense — e.g. *shavir* 'break-able = fragile', *daliq* 'burn-able = flammable' (and see further Section 4 below). From our point of view, then, this pattern is currently "open" or lexically productive for this meaning, irrespective of how many such form-meaning links may happen to be available in the well-established lexicon. Relatedly, the *benoni* present-tense verb form — the option of conversion, that is — is very common indeed for well-established, conventional agent nouns and far less so for instrument nouns (Berman 1978, 394—405); yet it is seldom adopted as a means for "spontaneous" coinages for people-agents. The *-an* ending is rare for occurrent instrument nouns (exceptions being *potxan* '[can] opener', *mazgan* '[air] conditioner') — yet it accounted for some one-quarter of all the instrument nouns innovated in the current study, and for an even higher proportion of such nouns in our earlier, oral study — where it was given over half the time by the eleven-year olds and adults asked to name instruments used to carry out certain activities (Clark & Berman 1984). These findings clearly support the claims made by current research concerning the need to distinguish clearly between "old" and "new" words, hence between items which have become established in the conventional wordstock of a language and its speakers, on the one hand, and the currently productive devices for extending this repertoire, on the other (and see, further, the discussion in Section 4 below).

3.4 *Favored Structural Devices*

We had hypothesized that in a very general way speakers of Modern Hebrew would select innovative — and to a lesser extent also conventional — items in terms of certain *structural* preferences, which we had a priori ranked in the following order, from most highly favored to least favored devices: 1) Stem/word + external affix; 2) Root-incorporated affix, and 3) Analytic compounding and blending — as illustrated in Section 1 above.

This set of hypotheses was based on the assumption that in current Hebrew external affixes are taking over as a more productive device than in earlier times — providing the language with a more "natural", agglutinating kind of option (Dressler 1981). Here, by

"productive" we refer to the availability of new *structural* options which were not in general use at earlier stages of the language. These include: the widespread contemporary use of suffixal *-iy* to derive denominal adjectives, far beyond its more restricted range of application in Medieval Hebrew (e.g. recent *memshalt-iy* 'government-al', *xorp-iy* 'winter-y'); the extension of suffixal *-ut* to express a wide variety of abstract state nouns — as in recent *me'urav-ut* 'involve-ment', *metuxkam-ut* 'sophisticated-ness', *xeshbona'ut* 'accountan-cy'; the addition of *-an* as an agent marker, not only on full nouns as in, say, *mizrax-an* 'orient-alist', *tavru'-an* sanitation-ist', but also with present-tense stems to yield words like juvenile *marbic-an* 'hit-ter', and *mexatet-an* 'pryer', *mistakl-an* 'starer'; the extension of the suffixes *-iya* and the foreign *-iyáda* for collective and place-names — e.g. well established *nagar-iya* 'carpentry-shop', *merkaz-iya* 'central-exchange', and less conventional *glida-riya* 'icecream-ery', *tremp-iyáda* 'hitchhike-station'; wide use of *-on* to indicate periodicals — e.g. well-established *shnat-on* 'annual', newer *mkom-on* 'local (paper)' — as well as diminutives — e.g. *xadr-on* 'little-room', *dub-on* 'teddy-bear'; and the extension of the suffix *-it* not only in forming diminutives like *kos-it* 'little-glass', *map-it* 'napkin = little cloth', but also for a wide range of food brandnames such as *shum-it* 'garlic-cheese', and *laxm-it* 'wheat-cracker', or loan-based names for the soft-drinks *trop-it*, *shoko-lit* (Attias 1980). Alongside of all these, a further noteworthy innovation in stem-external affixation — one not addressed in our present study — is the current use of prefixes based on Graeco-Latin loan translations, such as *ben-le'umi* 'inter-national' *rav-goni* 'varie-gated', *tat-karka'i* 'sub-terranean', *tlat-memadi* 'three-dimensional' — a device totally foreign to earlier stages of Hebrew.

Despite the extensiveness of such devices, results of our study reveal that speakers still rely heavily on the classic Semitic device of consonantal root extraction plus affixation by means of an accepted morphological pattern of the kind traditionally termed *mishkal*. (Implications of this situation for the theory of Natural Morphology are discussed in Werner 1982.) This was particularly true for the three noun classes we chose to focus on — Agents, Instruments, and Places respectively. This is revealed by the responses to Part A, where subjects were asked to innovate on the basis of definitions containing verbs in the infinitive form, that is, with a prefixal *l-* marker, often with an additional stem-prefix as

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well (compare, say, *le'exol* 'to-eat'/*axlan* 'eater', *lehartiv* 'to-wet'/*marteva* 'wetter'). Thus, responses on Part A, as summed up in (3) below, overwhelmingly (88% in all) took some form of morphological affixation — over one half in the form of root+incorporated affixal pattern — i.e. Type (2) of the three listed above — and around one-third in the form of stem/word plus external affix — which we had listed as potentially Type (1), or the most favored.

(3) Distribution of affixation devices in Part A coinages:

Device	Noun Classes [Raw Scores]					Total %
	Agt N = 280	Instr 280	Place 224	Coll 168	Abst 168	
Root + Pattern	157	205	129	38	70	599 [=53.5%]
Stem + Suffix	105	54	68	108	60	395 [=35.3%]
[Most favored suffix]	-an	-an	-iya	-iya	-ut	994 [=88.8%]

Other devices, accounting for only 126 out of a total 1120 possible responses, included a small number of: blanks, real words (conventional lexical items), conversion by means of *benoni* verbs, compounds and blends. This tendency to rely on morphology, rather than on conversion or compounding, was obviously also manifested in Part B, where some form of affixation was the only option given subjects. Yet even in this task, subjects clearly selected root + pattern affixation far more commonly than they did stem plus external affix options for the three classes of Agent, Instrument, and Place included in this part of the test. Only with respect to Part C, the listing of familiar words, were the responses very mixed in this respect. Yet here, too, some kind of formal affixal device was the basis for many of the words subjects selected from their own vocabulary, applying to over half the Agent nouns, and around one-third of Instrument (37%) and Place (33.5%) nouns. Only the Collective and Abstract nouns tended to yield a more mixed, rather inconclusive picture, as noted in Section 3.3 above.

These findings lead us to conclude that both in the well-established or "old" wordstock, and even more so in their own innovative coinages, Hebrew speakers make very broad use of three strictly morphological, or word-internal, devices for word-formation: They

select root + internal affixes mainly in relation to familiar CaCaC agent nouns and also for coining new CaCiC adjectives with the sense of '-able'; they rely heavily on combining consonantal roots with affixal patterns which include a suffixal and/or a prefixal syllable; and they increasingly tend to use word or stem plus an external suffix for coining new names for a wide variety of semantic classes of items — as noted at the beginning of this subsection.

3.5 *Avoidance of Compounding*

Perhaps the most striking result was that across the test, subjects avoided juxtaposition or compounding as a means of new-word formation. The forms presented to subjects for selection in Part B did not include any compounds; but in Part A only 5 out of more than a thousand items were given in the form of a compound, while in Part C only 4% of the familiar words listed were compounds — mainly, as noted, for naming places, occasionally for instruments, e.g. *mxonat kvisa/dfus/tfira* 'machine-for washing, printing, sewing' respectively.[5] This accords exactly with the findings of our earlier, oral study — where adults gave only 2.5% responses in compound for innovative agents and instruments, even though half the input verbs were presented to them together with a direct object (e.g. "a girl whose job is to pull *wagons*", "a tool that is used to scatter *buttons*". Clark & Berman 1984).

