# The Typology of Nonintegrated Words in Hebrew*

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*Many Hebrew words are unique depending on their foreign etymology as well as on social and psychological variables like substandard registers, children's game words, and emotional words; they form special word classes in the lexicon. The most common ways for word formation in Modern Hebrew morphology are root and pattern, stem and affix, and two stem combinations. Their inflectional paradigms are very predictable. Other derivational ways – acronym and blends – are rarer and display irregular patterns. In this paper, I postulate nine linguistic features to distinguish between the various Hebrew words, and establish the different layers of the Hebrew lexicon. The findings lead to the discussion concerning the structure of the lexicon and the status of nonintegrated words in Hebrew.*

**Keywords**: *Hebrew, typology, non-integrated words*

## 1. Introduction

### 1.1 *Word classification*

Like any other language, the lexicon of Modern Hebrew (MH) is composed of several sources, based on different criteria: etymology – Semitic versus non-Semitic; origin – native Hebrew words versus borrowed words; chronology – archaic versus modern borrowed words. Words like *yad* 'hand', *roš* 'head', and *bayit* 'house' are original Hebrew words of Semitic origin; words like *séfer* 'book' (of Akkadian origin), *ganáz* 'stored' (of Persian origin), and *sfog* 'sponge' (of Greek origin) are considered Hebrew because they were adopted morphophonemically in ancient classical Hebrew and are not felt as foreign anymore (cf. *mélex* 'king', *ganáv* 'stole', *cxok* 'laughter'). Words like *kategór* 'prosecutor', *'ictadyón* 'stadium' (of Greek origin), and *'axašdarpán* 'satrap' (of Persian origin), which also occur in the ancient classical sources, are not perceived as Hebrew because they did not adapt to the Hebrew system. Words like *méter* 'meter', *švic* '(slang) bragging', and *balét* 'ballet' look like ordinary Hebrew words (cf. *mélex* 'king', *štil* 'seedling', and *šaxén* 'neighbor'), nevertheless, they are considered borrowed for morphophonemic reasons.

To these historical-etymological criteria, one can add sociological and psychological criteria, which distinguish the way speakers perceive words: stylistic – high (formal) versus neutral or colloquial register (including slang); social – standard-educated versus substandard; professional – general or occupational; territorial – dialectal versus generally accepted standard; emotional – neutral versus affectionate (including diminutives, euphemisms, etc.); related to age – young versus adult or old.

These criteria are not mutually exclusive. A word can be a colloquial Semitic word with an affectionate meaning, while another can be borrowed and used in a high register only by elderly or learned people. For instance, *'adraba* 'as a matter of fact, on the contrary' is a borrowed Aramaic word used only in high register (pronounced formally *'adrabá* and informally *'ádraba*), whereas *lema'asé* is its neutral native Hebrew counterpart. *Télefon* is a

* This is an expanded version of my paper presented at the conference on Universals and Typology in Word Formation II, held in Košice, Slovakia, 26-28 August 2012. I am grateful to Ruth Berman, Rivka Bliboim, Keren Dubnov, Itamar Kastner, and Dorit Ravid for their help.

loan of standard neutral use while Hebrew (Semitic) *xamór* 'donkey' is commonly used in neutral register on the one hand, but has a derogatory meaning in low register on the other.
Loan words that fill a lexical gap in the language are absorbed in the general lexicon of Hebrew, e.g. *rádyo* 'radio', *né'on* 'neon', *bámya* 'okra'. However, loan words from the Indo-European inventory, in general of Latin-Greek origin, belong to the standard unmarked lexicon, as well as to the professional. Most of the Indo-European lexicon entered MH through the Slavic channel until the 1970s, e.g. *'álgebra* 'algebra', *psixológya* 'psychology', *polítika* 'politics', *protékcya* 'favoritism'. From the 1970s many American English words were absorbed, e.g. *protékš(e)n* '(mafia) protection', *áwtput* 'output', *fídbek* 'feedback' (MH *mašov*). Loan words from languages of low esteem among speakers, like Yiddish, Arabic, Judeo-Spanish, belong to the colloquial (and slang) lexicon, many times with emotional (humorous and derogatory) connotations, e.g. *vílde xáye* 'wild animal; rough person' (from Yiddish), *baláta* 'tile; stupid' (from Arabic), *roš kalavása* 'pumpkin head; stupid; baldheaded' (from Judeo-Spanish). Nevertheless, whatever the source of borrowing, there are no morphophonemic differences between these loan words, as I will demonstrate below.
In this paper, I postulate linguistic features to distinguish between the various words based on the criteria listed above, and establish the different layers of the Hebrew lexicon.