We choose to explain these findings as follows. Firstly, in strictly *structural* terms, compounding in Hebrew is relatively limited, along the following lines: It derives primarily compound *nouns* from nouns; it is restricted in the range of compound *adjectives* it allows — particularly in comparison with English and other Germanic languages (Meys 1975, Smith 1982); and it totally disallows *compound-verb* formation, as is common in other languages (Clark & Clark 1979, Roeper & Siegel 1978, Mithun 1984 : 848) owing to the Semitic constraint that all (although not only) verbs be constructed by means of a fixed set of *binyan* conjugation patterns.

Secondly, in terms of actual usage, everyday spoken Hebrew, in marked contrast to more normative formal styles of expository or literary writing, deploys a variety of *alternative structures* for expressing noun-noun relations with no overt predicate. These include the widespread use of the genitive particle *shel* 'of' to express possession, and the tendency to substitute denominal-adjective

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(4) *sixa telefon-it* vs *sixat telefon*
talk phone-y talk- phone = 'phone conversation'

kénes refu'i vs *kénes rof'im*
congress medical congress- doctors = 'medical meeting'

avoda misrad-it vs *avodat misrad*
work office-y work- office = 'office work'

bgadim keyc-iy-im vs *bigdey káyic*
clothes summer-y clothes- summer = 'summer clothes'

But over and above these and other formal constraints — both syntactic and semantic (Berman & Ravid 1986) — as well as structural options, we wish to suggest that compounding is not favored in current Hebrew usage as a *lexical* device for new-word formation. That is, speakers do not favor compounds as a means for labelling objects and entities viewed as nameworthy within their speech community (Downing 1977). As evidence, we note the very consistent findings from the present study and from our earlier, oral study, revealing almost total disregard of compounding as a possible option for lexical innovation. And several other observations from contemporary lexical usage provide further support for our claim that Hebrew speakers today prefer word-internal morphology for deriving new words in their language as opposed to the analytic, concatenating device of word-compounding.

a) In a task requiring native Hebrew-speaking subjects to rank 30 compound expression for relative degree of lexicalization, only one, the expression *yom-huledet* 'birth-day', was evaluated as being "like a single word" by over 70% of the subjects, and only three others received around 50% for this evaluation — *sho'ev avak* 'vacuum-cleaner = hoover', *ke'ev rosh* = 'head-ache', and *aruxat-boker* = 'morning-meal, breakfast' (Berman & Ravid 1986). Many of the 30 expressions listed there (e.g. *xalom-balahot* 'nightmare', *kova-plada* 'steel hat = helmet', *pney hayam* 'sea-face = sea-level', *xevrat-bat* 'daughter-company = subsidiary') were judged by most subjects to be very familiar, hence to some extent lexicalized. But speakers did not construe such compound expressions as fully "wordlike" in status.

b) Many of the lexicalized compounds which form part of the current Hebrew wordstock are the result of *loan-translations* taken over from languages rich in lexical compounds. These include numerous everyday items such as those noted in (a) above, as well as *béged-yam* 'bathing-suit', *mxonat-kvisa* 'washing-machine', *xadar-sheyna* 'sleeping-room = bedroom'. The external source of such terms indicates that they are not the result of spontaneous coinages from within the monolingual Hebrew-speaking community, made by speakers who rely on their own native repertoire of grammatical and lexical devices for new-word formation.

c) Alongside of such expressions as these, are many others which were introduced as compounds by Hebraists early on in the revival of the language as a spoken vernacular, but were subsequently replaced by singleword items, derived by means of affixation, as shown by comparing the earlier, compound forms in (5-i) with the monolexemic forms currently in use in (5-ii).

(5) Agent	(i) *ish cava*	(ii) *xayal*
	man- army	soldier
Instrument	*te'udat masa*	*dark-on*
	certificate- travel	way-Suff = passport
Place	*bet sfarim*	*sifr-iya*
	house- books	book-Suff = library

Dozens of examples could be added to these (as is done, for example in Kutscher 1982, Sivan 1980). And there are many, many words which might in principle have been introduced as compounds, where morphological derivation was opted for — e.g. *raftan* 'dairyman' from *refet* 'dairy', *mavxena* 'test-tube' from *livxon* 'to test', *makólet* 'grocery-store', cf. *kolel* 'contains'. Interestingly enough, such coinages rely on both types of affixation noted in Section 3.4 above: Synthetic combination of affixal patterns with a consonantal root and more analytic juxtapositioning of affixal endings to a word or stem.

d) A fourth piece of evidence showing that speakers do not favor compounding as a means for labelling objects and entities is provided by the phenomenon of *clipping* — e.g. the instrument nouns *mediax kelim* 'washer-of dishes = dishwasher' and *mazgan avir* 'temperer-of air = air conditioner' are typically rendered by the

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initial, head noun alone. Even more striking are truncations of loan compounds, e.g. *super* 'supermarket', *teyp* 'tape-recorder', *tranzistor* among many others. And such clippings are also found in higher styles, including poetry (Sadan 1979).

e) Another relevant phenomenon is the widespread use of a device which both juxtaposes two words and fuses them into a single morphophonological word in the form of *blends* in current Hebrew, e.g. *shmartaf* 'watch-young = babysitter', *xamshir* 'five-verse [fiverse] = 'limerick'. This process is very common with words which have recently become entrenched in the conventional lexicon (Berman & Ravid 1986, Nir 1980). Moreover, items taking this peculiarly fused form account for some 15% of all the innovations given by over 100 subjects in a test devised specifically to investigate where and how Hebrew speakers do in fact form noun compounds (Berman, in press).

f) Next, we suggest that cases where compounding remains quite productive as a means of constructing new lexical items in Hebrew are largely restricted to a single type of *semantic* relation — where a general-purpose superordinate term functions as the head, and various hyponomous subordinates as adjuncts. True, in the conventional lexicon, Agent nouns are typically not formed by means of compounding, in contrast to the widespread use of the head-noun *bá'al* 'owner-of, master-of' for this purpose at earlier stages of the language (and compare the many such compounds in English — e.g. *policeman, mailman, milkman, doorman*). On the other hand, Instrument and Place nouns commonly take a compound form in a quite restricted manner — with the head being a *superordinate* term such as *mexonat-* 'machine' (cf. *mxonat-kvisa, ktiva, gilúax* for 'washing-machine', 'typewriter', and 'razor' respectively) or *kley-* 'utensils' for collectives (e.g. *kley-mīta, kley-avoda, kley-rézev* for 'bedclothes', 'work-utensils = tools', and 'vehicles' respectively); and, similarly *bet-* 'house-of', *migrash-* 'field-of', *ulam* 'hall-of' as head nouns in the Hebrew equivalents of words meaning 'factory', hospital'; 'sportsfield', 'tenniscourt'; or 'dance-hall', 'gymnasium', respectively. These may be the most basic (or immature) kinds of compounds — as suggested by the fact that in a task eliciting innovative agent and instrument nouns, English-speaking three-year olds gave relatively many compound responses with general-purpose, superordinate head nouns such as *man, guy, woman* to indicate agency (Clark & Hecht 1982). And the relatively few compounds

given on the same task by Hebrew-speaking children aged 5 to 7 (never by the three-year olds), mostly used the head noun *maxshir* 'instrument' or *mexona* 'machine' (Clark & Berman 1984).

g) As a final source of evidence for the fact that compounding is not a common device for new-word formation in current Hebrew, we note evidence from research in progress on children's acquisition and use of such constructions (Berman forthcoming, Bilev 1985). A survey of children's usage in both interactive conversational settings and in story-telling tasks reveals that relatively very few compounds are used as part of the regular wordstock of these young speakers. And we found virtually no innovative use of such terms at all, even in naming unfamiliar objects and animals in a story picturebook, in contrast to the numerous within-word innovative coinages occurring at this age (Berman & Sagi 1981). Moreover, by age 4 or 5, Israeli children do know how to form noun compounds when required to do so in a structured elicitation task (Clark & Berman in press). This suggests that preschoolers' natural or untutored knowledge of Hebrew includes the process of compounding as part of the *grammatical* rules which they have internalized, but that they do not necessarily deploy it as a spontaneous means of forming new words in their use of the language.

3.6 *Transparency of Noun-Class Distinctions*

The present study, as noted, extended an earlier investigation of Agent and Instrument nouns, to include the categories of Place, Collective, and Abstract nouns. We hypothesized that classes of nouns which are semantically related might manifest a certain formal similarity, too, whereas classes of nouns that cannot be subsumed under a single superordinate category would take maximally distinct surface forms. Thus, we expected names for Agents and Instruments — as people and objects which perform activities — to share more surface forms than, say, Agents and Places. On the other hand, we did not expect any strong pull towards total *transparency*, or a fully one-to-one relation between meaning and form. Such distinctiveness is often advocated by linguistic purists especially for purposes of self-conscious, official word-coinings. For instance, it has been recommended that the feminine pattern maCCeCa be used to label larger machines — e.g. *makdexa* 'pump, oilrig' — whereas masculine maCCeC be reserved for smaller, mainly

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manual instruments — e.g. from the same root, *makdéax* 'drill'; and that the pattern CaCaC be kept for occupational agents — as in *sabal* 'porter, stevedore', *pasal* 'sculptor' — while CaCCan be restricted to attributive terms — e.g. *batlan* 'idler, sluggard', *shakran* 'liar' (Rabinowitz 1947, and Ornal 1979 on the "regularity" of interpretation of CaCaC nouns in Hebrew). We assumed, rather, that familiarity with terms from the conventional lexicon which embody violations of form/meaning distinctiveness would combine with knowledge of common semantic generalizations to yield usages that conflict with more normative specifications for one-form/one-meaning regularities.

Specifically, we assumed that Agents and Instrument nouns might share some forms, as they often do in the established lexicon (of Hebrew as of many other languages) — e.g. present-tense *menahel* 'manager' and *mehadek* 'paper-clip', or CoCCan *tokfan* 'aggressor' and *potxan* 'can-opener'; that Instrument and Place nouns would share the maCCeCa pattern — as in well-established *mamtera* 'sprinkler', *mashtela* '(plant) nursery'; and that Abstract nouns would be formed primarily with an external *-ut* suffix — as in well-established *yald-ut* 'child-hood', more recent *manhig-ut* 'leadership', rather than with the less unique, hence less transparent internal-vowel pattern with penultimate stress, e.g. *tóhar* 'purity', *késem* 'magic', or the affixal pattern CiCaCon, e.g. *shiga'on* 'madness', *xidalon* 'cessation' — as is suggested by children's spontaneous coinages, such as **cmi'ut* for conventional *cima'on* 'thirst-iness',

Table 5

Average percentage of innovative forms produced (Part A) and selected (Part B) and of words listed (Part C) across four classes of nouns, using different structural devices

Device	Agent	Instrum	Place	Collec
CaCaC	8.5	–	–	–
-an	66.0	18.0	–	–
Benoni [verb participle]	17.0	12.5	–	–
maCCeC	–	25.5	–	–
maCCeCa/et	–	13.5	25.0	–
miCCVC(a/et)	–	11.0	33.5	–
... iya	–	–	24.0	58.0

**re'evut* for conventional *rá'av* 'hunger = hungriness' (Berman & Sagi 1981).

This latter class proved problematic. Recall, firstly, that Abstract nouns were not included in the judgement task in Part B of the test; and in the production of coinages (Part A) as well as listing of familiar words in Part B, responses were often in the form of adjectives or else a mixed and varied, highly idiosyncratic set of forms. The picture which emerges for preferred forms for the remaining four categories, averaged across the three tasks of the test — new-word formation in A, judgement of innovations in B, and listing of occurrent words in C — is presented in Table 5 below. The table lists only those devices which received as high as almost 10% of the total responses — so that the totals come to less than 100%.

The figures in Table 5 reveal a continuum of form/meaning interrelations, as follows:

(6) Agent — Instrum — Place — Collective

At one end we find Agents, representing the most highly "individuated" class of nouns, contrasting extremely with the less specific class of Collectives at the other end. Instrument nouns are the most mixed subclass, sharing properties with both animate Agents and statically located Places. This very clear finding across the three tests, such that Instrument nouns yielded the most varied set of associated forms, accords well with findings from other studies (Clark & Berman 1984, Ravid 1978), as well as with the set of instrument nouns in the conventional lexicon. Thus, of all the classes examined here, they are the most highly restricted in meaning: A person can be a carpenter, gardener, tennis-player and dancer as well as a father, liar, braggart, or glutton at one and the same time; but a scissors is nothing but a scissors, and as such it is distinct from other objects also used for cutting, such as a knife, a saw, a pruning fork, or a lawnmower. Lower down on the continuum in (6) are Place nouns, which are semantically less restricted in application than instruments, since a school, hospital, or factory, say, can each be the location of numerous different activities, and many different acts can be performed even in such specialized places as a laundry, gymnasium, or restaurant. Besides, a place-term is potentially ambiguous as between the location of an activity

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or an object reading. Thus a library is both a place for reading and for books, just as a nursery is both a place for planting and for plants. Hence at the far end of the scale, Collective nouns share formal features with place nouns, but not with instruments or agents.

In an earlier study, we pointed to the arbitrariness of selection of a specific formal device even within highly restricted semantic domains (Berman 1978: 394—401). This is clearly shown by the conventional choice of terms in such areas as music or educational occupations in Hebrew, thus:

(7) Device	Music		Schooling	
CaCaC	*nagan*	player	*ganén-et*	nursery-teacher
	kanar	violinist		
Benoni	*melave*	accompanist	*more*	teacher
Verb	*metofef*	drummer	*mefakéax*	inspector
	malxin	composer	*marce*	lecturer
-an	*psantran*	pianist	*targilan*	exerciser
	xacocran	trumpeter		
Loan	*muzika'i*	musician	*studént*	
			profesor	

Such facts from the conventional lexicon combined with the findings of our study show that the identification of form with meaning is only partial, and that such correspondences tend to be collapsed into more general superordinate categories, thus: *-an* for Agents, both occupational and attributive, and to a lesser degree for Instruments;[6] *ma. . .a* for both Instrument and Place nouns; and *-iya* for both Places and Collectives. Thus, avoidance of total transparency — in innovative usage as in the established lexicon — applies to Modern Hebrew, even though it is a language which in principle possesses such a rich array of formal devices for new-word formation and one whose speakers in practice — as we have tried to show above — still avail themselves liberally of many of these different options.