1.2 *Hebrew Word-formation*

Hebrew words are formed in the following ways (and I ignore semantic shifts and loan translations as means of lexical expansion):

a. Combination of a consonantal root with vocalic pattern, sometimes with additional consonants, e.g. *lamad* 'studied' (<l-m-d + CaCaC pattern), *talmíd* 'student' (<l-m-d+taCCiC), *limud* 'study' (l-m-d+CiCuC)
b. Stem with affixes, e.g. *limudí* 'educational' (<*limud* 'study' + *-i* 'adjectival suffix'), *laróv* 'usually' (<*la* 'to' + *rov* 'most, majority')
c. Compounding, e.g. *bet séfer* 'school' (<*báyit* [cnst. *bet*] 'house' + *séfer* 'book'), *'av tipús* 'prototype' (<*'av* 'father' + *tipús* 'type)
d. Blends, e.g. *'arpíax* ''smog' (<*'arafél* 'fog' + *píax* 'soot'), *midrexov* 'pedestrian mall' (<*midraxa* 'sidewalk' + *rexov* 'street')
e. acronyms, e.g. *yor* 'chairperson' (<***yo****šév* 'sits' + ***r****oš* 'head'), *pazám* 'minimum time' (<***p****érek* ***z****man* 'time unit' [<*pérek* 'chapter, unit' + *zman* 'time'] + ***m****inimáli* 'minimal').[1]

There are also base, inherited words like *yom* 'day', *ben* 'son' (and see *yad*, *roš*, *bayit* mentioned abovein 1.1), and many loan words. As mentioned above, some of these words adjusted to the Hebrew phonological system, mostly from ancient times, while others are absorbed as-is, thus belonging to the base formed words, e.g. *maxóz* 'district' (from Akkadian; cf. *makóm* 'place'), versus *fízika* 'physics' (from Slavic origin), *ğins* 'jeans'.
The first three ways of forming Hebrew words are the most productive ones; the stem fusion and acronym word formations which are diachronically late developments in the history of the Hebrew language, are relatively rare in the language. Loan words are absorbed in masses today, especially from English. Words that were borrowed up until the 19th century which

[1] I exclude from the discussion written abbreviations which are not pronounced as a single word, e.g. <*bsh"k*> = ***be****sáx* ***ha****kól* 'total', <*mm"r*> = ***m****éter* ***me****rubá* 'square meter'.

adjusted to Hebrew morphophonemics are not considered generally as loan words. In addition, these words are not marked as such in Modern Hebrew dictionaries. Only words that were borrowed beginning from the 20th century are considered authentic loan words. Phonological and morphological comparisons will be made below between standard general Hebrew (SH), and other words in order to typify their unique features. The descriptions relate to single words, excluding compounds.

## 2. Linguistic differences between words

### 2.1 *Consonants*

Loan words, loan proper names, and substandard words include the consonants *č* (*=tš*), *ž*, *w*, *ğ* (*=dž*), which do not exist in SH, e.g. *ğorğ* 'George', *davidóvič* 'Davidovich', *čips* 'French fries', *žakét* 'jacket' (SH *miktóren*), *ğuk* '(colloquial) cockroach' (SH *tikan*), *wíski~víski* 'wisky', *čúpčik* '(colloquial) sharp tip (of some object)', *čupár* '(slang) bonus, fringe benefit' (Weiman 1950, Rosén 1977:59-62, Schwarzwald 2002 §7.4).

### 2.2 *Consonant distribution*

2.2.1**.** The consonant *f* occurs at the beginning of a word and *b* and *p* occur at the end of the word in loan words, in proper names, in acronyms, and in colloquial substandard words. e.g. *faláx* 'farmer (derogatory)' (SH *'ikar*, *xaklay*), *klab* 'club' (SH *mo'adón*), *fišer* 'Fisher', *mikroskóp* 'microscope', *šaráp* 'private medical service' (acronym of ***š****erút* 'service' + ***r****efu'í* 'medical' + ***p****ratí* 'private'), *ftax* '(substandard) open!' (SH *ptax*), *maš'áb* 'resource' (SH *maš'áv*), *princíp* 'principle' (SH *'ikaron*). In SH only *p* occurs at the beginning of a word and *v* and *f* at the end of a word, e.g. *patáx* 'opened; vowel name', *kluv* 'cage', *sof* 'end', *ya'akóv~yákov* 'Jacob'.