4. DISCUSSION

In this final section, we consider the implications of our findings for Modern Hebrew in relation to the issue of lexical productivity in general. Discussion of the role and nature of linguistic "produc-

tivity" is thus confined here to the *lexical* level of word-formation processes as against the creative or generative properties of rules of the *grammar*. In the latter case, operations and constraints are structure-dependent, and refer to abstract structures such as N, V, or A, Preposition or Particle, Subject or Direct Object, rather than to words or classes of words. Lexical productivity, on the other hand, concerns the extent to which a given word-formation device is relied on by speakers in construing the wordstock of their languages for purposes of interpreting both new and old words, as well as for coining innovative terms. From this point of view, a lexically productive process is one which still applies in the usage current at a given point in the development of the language. Thus, use of vowel-change to create causative verbs (as in pairs like *rise-raise, lie-lay, fall-fell*) is nonproductive in English today, by contrast with the common innovative use of a morphological device in the form of the *hif'il* verb-pattern for this same purpose in current Hebrew (Berman & Sagi 1981, Bolozky & Saad 1983); and the Biblical pattern CaCiC (with a historically long initial vowel) is no longer productive for the class of agent-nouns in today's Hebrew, by contrast with earlier words such as *nagid* 'governor', *qacin* 'officer' (glossed as explained in n. 4).

By these standards, however, this same surface pattern functions as a "productive" process in Modern Hebrew, used for passive '-able' adjectives — as was noted by Haim Blanc several decades ago. Thus, the following are among the many such terms listed in a conventional dictionary (Even-Shoshan 1979) as having been introduced in modern times, which occur in actual usage: *shavir* 'break-able = fragile', *kari* 'read-able = legible', *kavis* 'wash-able', *shamish* 'useable = practical', *yasim* 'applicable', *amid* 'stand-able = conservable', *pagia* 'hurt-able = vulnerable', *daliq* 'burnable = flammable', *avir* 'passable = traversable', *qavil* 'acceptable'. Nonetheless, this very "productive" means for attaching a given form to a given meaning is not part of the grammar of Modern Hebrew, and it remains a lexical phenomenon, much like its '-able' counterpart in current English. Firstly, there are gaps in current usage, and not all transitive verbs in fact form the basis for deriving passive adjectives by this means — e.g. there is no word for 'approachable', 'disposable', or 'sendable' even though there are verbs from which such adjectives could in principle be formed — unlike the theoretical form *patir* 'solv-able' which would be homophonous with a word

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with an unrelated meaning, or *shaliax* 'send-able' which would fill a slot that has already been pre-empted by the agent noun meaning 'one that is sent, sendee = messenger'. Secondly, not all CaCiC adjectives in this pattern (such as, say, Mishnaic *zariz* 'nimble' *zahir* 'cautious' or Modern *samix* 'viscous, thick', *xadish* 'modern') — let alone all words with this form in the established lexicon — in fact have this meaning.

Other devices for word-formation which are characterizable as meeting the requirement of lexical productivity in contemporary Hebrew include those which our test revealed to be "preferred options" for coining new nouns in a number of different semantic classes (Section 3.1 above) and also the many stem-external affixes which we characterized as highly favored in current usage, often in distinct contrast to lexical norms at earlier stages of the language (Section 3.4 above).

Our findings thus provide clear evidence that "speakers' choices for innovations may shift over time" — as observed by Clark & Cohen (1984) for agent suffixes in English, French, and Polish. Moreover, such changes may be particularly marked in the case of Modern Hebrew, for sociohistorical reasons of the sort noted at the outset of this paper. We can illustrate this by reference to the two seemingly equally productive agent patterns in Hebrew: CaCaC and CaCCan. The former was used for agent nouns in Biblical Hebrew — e.g. *cayad* 'hunter', *dayag* 'fisherman', *tabax* 'cook', *malax* 'seaman'. By Mishnaic times, a period when the culture had many artizans, this had become a common device for referring to such *occupations* — e.g. *nagar* 'carpenter', *zagag* 'glazier' *ganan* 'gardener', *kacav* 'butcher'. The CaCCan pattern, on the other hand, was reserved in Mishnaic Hebrew almost entirely for denoting *attributes*, mostly ones with a negative import — e.g. *batlan* 'idler', *shakran* 'liar', *patpetan* 'chatterbox' *kamcan* 'miser'. Subsequently, however, some 10 of the 35 or so CaCCan nouns introduced into the Medieval Hebrew lexicon are clearly occupation terms — e.g. *talyan* 'hangman', *kavran* 'gravedigger', *xacran* 'yardman = janitor'. And in contemporary Hebrew, CaCCan forms are used in naming agent occupations almost as often as in naming attributes. Thus of the CaCCan listed in the Even-Shoshan (1979) dictionary as having been introduced in modern times, around the same number are names of attributes (e.g. *raxlan* 'gossip', *bazbezan* 'wastrel', *baxyan* 'crybaby') and of occupations (e.g. *raftan* 'dairyman', *rakdan*

'dancer', *canxan* 'paratrooper') — the ratio being of about 6 to 5 respectively. Moreover, in keeping with the increased reliance on stem-external affixation noted in Section 3.4 above, Modern Hebrew has also introduced several dozen agent terms formed out of nouns plus the *-an* suffix — used occasionally for attributes (e.g. *tokf-an* 'aggressor', *harpatk-an* 'adventurer', *tvust-an* 'defeatist', *mahepx-an* 'revolutionary'), but even more commonly to refer to occupations (e.g. *psantr-an* 'pianist', *xalil-an*, 'flutist', *yecu'-an* 'exporter', *kaduragl-an* 'football-er' and many others).

Thus, in contemporary usage, the CaCCan-pattern words and *-an* ending words in general have come to represent the most unmarked, least constrained means for naming agents — both occupational like English *farmer*, *sailor* and attributive like *liar*, *idler*. This specialized agentive functions of *-an* form words sets them apart from CaCaC words in current usage in a way that differs from earlier, more classical norms. Although the CaCaC pattern has yielded many new agent nouns — such as *tayas* 'pilot', *pasal* 'sculptor', *kanar* 'violinist', *katav* 'reporter' — these are confined to the occupation sense. And although speakers may often come up with such well-established items when asked to cite agent-nouns known to them (as was shown in the results on Part C, testing retrieval from the conventional vocabulary, Section 3.3 above), they will not themselves spontaneously coin new nouns in this form. One reason may be that this pattern violates the criterion of *distinctiveness* (Section 3.6 above) by crossing lexical-class boundaries, since CaCaC nouns are superficially homophonous with past-tense verbs (*ganav* = 'thief' and 'stole', *katav* = 'reporter' and 'wrote') and they include many non-agent nouns (e.g. *tavas* 'peacock' *panas* 'flashlight', *pagaz* 'mortar'). In much the same way, present-tense or participial *benoni* forms, while also widely used for naming agents in current as in classical Hebrew, are clearly not as semantically transparent or as specialized for the agentive meaning as are nouns ending in *-an*. Thus, just as historically the CaCiC pattern has shifted from classical agent functions to an adjectival '-able' sense, so CaCCan and other *-an* ending forms are used today for a wide range of agent meanings, both occupational and attributive, and they are gaining an increased role in naming instruments as well (Section 3.4 above). Hence, what constitutes a productive word-formation device in encoding form/meaning relations may differ considerably at different times in the history of a language.