2.2.2. In these groups of words, *b* and *p* may occur as second elements in initial consonant clusters, while in SH only *v* and *f* occur in this position, e.g. *spónğa* '(colloquial) mopping the floor' (SH *štifá* 'washing'), *špinóza* 'Spinoza', *zbeng* '(slang) sharp blow' (SH *maká*, *xavatá*), *šbor* '(substandard) break!' (SH *švor*). Compare SH *sfiná* 'boat', *zvuv* 'fly', *cfanyá* 'Zephaniah' (Weiman 1950, Rosén 1977:59-62, Schwarzwald 2002 §7.4).

### 2.3 *Number of syllables*

Uninflected original Hebrew words mostly contain up to three syllables; four syllabic words are extremely rare (Cohen-Gross 1997), whereas loan words and substandard words may contain more than three syllables in their base singular forms, e.g. *'obyektívi* 'objective', *kukuríku* 'a sound produced by a chicken; (slang) crazy' (SH *mešugá*, *metoráf*), *ximoterápya* 'chemotherapy', *sterilizácya* 'sterilization'. Compare SH *hizdamnút* 'chance, opportunity', *hizdamnutí* 'occasional', *safsál* 'bench', *'erkiyút* 'moral standard' (Schwarzwald 2002 §7.3; see 2.5 below).

2.4 *Consonant clusters*

In SH, only two-consonant clusters may occur, e.g. *slixá* ‘forgiveness’, *migdál* ‘tower’, *sifrá* ‘digit’, *hitgabšút* ‘consolidation’, *šim’óni* ‘Shimoni’, *katav+t > katávt* ‘you (f.sg) wrote’. Three- and four-consonant clusters occur only in loan words, slang words, and proper names. Most of these clusters include the nasal and sonorants *l*, *r*, *n*, or *y* as one of the components. For instance, *šprits* ‘(colloquial) splash’ (SH *hatazá*, *nétez*, *zérem*), *sprayt* ‘Sprite’, *struktúra* ‘structure’ (SH *mivné*), *štrúdel* ‘Strudel; computer @ sign’ (SH *kruxít*), *xtyar* (*~xatyár*) ‘(slang, derogatory) old man’ (SH *zakén*, *yašíš*, *kašíš*), *xnyok* ‘(slang) despised, religious extremist’ (SH *xaredí*, *datí-kiconí*), *biskvít* ‘biscuit, cookie’, *sandlár* ‘shoemaker’, *ʻictrubál* ‘pine cone’, *psantrán* ‘pianist’, *províncya* ‘province, farm country’, *zángvil* ‘ginger’, *pártner* ‘partner’, *geocéntri* ‘geocentric’, *ma’éstro* ‘maestro’, *marksísti* ‘Marxist’, *šméndrik* ‘(slang) small good-for-nothing’, *ʻépštayn* ‘Epstein’, *kórnhawzer* ‘Cornhouser’, *tekst* ‘text’ (Rosén 1977:62, Schwarzwald 2002 §7.4, 2004).

2.5 *Syllabic structure*

The inner syllabic structure of loan words and of some proper names deviates from SH, e.g. *ʾotonómya* ‘autonomy’, *ʾimprovizácya* ‘improvisation’ (and see more examples above). The syllabic structures of SH words are as follows (Schwarzwald 2002 §7.3):

Ultimately stressed words:

**$C_1^2V(C)$**, e.g. *šen* ‘tooth’, *kfar* ‘village’, *pe* ‘mouth’, *dli* ‘bucket’

**$C_1^2VC_1^2V(C)$,** e.g**.** *davár* ‘thing’, *maxšév* ‘computer’, *šmanmán* ‘chubby, fattish’, *maká* ‘plague, blow’, *šmamá* ‘desert’, *simlá* ‘dress’

**$C_1^2VC_1^2VC_1^2V(C)$**, e.g. *mexubád* ‘respectable’, *zikarón* ‘memory’, *tixtovót* ‘correspondences’, *pe’altán* ‘active’, *harpatkán* ‘adventurer’, *bakará* ‘control’, *hadpasá* ‘printing’

**$C_1^2VC_1^2VC_1^2VC_1^2V(C)$** (extremely rare), e.g. *naxli’eli* ‘wagtail bird’, *meturgeman* ‘translator’

Penultimately stressed words:

**$C_1^2\breve{V}CV(C)$ (**mostly masculine words), e.g. *šéleg* ‘snow’, *náxal* ‘river’, *récax* ‘murder’, *bóhen* ‘toe (f)’, *róxav* ‘width’, *léxi* ‘cheek’, ‘*ófi* ‘character’, *déše* ‘grass’, *šáyit* ‘cruise’

**XéCet**[2] (f), e.g. *délet* ‘door’, *mivréšet* ‘brush’, ‘*igéret* ‘letter’, *šaršéret* ‘chain’, *kot**e**ret* ‘title’

**XáGat** (f), e.g. *migbá’at* ‘hat’, *kadáxat* ‘fever, malaria’, *mefakáxat* ‘superviser (f)’, *dlá’at* ‘pumpkin’

**XóCet** (f), e.g. *xaróšet* ‘industry’, *tizmóret* ‘orchestra’, *któvet* ‘address’, *tarnególet* ‘chicken’

**XéCeC** (rare), e.g. *pilégeš* ‘concubine, mistress’, *rakével* ‘cable-railway’

**CáveC** (very rare), e.g. *távex* ‘centre’, *mávet* ‘death’

**Xáyim** (only with dual-plural ending), e.g. – *moznáyim* ‘scale’, *misparáyim* ‘scissors’, *ʻofanáyim* ‘bicycle’

**$C_1^2VC_1^2\breve{V}CVC$**, e.g. *cahévet* ‘jaundice’, *mikláxat* ‘shower’, *pkidónet* ‘junio-level clerk (f)’, *miktóren* ‘jacket’

[2] X stands for any CVC sequence; G stands for a guttural, i.e. historical *ʼ*, *h* and *ḥ*, pronounced in MH as *ʼ*, *h* or *Ø*, and *x* respectively.

In the penultimately stressed groups, no SH ends in a vowel, except for the first category ($C_1{}^2\breve{V}CV(C)$).

2.6 *Derivational stress*

SH words are either ultimately or penultimately stressed, as the above syllabic structures showed. Loan words, substandard words, and proper names may be pre- or pre-prepenultimately stressed (although some of them may be ultimately or penultimately stressed as shown above), e.g. *šókolad* 'chocolate', *télefon* 'telephone', *'ótobus* 'bus', '*álgebra* 'algebra', *matemátika* 'mathematics', *bákala* 'codfish', *pómpernikel* 'pumpernickel', *móskovitš* 'Moscovich', *píta* 'pita bread', *patént*.

Stress clearly distinguishes SH words from proper names and from game or emotional words as in the following minimal pairs, e.g. *šošaná* 'rose' – *šošána* 'Shoshana', *yafá* 'pretty' – *yáfa* 'Yafa', *simxá* 'joy' – *símxa* 'Simcha', *rexovot* 'streets' – *rexóvot* 'Rechovot (name of a city)', *rišón* 'first' – *ríšon* 'Rishon (LeTsion) (name of a city)', *bubá* 'doll, mannequin' – *búba* '(childish) dolly; emotional reference to woman, sometimes derogatory', *klafím* 'cards' – *kláfim* 'children's game cards', *nasix* 'prince' – *násix* '(in children's use) prince in card game'.

Stress also distinguishes connective function words in formal and informal registers: ultimate stress occurs in formal register, while penultimate stress is used in informal speech, e.g. *'agáv – 'ágav* 'by the way', *davká – dávla* 'specifically', *'efó – 'éfo* 'where', *šenít – šénit* 'secondly' (Rosén 1977:76-81; Schwarzwald 1990; cf. Superanskaya 1968).

2.7 *Stress in inflection*

In SH words, the stress shifts to the plural *+im* and *+ot* suffixes and to the feminine suffix *+it*, e.g. *gal+im > galím* 'waves', *'óhel+im > 'ohalím* 'tents', *sus+im > susím* 'horses', *maxbéret+ot > maxbarót* 'notebooks', *kitá+ot > kitót* 'classrooms', *nadván+it > nadvanít* 'philanthropist (f)'.

Loan words, acronyms, and substandard words keep the stress on the stem, sometimes switching it towards the end of the word, but never to the suffix, e.g. *bank+im > bánkim* 'banks', *koléga*+ot > *kolégot* 'colleagues', *télefon*+im > *telefónim* 'telephones', *xak+im > xákim* 'parliament members' (*xak* acronym of ***x****avér* 'member' + ***k****néset* 'parliament'), *xak+it > xákit* (f), *xákit+ot > xákiyot* (f.pl), *témbel+im > témbelim* 'sillies', *témbel+it > témbelit* 'stupid (f)', *témbelit+ot > témbeliyot* (f.pl), *šókolad-šokoládim* 'chocolates (m)' (Rosén 1977:70-81; Meir 2006; Schwarzwald 1991a, 1998).

The inflection of proper names is rare, but it occurs sometimes when they are nominalized as in the following sentences:

(1) *n-isá* *l-a-šim'óni-m*
we will-drive to-the-Shimoni-s
'We'll drive to the Shimoni family'

*ha-'ádler-im bá'-u*
the-Adler-s came-3pl
'The Adlers came'

2.8 *Inflectional regularization*

2.8.1. In SH, the plural suffixes *+im* and *+ot* may be added to either masculine or feminine stems, though *+im* is preferably added to masculine nouns and *+ot* to feminine ones, e.g. *gir-girím* 'chalk-s (m)', *kir-kirót* 'wall-s (m)', *šitá-šitót* 'system-s (f)', *šitá-šitím* 'acacia-s (f)'. The suffix *+áyim* is relatively restricted, but can be added to SH words, e.g. *yom-yomáyim-yamím* 'day-two days-days', *daka-dakatáyim-dakót* 'minute-two minutes-minutes' (Schwarzwald 1991a, 1996, 1998).

Loan words, substandard words, and acronyms take only *+im* suffix for masculine and *+ot* suffix for feminine or for words ending in *-a* in the singular, but the suffix *+áyim* is never added to them, e.g. *tank-tánkim* 'tank-s (m)', *koléga-kolégot* 'colleague-s (m or f)', *mak-mákim* '(military) squad commander-s (m)' (acronym of *mefakéd* 'commander' + *kitá* 'class, squad'), *mákiyot* (pl.f), *šlóxim-šlóxiyot* '(slang) sloppy persons (m-f)'.

2.8.2. SH feminine suffixes are *+á*, *+t*, *+et*/*+at*, and *+ít*, depending on various morphological and semantic criteria, e.g. *sus-susá* 'horse-mare', *recini-recinít* 'serious (m-f), *'ivér-'ivéret* 'blind (m-f)', *keréax-keráxat* 'baldheaded (m-f)', *kamcán-kamcanít* 'miser' (Schwarzwald 1982, 1991b). However, loan and substandard words as well as acronyms take only the suffix *+it*, e.g. *studént-studéntit* 'student (m-f), *'instelátor-'instelátorit* 'plumber (m-f) (and see more examples in 2.7 above.).

2.9 *Stress of some derivational suffixes*

The stress of the adjectival suffix *+i*, and the abstract derivative *+iyut* also distinguish between SH words and loan, substandard and acronym words. In SH words, the stress shifts to the suffixes, e.g. SH *malxút-malxutí-malxutiyút* 'kingdom-royal-royality', *ciyón-ciyoní-ciyoniyút* 'Zion-Zionist-Zionism', *rišón-rišoní-rišoniyút* 'first-initial-precedence', *šlilá-šlilí* 'negation-negative'. Contrarily, in loan words and acronyms the stress stays on the stem, e.g. *seks-séksi-séksiyut* 'sex-sexy-sex appeal', *dapár-dapári-dapáriyut* '(slang) stupid-stupid like-stupidity' (in military terms, *dapar* 'primary psychological evaluation' is an acronym of ***d****erug* 'grading' + ***p****sixólogi* 'psychological' + ***r****išon* 'primary').

## 3. Discussion

3.1 *Non-integrated words*

The above linguistic features clearly show the unique behavior of certain words compared to SH regularly formed words. These words – loan words, proper names, acronyms, low register and substandard words – are the nonintegrated Hebrew (NIH) words, because they deviate morphophonemically from SH. Most of the NIH words are loan nouns whose morphophonemic structure deviated from the regularly built SH words which are typically formed through either root and pattern combination, or through stem and suffix. The structure of NIH words is less apparent, therefore they are treated differently.

Hebrew is not exceptional in this respect. In many languages, loan words and other group of words behave differently phonologically and morphologically. Chomsky and Halle (1968:373-389) discuss it in *The Sound Pattern of English* about English. Superanskaya

(1966:16-21, 1968: 9, 23-30) describes their uniqueness in Russian;[3] Itó and Mester (1995) in Japanese; Corson (1995:55-57) in Italian, Czech and Russian, in German and in various other languages; Giegerich (1999) in English; Hiramoto (2007) in Indonesian; Spagnol (2011) in Maltese, and there are many more examples cited in these studies.