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Against this background, we can further refine our characterization of lexical productivity by reference to the distinction we introduced elsewhere (Clark & Berman 1984) between three distinct though interrelated facets of the notion "productivity in the lexicon": formal or structural, normative or official, and colloquial or spontaneous. Thus, 1) Formal productivity refers to the structural devices and structure-dependent processes available in the grammar of a language (in this case, as word-formation options) and the formal constraints restricting the application of these options; 2) Normative productivity describes the structural options favored for official purposes, such as: new words approved by the Language Academy; terms coined in specific technical domains; the form-meaning groupings listed in schoolgrammars, in textbooks, and other pedagogic references; recommendations of usage manuals; and the devices which speakers self-consciously construe as "correct"; while 3) Colloquial productivity underlies the spontaneous coinages evinced by speakers when filling lexical gaps in the free flow of speech and the devices preferred by nonspecialist users of the language in more structured, experimental settings, such as the kind described for Hebrew in the present study as well as others (e.g. Bolozky 1978, Clark & Berman 1984, Ravid 1978).

With regard to structural productivity, we noted the following. Firstly, it is here that the grammar and the lexicon interact most critically in any language. Thus, for instance, noun compounding in Hebrew is formally restricted along the lines suggested in 3.5 above; the maCCeC pattern for instrument nouns is not freely extendable to quadriliteral roots — e.g. the verb *xashav* 'think' underlies the noun *maxshev* 'computer', but the related verb *xashben* 'calculate' (rendered quadriliteral by addition of the suffixal *-n* as a root consonant) is not the basis for an instrument noun like **maxsheven* to mean 'calculator', just as the derived root *t-r-g-l* as in *targel* 'to-exercise' does not yield **matregel* or the like to mean 'practicer, exercise-device'; CaCaC agent nouns are more constrained than the CaCCan pattern, since they are avoided with root-final *alef* or *ayin* low consonantals — so that *q-r-ʔ* 'read' yields *karyan* 'announcer', but not **kara* (a fact that is shown by the current gen-

eral reliance on the "incorrect" form *cabay* in place of normative *caba* from the root *c-b-'* for '[house]painter'); while stem plus *-an* forms are less restricted than the root-incorporated pattern CaCCan for denominal agent formation in the case of nouns with a more complex structure than CVCVC — thus *xaser* 'yard' yields *xacran* 'janitor', *réfet* 'dairy' yields *raftan* 'dairyman', but the full noun-stem is needed to derive nouns like *mizrax-an* 'orient-alist', *tavru'a-n* 'sanitation-ist'; and in structural terms of formal constraints, the CaCiC '-able' pattern is not readily available for roots ending in a glide — e.g. *axil* 'eat-able = edible' from the root *ʔ-k-l* 'eat', but not **shatiy* 'drink-able' from the root *sh-t-y*.

Surprisingly enough, considering the rich tradition of morphological research in Hebrew as in other Semitic languages, such issues still await detailed investigation for Modern Hebrew, of a kind well beyond the scope of the present study. One possible reason is that concern with new-word formation in the language to date has focused mainly on what we have termed "normative" productivity. Yet to the best of our knowledge, little information is available on the extent to which official recommendations for new-words have filtered down into general use, to become part of the general wordstock of Hebrew speakers. Exceptions are the studies of Alloni-Feinberg (1974) and Nir (1982) — both of which indicate that in fact only part of the vocabulary that is officially instituted by such a body as the Hebrew Language Academy is absorbed into general everyday usage.

In the present context we will note three phenomena in the lexicon of colloquial Hebrew which run counter to what is sanctioned by arbiters of "good" usage. Firstly, as observed in Section 3.5 above, speakers often prefer Noun plus Denominal Adjective combinations to the more classical construct-state forms of Head Noun plus Noun Adjunct. This is true not only in a wide variety of syntactically derived Noun-Adjective combinations, such as *memshala yisra'el-it* 'Israeli government' vs. the noun-noun counterpart *memshélet yisra'el* (see Attias 1981, Levi 1976), it is also manifested in the recent tendency to create fully lexicalized compounds from such strings — e.g. *gvina lvana* 'white cheese', *ta'asiya avirit* 'aeronautical industries', *rakévet taxtit* 'nether train = subway'.

A second departure from normative dictates, as noted in Section 3.2 above, is the consistent preference of speakers for the maCCeCa rather than miCCaCa pattern for Place nouns, across a wide range

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of different words. Thus, the following are all listed in Even-Shoshan's (1979) dictionary in the miCCaCa pattern, yet they are typically rendered as maCCeCa words in unselfconscious, everyday usage: *mirpa'a* 'clinic' from *r-p-ʔ* 'treat', *midraxa* 'sidewalk' from *d-r-k* 'tread', *mishtala* 'nursery' from *sh-t-l* 'plant', *mispara* 'barber-shop' from *s-p-r* 'cut (hair)', *mixbasa* 'laundry, washroom' from *k-b-s* 'launder', *mishxata* 'slaughterhouse' from *sh-h-t* 'slaughter', *mitpara* 'sewing-room' from *t-p-r* 'sew', *mispana* 'shipyard' from *s-p-n* 'seaman', *mizraka* 'fountain' from *z-r-q* 'throw', *midsha'a* 'lawns' from *déshe* 'grass' (and these represent only the commonest of some three-dozen such neologisms listed in this dictionary!). The question of why the normative form is resisted in such cases is not immediately obvious, particularly as this pattern would then be fully "transparent", as follows: It would be uniquely allocated to the class of place-nouns, and maCCeCa would serve primarily for instruments, say — as in older, Biblical *maxresha* 'plough', *mazmera* 'pruning-fork', Medieval *magrefa* 'rake', and also recent *mamtera* 'sprinkler' as well as (non-agricultural) implements like *mavxena* 'test-tube', *maclema* 'camera', *masrega* 'knitting-needle', and many others.