### 3.2 *Two Hebrew systems*

The linguistic features listed above point to two sets of systems in Hebrew, which can be classified as follows:

Phonemic – SH includes one set of phonemes; NIH has an extra four phonemes

Phonotactic – SH restricts the occurrence of /p/, /b/, /v/, and /f/; NIH has no restrictions

SH allows only two-consonant clusters; NIH allows three- and four-consonant cluster

SH prefers up to three syllables words; NIH allows more than three syllable words

SH syllabic structures are limited; NIH syllabic structures are unlimited

SH allows ultimate or penultimate stress; NIH allows pre- or pre-pre penultimate stress

Morphophonemic – SH shifts stress to the inflectional suffixes; NIH keeps the stress on the stem

SH has complicated rules regarding number and gender inflections; NIH regularizes these inflections

Derivational *+i* and *+iyút* suffixes in SH carry ultimate stress; in NIH they do not.

In many cases, the features overlap and come in clusters. Loan consonant and consonant combination (2.1-2.2), number of syllables and syllabic structure including consonant clusters (2.3-2.5), stress and regularization in inflection (2.6-2.9); however, the inclusion of one linguistic feature does not necessarily entail the existence of another feature. Thus, for instance, three consonant clusters typify loan words, but if these words entered the language prior to the 20th century, they might behave like SH words in inflection, e.g. *sandlár-sandlarím* 'shoe-maker-s', *'ictrubál-'ictrubalím* 'pine cone-s' versus *biskvít-biskvítim* 'biscuit-s, *pártner-pártnerim* 'partner-s'. Loan consonants are not found in three consonant clusters. The word *séndvič* 'sandwich', for instance, includes a three consonant cluster, but the phoneme *č* does not occur in a cluster.

Most of the words are nouns. Verbs are represented only in features 2.1, 2.2 and 2.4, e.g. *čizbet* '(slang) told a lie', *fintez* 'fantasize', *hišpric* 'sprayed', all low register words. Since the verb system is only formed by root and pattern combination, their stress, conjugation and syllabic structures are predictable.

### 3.3 *Categories of NIH*

The results show the following NIH lexical categories:

1. Modern loan words versus Hebrew words
2. Proper names – personal or local, versus other nouns
3. Acronyms versus full words
4. Low-register words, including slang, colloquial, non-normative, and substandard words, some of them with emotional connotations, versus learned, medium or high register words.

Table 1 summarizes the findings:

[3] I am grateful to Keren Dubnov for her help in bringing this material to my attention and for translating some of its relevant pages.

| Feature | Loan words | Proper names | Acronyms | Low register/ Non-normative |
|---|---|---|---|---|
| 1. Special consonants | + | + | - | + |
| 2.*p-f b-v* distribution | + | + | + | + |
| 3. No. of syllables | + | + | - | + |
| 4. 3-4 Cons. clusters | + | + | - | + |
| 5. Syllabic structure | + | + | - | + |
| 6. Stress in derivation | + | + | - | + |
| 7. Stress in inflection | + | + | + | + |
| 8. Inflectional regularization | + | + | + | + |
| 9. Stress in *+i/+iyut* suffixes | + | + | + | + |

Table 1 *Linguistic features and their distribution among the word classes*

As can be seen from the table, only acronyms deviate in some respects from the other words. They do not include the special consonants *č*, *ž*, *ǧ*, and *w*; the number of their syllables is a maximum of three, e.g. *lahadám* 'such things never happened', acronym of ***l****o* 'not' + ***h****ayú* 'were' + ***d****varím* 'things' + ***m****e'olúm* 'never'; *zabašó* 'his problem', acronym of ***z****ot* 'this (f) + ***b****e'aya* 'problem' + ***šeló*** 'of him'. Also, their syllabic structure fits SH words, in general formed as $CVC_1^2V(C)$, which lead some linguists to treat them as derived from root and pattern (Ravid 1990, Nir 1993:88-91), and their stress is predominately ultimate and sometimes penultimate. In other respects, they behave exactly like borrowed words.
As presented above, many of the low-register and non-normative words are loan words, hence their resemblance to the first category of loan words. However, among them there are words which are not borrowed and nevertheless behave like the loan words, e.g. *'úga* '(childish) cake' (SH *'ugá*), *vákaša* '(colloquial) please, here it is' (SH *bevakašá*).