My analysis of the situation is as follows: Firstly, as we have argued above, speakers are quite tolerant of non-uniqueness in form-meaning relations of this type. Just as English *-er* (and, as we shall note below, Hebrew *meCaCeC*) serve for both agent and instrument nouns, so can both miCCaCa and maCCeCa serve for place nouns, even though the latter is also commonly used for instruments. The second point relates to a further kind of opacity. Speakers simply may not know *when* to use which form, and hence they overgeneralize to the less specialized, less restrictive maCCeCa. Thus, alongside of the words listed as miCCaCa but generally rendered as maCCeCa in ordinary speech — such as those noted above — there are several words which have become fossilized in the miCCaCa form, which speakers never change to maCCeCa (e.g. *mis'ada* 'restaurant' and perhaps by direct analogy *mizlala* 'glutton-ery', *minhara* 'tunnel', and also *mixlala* 'college', *midrasha* 'seminar'); and there are others which are rendered only by maCCeCa — e.g. *madgera* 'hatchery', *maxleva* (normative *maxlava*) 'dairy', *madrega* 'stairway'. Besides there are nonplace nouns in both forms — e.g. the collectives *mishtara* 'police', *makhela* 'choir'. And older words occur alongside of more recent coinages in all subgroups! This

suggests that there is no motivated, morpho-phonological or semantic basis for speakers to make a decision as to which form is "right" in the sense of best suited to their own norms of usage. Some words have become lexicalized one way, others another, on the basis of common usage rather than of normative dictates or structural constraints. Where no such fossilization has occurred, speakers will either opt for normative miCCaCa or they will extend the less specialized maCCeCa to place-names in accordance with their individual lexicon, as a function of their personal linguistic history and experience. Thus, it is precisely in such instances, where "colloquial" and "normative" productivity tend to conflict, that lexical divergence and variation can be expected.

The last set of instances we note here is of the masculine-noun pattern maCCeC. Since Mishnaic time, this has come to be more specialized for the instrument sense — as in *masrek* 'comb', *mashpex* 'funnel' — compared with Biblical words like *masger* 'metalworker', *mamzer* 'bastard', *malben* 'rectangle' (Gluska 1981). And today this pattern is typically specified as the form par excellence for naming instruments in Hebrew. Yet our studies indicate some resistance to this normative recommendation. Thus, this pattern was rarely used in subjects' production of innovative instrument nouns in the oral test (Clark & Berman 1984); it constituted only 21% of the answers in the comparable written test (Part A of the present study); and less than a third (32%) of the forms chosen as suited to instrument nouns (Part B) were in the maCCeC form. We suggest that the official requirement is successful in the case of words that can be defined as rote-learned or as unanalyzed at two extremes of the Hebrew wordstock: Ones which are common, everyday terms that form part of the basic vocabulary of young Hebrew learners, and so have become fossilized in this set form (as illustrated in (8-i) below) and those which are part of the highly specialized, selfconsciously innovated technical terminology of the language (as in 8-iii). Elsewhere, as in the examples in the middle column (8-ii) below, speakers quite typically use a present-tense *benoni* verb-form — most particularly where the base-verb is in the P3 *pi'el* pattern, rather than in one of the two other transitive patterns P1 *pa'al* and P5 *hif'il*.

(8) Instrument Nour

(i)

Rote-Learned, Fos

mazleg	< Pl	z
fork		d
mashpex	< P1	s
funnel		p
maftéax	< P1	p
key		c
masrek	< P3	m
comb		c
mavreg	< P5	m
screwdriver		s

cf. *bóreg* 'screw'

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(8) Instrument Nouns in the *maCCeC* Pattern:

(i) Rote-Learned, Fossilized			(ii) Innovative, Resisted		
mazleg fork	< P1	*zoleg* drips	*makrer* fridge	~ P3	*mekarer* cools
mashpex funnel	< P1	*shofex* pours	*maghec* iron	~ P3	*megahec* presses
maftéax key	< P1	*poteax* opens	*mafcéax* nutcracker	~ P3	*mefacéax* crack-
masrek comb	< P3	*mesarek* combs	*maxshev* computer	~ P3	*mexashev* calculate
mavreg screwdriver	< P5	*mavrig* screws	*maxded* sharpener	~ P3	*mexaded* sharpens

cf. *bóreg* 'screw'

(iii) Specialized, Frozen		
macber battery	< P1	*cover* cumulates
maklet receiver	< P1	*kolet* absorbs
mashder transmitter	< P3	*meshader* transmits
magber amplifier	< P5	*magbir* increases
macmed car-clutch	< P5	*macmid* links

The first set of words are among the high-frequency, well-established items known to be resistant to change or regularization in Hebrew as in other languages (Schwarzwald 1982); they are learnt as isolated items, without any analysis relating them to the base-verb. The last column consists of technical terms, typically used by people particularly familiar with the referents in question — and

they indeed represent the result of selfconscious, official, policy-making of the kind we have described as "normative productivity". The middle set is perhaps the most interesting — since the forms to the left are those officially recommended, either originally or to this day (the words for 'refrigerator' and '(pencil-)sharpener' have been standardized in the "deviant" form) and there are others which could be added to this list, e.g. *masnen* 'filter', commonly rendered as *mesanen-et* '(kitchen) sieve'. These words are instances where speakers have opted for the less transparent, non-unique device of conversion — retaining the present-tense participial verb-form which is very close in pronunciation to the maCCeC form, so that the same surface form is used both as a present-tense verb and as an instrument noun, as shown in (8-ii) above.

Thus, although the *ma-* prefix nouns are "taught" in school-grammars as the class of words for naming instruments, although a standard dictionary lists well over 100 such nouns as having entered the language recently, and although — as noted in Section 3.2 — speakers are selfconsciously aware that this is the "good" or "correct" way to derive instrument nouns, actual usage may run counter to these dictates. Even people who work with computers often name them by the present-tense plural form *mexashv-im* and not by "required" *maxshev-im*, just as people who work with cars are likely to call the radiator either by the loan-form *radiyator* or by the present-tense form *mecanen* 'chills/chiller' in preference to normative *macnen* (and see, further, Alloni-Feinberg [1974] for a sociolinguistic study of the gap between official nomenclature for car-parts and actual usage in different sectors of the population). In fact, if someone talks about *makrer* when referring to a refrigerator, say, in preference to colloquial present-tense *mekarer*, he or she is likely to be identified as a schoolteacher, a grammarian, or a foreigner. There is thus ample evidence that speakers are resisting the maCCeC form as "bookish", except in the more selfconsciously monitored contexts of technical expertise.

Where colloquial usage conflicts with normative dictates — as in use of maCCeCa for miCCaCa place-terms, and in use of meCaCeC for maCCeC instruments — two related trends emerge. There is a pattern of considerable variability across speakers and even within a single individual depending on the context of usage, whether formal, hence more selfconscious, or casual and hence less monitored. And language change can be predicted, as a given, non-normative

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set of forms becomes established in general usage, hence reflecting a new "standard" (Donag-Kinrot 1978).

The question remains as to why or how a given device or set of devices comes to be productive in the "colloquial" sense which concerns us here. One factor may be general favoring of certain *structural* options at a given phase in the development of a language — which is how we explained, for instance, the avoidance of compounding and the wide use of stem-external affixes noted earlier. Another structural factor may be the pull to *distinctiveness* — which we took to explain the current preference for *-an* ending words to name agent nouns. However, as we have pointed out, this will never find expression in anything like a total form-meaning correspondence, even in a language which affords the varied options available in Hebrew. A further factor is that of *frequency*, since it is reasonable that speakers will make broadest use of those forms which are most common in their language. However, the notion of "frequency" itself requires clarification. If it refers to the established wordstock listed in a conventional dictionary, and covering all periods of the language as well as all levels of usage, then our findings for the classes of Agent, Instrument, Place, Collective, and Abstract nouns have shown this to be incompatible with the choices made by speakers themselves. There may be dozens or hundreds of words in a certain form many of which are not known, or not used at all, by speakers at a particular point in the development of the language. In that case, the devices which they embody cannot be considered as a basis for productivity in new-word formation of the kind at issue here.

We conclude that in characterizing the relative productivity of word-formation devices, account needs to be taken of the currently relevant devices favored by members of a given speech community. These will depend on a complex interaction of factors, including: (i) Underlying structural wellformedness and the formal options available to speakers — e.g. vowel alternation and root plus affixal pattern incorporation in Hebrew; conversion and prefixing as well as suffixing in English; (ii) typological predispositions — e.g. for affixation in Semitic languages, for compounding in Germanic; (iii) distribution of these devices in the conventional, well-established lexicon, with the vocabulary items employed by speakers in their everyday discourse often differing quite considerably from frequencies established for written texts; (iv) psycholinguistic fac-

tors favoring distinctiveness and semantic as well as morphological transparency; (v) speaker expectations deriving from the individual's experience, level of literacy, background in formal language study, and personal norms of usage; and (vi) patterns of change, of regularization, and extension of various devices at a given point in the historical development of a language. From these several points of view, Modern Hebrew seems to afford a particularly interesting case for investigation. It offers a rich array of affixal word-formation devices ranging from the highly synthetic to agglutinating type; owing to its having been so recently, and quite uniquely, revived as a spoken vernacular and the official language of a particular geo-political entity, words are constantly being innovated to name entities unfamiliar from prior stages of the language; and there is a peculiar tension in the society between the structurally motivated pull to regularization of form/meaning correspondences and the conservative reliance on earlier, written sources on the part of official innovators and normative grammarians, on the one hand, and the rather different motivations and sources of hypothesis construction relied upon by speakers both when acquiring and when using the language as an everyday means of expression.

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NOTES

[1] The study reported on here forms part of a broader project in the general domain of word-formation, including crosslinguistic research into children's development of word-formation devices. I am indebted to Professor Eve V. Clark of Stanford University and to Dorit Ravid of Tel-Aviv University for their assistance, and for providing invaluable insights on all phases of this work.

[2] In representing Hebrew forms, both current and classical, a broad phonetic transcription is adopted, as a rough rendering of how such items are pronounced in what Blanc (1954) termed "General Israeli Hebrew". Thus, we do not replicate the historical (or orthographic) consonantal root elements, unless these are relevant to a particular line of argument. Words have final stress, unless marked by an accent aigu as having penultimate word-stress. In representing the morphological affixation patterns termed *mishkal* 'weight' for nouns and adjectives, *binyan* 'construction, conjugation' for

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University master'
Avinery, Yitzchak. 19
Izra'el Publishing.
Balgur, Raphael & Me
Tel-Aviv: Sifriyat
Barkali, Shaul. 1964.
Berman, Ruth. 197
Publishing Project
Berman, Ruth. 1982.
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verbs, we adopt the convention of indicating radical elements by C for consonant, other elements by phonetic segments, e.g. CaCaC stands for *sarak* 'combed', *saman* 'marker', and *katav* 'wrote', 'reporter'; tiCCóCet stands for *tisróket* 'hairdo', *tismónet* 'symptom', and *tiztóvet* 'correspondence' while maCCeC stands for *masrek* 'comb', meCuCaC for *mesuman* 'marked', and miCCaC for *mixtav* 'letter'.

[3] The study was conducted as part of a class project in the linguistics department at Tel-Aviv University during the 1982/83 school year. I am indebted to Miriam Saar for help at all phases of the study, and to Anat Mendelewitch and Sonia Raff for providing part of the data.

[4] Words are glossed according to their most accepted sense in current usage, even though in many cases they had a rather different meaning at earlier stages of the language, whether in classical Biblical Hebrew or later Mishnaic, rabbinical Hebrew and Medieval writings.

[5] Hebrew compounds take the form of Head Noun + Adjunct Noun in that order, with the initial, head noun often in a morphologically bound ("construct-state") form, distinct from its free, nongenitive form. The constituents in Noun + Adjective phrases occur in the same order, head followed by modifier, but then the adjective agress with the head noun in number and gender — as in the examples of (4) of the text. For ease of exposition, we translate both noun-noun and noun-adjectives combinations directly into English.

[6] This is manifested for instance in the colloquial tendency to use the same CaCCan-pattern word *shadxan* from the verb meaning 'connect, tie together' for both the older, well-established, Agent noun 'matchmaker' and the recent Instrument term 'stapler'. On a daily radio program dedicated to improving Hebrew usage (*réga shel ivrit* '[A] Moment of Hebrew', May 19, 1982), listeners were instructed to use a distinct term for the instrument, in the maCCeC pattern, thus: *maxlev* from the noun *kliv*, the pin used in stapling. Yet when I asked speakers how they would interpret this word, their response was very often to associate it with the word *xalav* 'milk' — with an initial historical pharyngeal "chet" — so that they interpreted the word as meaning something akin to 'milker', 'milk-machine'. This clearly shows that normative dictates are not always consistent with formal transparency — for although the two sequences of *x-l-v* are distinct in the Hebrew orthography to this day, in most current pronunciation they sound identical.

REFERENCES

Alloni-Feinberg, Yafa. 1974. "Official Hebrew terms for parts of the car: A study of knowledge, usage, and attitudes." In: Joshua A. Fishman, ed. *Advances in Language Planning*. The Hague: Mouton, 493—517.

Aronoff, Mark. 1976. *Word Formation in Generative Grammar*. Cambridge: M. I. T. Press.

Attias, Talia. 1980. The formation of diminutives in contemporary Hebrew. Tel-Aviv University ms.

Attias, Talia. 1981. Ordering of Adjectives in Modern Hebrew. Tel-Aviv University master's thesis.

Avinery, Yitzchak. 1976. *A Thesaurus of the Hebrew Radical Nouns*. Tel-Aviv: Izra'el Publishing.

Balgur, Raphael & Menachem Dagut. 1975. *Basic Hebrew-English Dictionary*. Tel-Aviv: Sifriyat Maariv. [Hebrew].

Barkali, Shaul. 1964. *Complete Noun Table*. Jerusalem: Rubin Mass [Hebrew].

Berman, Ruth. 1978. *Modern Hebrew Structure*. Tel-Aviv: University Publishing Projects.

Berman, Ruth. 1982. New-word formation in English and Hebrew: The issue of productivity. Paper presented at Conference of University Teachers of English, Bar-Ilan University, Ramat-Gan, June 1982.