3.4 *Hebrew lexical layers*

3.4.1. The discussion leads to the issue of the lexical layers in Modern Hebrew. Rosén (1956:238) distinguished between several lexical layers:

a. proper names
b. foreign layer
c. learned layer
d. substandard layer

e. semi-foreign or learned foreign layer
f. familial discourse layer (which includes children's uses)
g. the general social layer.

The general social layer (g) in Rosén's terms equals the SH layer in my terminology. Much of Rosén's learned layer (c) also belongs to the SH layer in my terminology. Rosén's classification, like mine, mixes historical-etymological criteria with social ones, such as level of education, age, informal discourse, and familiarity. There is no way to keep them totally separate because they amalgamate in human usage (cf. Bybee 1985, 2001).

3.4.2. Another issue related to the above findings is the role of marking in the lexicon. The NIH words show regularization in inflection (feature 2.8 above), and in the addition of the derivational suffixes *+i* and *+iyut* (feature 2.9); therefore, they need to be marked in the lexicon. The marking [+nonintegrated], or more specifically, [+loan], [+acronym] or [+slang/colloquial], will enable the speaker to keep the stress on the stem instead of switching it to the suffix. Some lexical items should be marked as exceptional because in spite of not switching the stress to the suffix, the stress shifts to another syllable of the stem as in *'ótobus-'otobúsim*, *télefon-telefónim*.

3.5 *Two lexical issues*

3.5.1. The findings raise the differences between the mental lexicon and standard dictionaries regarding proper names. Most dictionaries do not list proper names regularly unless they have an extra meaning, e.g. *térax* 'Terah, a stupid person', *kórax* 'Korah, a very rich person', *yóram* 'Yoram, nerd'. However, proper names exist in the mental lexicon, and they form an integral part of every speaker's vocabulary, therefore they need to be treated among the lexical layers in any language.

3.5.2. How should substandard inflected forms be represented? In 2.2, we encountered the imperative forms *ftax* '(substandard) open!' (SH *ptax*), *šbor* '(substandard) break!' (SH *švor*). Should they be marked for the optional forms which are not normative? In principle, the lexicon does not list inflection; the grammar takes care of inflection; however, these forms need to be considered as well (Andersen 1982, Kiparsky 1982, Booij 2007, 2010). This issue may apply to other substandard forms which are not normative, like *maš'áb* 'resource' (SH *maš'áv*; see 2.2.1 above). I leave this question unresolved for the moment; this topic needs further investigation in any linguistic theory (cf. Corson 2001:66-98, Grevisse 1993).

3.6 *Suffixes*

Before closing, I would like to comment about the interaction between SH and NIH word systems regarding suffixes.

3.6.1. So far the discussion evolved around full words. Because of the extensive borrowing of words into Hebrew, some foreign morphemes are adopted in MH, and they result in some diffused forms. Here is a list of some of the derivational morphemes which are added sporadically to either borrowed or SH stems (Bolozky 2000, Schwarzwald 2002, §6.3.1 and unit 7, Cohen & Laks 2012). Some suffixes create words which seem to belong to learned

standard Hebrew, while other loan suffixes create substandard colloquial non-standardized words.[4] All these words are produced infrequently in oral or written discourse, and are not yet standardized. In all these cases, the origin of the stem has no influence on the words produced, and they all behave like NIH words. Here are a few examples:

(2) *+ist* 'occupation, belonging': *balaganíst-balaganístim* 'mess-maker-s' (*balagán* 'mess')
*+izm* 'abstractness': *mešixízm* 'messianism' (*mašíax* 'messiah'; SH *mešixiyút*)
*+logia* 'scientific-like': *xoxmológya-xoxmológyot* 'great stupidity-ies' (*xoxmá* 'wisdom')
*+nik* 'occupation, belonging': *kibúcnik-kibúcnikiyot* 'member-s of the kibbutz (m.sg-f.pl)'
*+čik* 'diminutive; derogation': *katánčik-katánčikit* 'very small (m-f)' (*katán* 'small')
*+tor* 'occupation': *xašmalátor* '(derogatory) electrician' (*xašmál* 'electricity'; SH *xašmaláy*)
*+stan* 'place': *xamastán* 'Hamas land'
*+lend* 'location': *dósnilend* 'Bnei Brak, a religious city' (*dos* is a derogative for a religious person, from Hebrew *dat* 'religion' in Yiddish pronunciation)
*+yáda* 'event, location': *trempiyáda-trempiyádot* 'hitchhiking stop-s' (*tremp* 'free ride')
*+éyšn* 'abstractness': *mecuyéyšn* 'excellent' (*mecuyán* 'excellent')
*+íya* 'location': *glideríya-glideríyot* 'ice-cream place-s' (*glída~glidá* 'ice-cream)
*+ness* 'abstractness': *beyáxadnes* 'togetherness' (*beyáxad* 'together')
*+les* 'lack': *zúgles* 'without a partner' (*zug* 'couple')
*+iko* 'diminutive, derogative': *solíko* 'solely, by himself' (*solo*)
*+ácya* 'abstractness': *pitputácya-pitputácyot* 'blabbering-s' (*pitpút* 'chatter')
*+ar* 'occupation': *komunár-komunárit* 'youth group coordinator (m-f)' (*komúna* 'commune'), *'arxivar-'arxivárim* 'archivist-s' (*arxiyón* 'archive'; SH *'arxiváy'*)

Because all these loan morphemes create words that behave like NIH words, the loan suffixes need to be treated both in grammar and in the lexicon as causing the words to undergo the same processes as the NIH words.

3.6.2. The reverse is not always applicable; original Hebrew suffixes do not necessarily change NIH stems into SH words. We presented in feature 2.9 above the Hebrew suffixes *+i* and *+iyút* that distinguish Hebrew from NIH stems. The only Hebrew suffixes that change loan stems into SH words regarding stress in inflection are *+an*, and its abstract derivative *+anút*, *+ay* and its abstract derivative *+a'út*, both indicating 'occupation'[5], and *+iyá* 'situation' (cf. loan *+íya* above). Either SH or NIH stems with these suffixes behave like SH words regarding inflection, e.g.:

(3) (*čélo*)>*čelán-čelanít-čelaním-čelanút* '(cello)>cello-player (m.sg-f.sg-m-pl)-cello playing', compare *čélo-čélo'im* 'cello-s'
(*solo*)>*solán-solanít-solaniyót* '(solo)>soloist (m.sg-f.sg-f.pl)', compare *sólo-sólo'im* solo-s'

[4] More examples can be found in http://blog.ravmilim.co.il/2012/06/03/smart-aleck, June 3, 2012.
[5] If the loan stem ends in *+ika*, the addition of these suffixes does not change the stress in inflection, e.g. *'estétika-estetikán-'estetikániyot* 'esthetics-aesthete (m.sg-f.pl)', *polítika-politikáy-politiká'im* 'politics-politician (m.sg-pl)'.

(*bank*)>*bankáy-banka'ít-banka'ím-banka'út* '(bank)>banker (m.sg-f.sg-m.pl)-banking', compare *bank-bánkim* 'bank-s'
(*'elektrón*)>*'elektronáy-'elektrona'út* '(electron)>electrician-electricity activity', compare *'elektrón-'elektrónim* 'electron-s'
(*ğank*)>*ğankiyá-ğankiyót* '(junk)>junk place (sg-pl)', compare *ğank-ğánkim* 'junk-s'
(*bardák*)>*bardakiyá-bardakiyót* '(slang; chaos)>chaos situation (sg-pl)', compare *bardák-bardákim* 'chaos-es'

These endings need to be marked as well as Hebraizing the words, whatever their origin may be. This means that derivational history is relevant in some cases but not in others, which is another theoretical issue that needs to be considered.

## 4. Conclusion

From the data presented above, there is a hierarchy among the factors that determine morphophonemic criteria: both modern loan words and suffixes, and proper names, automatically belong to the NIH component of the grammar and the lexicon. Acronyms belong to NIH words regarding some phonological features, and stress patterns in derivation and inflection. Derivational Hebrew suffixes vary: some change loan words into integrated words while others do not, thus these suffixes need to be marked. The remainder of the words is determined by sociolinguistic and psychological factors: colloquial register, substandard, and affectionate, especially derogative words, belong to the NIH words, whereas high and medium registers, standard-educated, and neutral words belong to the Hebrew integrated words.

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In *SKASE Journal of Theoretical Linguistics* [online]. 2013, vol. 10, no. 1 [cit. 2013-02-04]. Available on web page <http://www.skase.sk/Volumes/JTL22/pdf_doc/03.pdf>. ISSN 1339-782X.