Berman, Ruth in press. "The role of blends in Hebrew word-formation". *Mediterranean Language Review.*
Berman, Ruth. Forthcoming. *A developmental route: Learning the form and function of complex nominals in Hebrew.*
Berman, Ruth, Barbara F. Hecht & Eve V. Clark. 1982. "The acquisition of agent and instrument nouns in Hebrew." *Papers and Reports on Child Language Development* 21, 16—24.
Berman, Ruth & Dorit Ravid. 1986. "Degrees of lexicalization in Hebrew compounding." *Hebrew Computational Linguistics Bulletin* 24,5—22 [Hebrew].
Berman, Ruth & Yisrael Sagi. 1981. "Word-formation processes and lexical innovations of young children." *Hebrew Computational Linguistics Bulletin* 18, 36—62. [Hebrew].
Bilev, Roni, 1985. The development and use of noun Compounds by Hebrew-speaking children. Tel-Aviv University School of Communications Disorders M. A. thesis. [Hebrew].
Blanc, Haim. 1954. "The growth of Israeli Hebrew." *Middle Eastern Affairs* 5, 385—392.
Bolozky, Shmuel. 1978. "Word-formation strategies in the Hebrew verb system." *Afro-Asiatic Linguistics* 5, 1—26.
Bolozky, Shmuel & George Saad. 1983. "On active and non-active causativizable verb in Arabic and Hebrew". *Journal of Arabic Linguistics* 10, 71—80.
Clark, Eve V. & Ruth A. Berman. 1984. "Structure and use in the acquisition of word formation." *Language* 60, 542—590.
Clark, Eve V. and Ruth A. Berman. In press. "Types of linguistic knowledge: Interpreting and producing compound nouns." *Journal of Child Language.*
Clark, Eve V. & Herbert H. Clark. 1979. "When nouns surface as verbs." *Language* 55, 767—811.
Clark, Eve V. & Sophia R. Cohen. 1984. "Productivity and memory for newly-formed words". *Journal of Child Language* 11, 611—626.
Clark, Eve V. & Barbara F. Hecht. 1982. "Learning to coin agent and instrument nouns". *Cognition* 12, 1—24.
Donag-Kinrot, Rina. 1978. The Language of Students in Israeli Schools: Language Usage, Standard, and Norm in the Language of Native-Born Israeli Students. Jerusalem: Hebrew University doctoral dissertation [Hebrew].
Downing, Pamela. 1977. "On the creation and use of English compound nouns." *Language* 53, 810—842.
Dressler, Wolfgang U. 1981. "On word formation in Natural Morphology." *Wiener Linguistische Gazette* 26, 3—13 (= *PICL* 13, 1983, 172—182).
Du Nour, Miriam. 1979. "Form and meaning in nouns and adjectives ending in *-an, -ani.*" In: Rabin and Fischler, eds, 37—41. [Hebrew].
Even-Shoshan, Avrahain. 1979. *The Concentrated Hebrew Dictionary.* Jerusalem: Kiryat Sepher. [Hebrew].
Gluska, Yitzchak. 1981. "Nouns of the *maqtel* pattern in Biblical and Mishnaic Hebrew." *Leshonenu* 45, 3/4, 280—298. [Hebrew].
Kutscher, Eduard Yechezkel. 1982. *A History of the Hebrew Language*, ed. by Raphael Kutscher. Jerusalem: Magnes Press; Leiden: Brill.
Levi, Judith N. 1976. "A semantic analysis of Hebrew compound nominals." In: P. Cole, ed. *Studies in Modern Hebrew Syntax and Semantics.* Amsterdam: North-Holland, 9—65.
Meys, W. J. 1975. *Compound Adjectives in English and the Ideal Speaker/Listener.* Amsterdam: North-Holland
Mithun, Marianne. 1984. "The evolution of noun incorporation." *Language* 60, 847—894.
Nahir, Moshe. 1978. "Normativism and educated speech in Modern Hebrew." *International Journal of the Sociology of Language* 18, 49—67.
Nir, Raphael. 1980. "The semantic structure of nominal compounds in Modern Hebrew." *Bulletin of the School of Oriental & African Studies* 43, 185—196.

Nir, Raphael. 1982. "]
Academy of the He
Bulletin 19, 20—33.
Ornan, Uzzi, 1979. "O
Hebrew verb." In I
Rabin, Chaim. 1984. "
R. Cooper, ed. *Soc*
edition of: *Internati*
Rabin, Chaim & Ben-Zi
Studies in Hebrew a
Teaching of Hebrew
Rabinowitz, Solomon.
ed. Daniel Persky.
Ravid, Dorit. 1978. Wo
Adjectives. Tel-Aviv
Ravid, Dorit. In pre
A Study of Morphol
versity doctoral dis
Roeper, Thomas & M
compounds." *Lingu*
Sadan, Dov. 1976. "
Ben-Zion Fishler &
Jerusalem: Council
Schwarzwald, Ora R.
Gan: Bar-Ilan Univ
Schwarzwald, Ora. 19
BeChinuch 35, 163
Sivan, Reuben. 1980
Rubinstein.
Smith, Kari. 1982. Th
Norwegian. Tel-Avi
Werner, Fritz. 1982. "
16, 263—295.
Werner, Fritz. 1983. I
Harrassowitz.

Nir, Raphael. 1982. "Linguistic transparency of neologisms coined by the Academy of the Hebrew Language." *Hebrew Computational Linguistics Bulletin* 19, 20—33. [Hebrew].
Ornan, Uzzi, 1979. "Once more: The meanings of the conjugations of the Hebrew verb." In Rabin & Fischler, eds, 11—19. [Hebrew].
Rabin, Chaim. 1984. "The sociology of normativism in Israeli Hebrew." In: R. Cooper, ed. *Sociolinguistic Perspectives on Israeli Hebrew* (Special edition of: *International Journal of the Sociology of Language*).
Rabin, Chaim & Ben-Zion Fischler. (eds) 1979. *Shlomo Kodesh Jubilee Volume: Studies in Hebrew and the Teaching of Hebrew*. Jerusalem: Council on the Teaching of Hebrew. [Hebrew].
Rabinowitz, Solomon. 1947. *Sefer Hamiskalim: Studies in Hebrew Philology*, ed. Daniel Persky. New York: Shulsinger. [Hebrew].
Ravid, Dorit. 1978. Word-Formation Processes in Modern Hebrew Nouns and Adjectives. Tel-Aviv University master's thesis.
Ravid, Dorit. In preparation. Transient Phenomena in Child Language: A Study of Morphological Usage in Different Age-Groups. Tel-Aviv University doctoral dissertation.
Roeper, Thomas & M. Siegel. 1978. "A lexical transformation for verbal compounds." *Linguistic Inquiry* 9, 199—260.
Sadan, Dov. 1976. "On ellipsis: Construct-state nouns in isolation." In: Ben-Zion Fishler & Raphael Nir, eds. *Chaim Rabin Jubilee Volume*. Jerusalem: Council on the Teaching of Hebrew. [Hebrew].
Schwarzwald, Ora R. 1981. *Grammar and Reality in the Hebrew Verb*. Ramat-Gan: Bar-Ilan University. [Hebrew].
Schwarzwald, Ora. 1982. "Frequency and regularity in language." *Iyyunim BeChinuch* 35, 163—174. [Hebrew].
Sivan, Reuben. 1980. *The Revival of the Hebrew Language*. Jerusalem: Rubinstein.
Smith, Kari. 1982. The use of compound adjectives in Hebrew, English, and Norwegian. Tel-Aviv University ms.
Werner, Fritz. 1982. "Wortbildungstypen im Hebräischen". *Folia Linguistica* 16, 263—295.
Werner, Fritz. 1983. *Die Wortbildung der hebräischen Adjektive*. Wiesbaden: Harrassowitz.