Word Foreignness in Modern Hebrew

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WORD FOREIGNNESS IN MODERN HEBREW[1]

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This paper focuses on the linguistic criteria that distinguish Hebrew words from foreign ones in modern Hebrew. Three major criteria play a principal role in determining the differences between the words: phonological, syllabic, or morphological. The phonological criterion involves foreign consonants and allophonic structure, violation of constraints on Hebrew consonant clusters, and violation of Hebrew stress patterns. The syllabic structure depends on word length and deviation from syllabic Hebrew word structure. The morphological criterion is the most complicated one and involves word class, violation of Hebrew stress patterns in inflection and derivation, the ending *-a'ot*, and orphanhood, which refers to the isolation of a form within the morphological Hebrew system.

Some aspects of the generalizations have been described previously by Weiman. Changes that occurred in modern Hebrew since 1950, as well as certain inaccuracies in Weiman's analysis, may account for some of the differences in his analysis from the one presented here. This paper not only focuses on all of the factors involved in modern Hebrew loan words, but it can account for the distinction between loan and Hebrew elements.

Although the discussion is linguistically oriented, it bears on psychological reality as well. A first attempt at showing that the linguistic criteria supply the necessary means for determining the perception of foreignness will be conducted.

1. INTRODUCTION

The German linguistic literature distinguishes between *Lehnwörter* (loan words) as a historic phenomenon and *Fremdwörter* (foreign words) as a contemporary and concurrent phenomenon. *Lehnwörter* are old loan words that were entirely assimilated into the grammatical system of the absorbing language and are no longer regarded as foreign. *Fremdwörter*, on the other hand, enter the language in their foreign form without being adjusted grammatically or phonologically to the absorbing language.[2] Although the distinction is important and holds in principle for Hebrew as well, there is no clear-cut difference between *Lehnwörter* and *Fremd-*

[1] This is an expanded version of a paper presented at the North American Conference of Afroasiatic Linguistics held in Miami, Florida, March, 1997, entitled "Theoretical and Practical Issues in Modern Hebrew Word Foreignness." I would like to thank Shmuel Bolozky for his comments on an earlier draft of the paper as well as Fred Greenspahn and the two reviewers for *Hebrew Studies*, for their valuable comments.

[2] P. Von Polenz, "Fremdword und Lehnwort," in *Fremdwort Diskussion*, ed. P. Braun (W. Finkverlag: Munchen, 1979), pp. 9–32; A. Werner, *Terminologie zur neuren Linguistik* (Tübingen: Neimeyer, 1974), p. 129.

wörter, as will be shown here. Old loans can be linguistically identified as foreign in modern Hebrew, in spite of their past historic evolution and possible grammatical and phonological adjustments. Certain linguistic criteria contribute to their foreignness even at present.

There are many loan-words in Hebrew. Some of them were borrowed in earlier periods, while others are new. The following short lists demonstrate the Hebrew period during which the words were borrowed and their source language:[3]

(1) Biblical Hebrew: *śaq* (sack), *barzel* (iron) [unknown source]; *maḥoz* (area), *séfer* (book), *měḥir* (price) [Akkadian]; *kisse* (chair) *'ikkar* (farmer), *'umman* (artist) [Sumerian]; *ḥotam* (seal, signet-ring), *góme* (papyrus), *suf* (reed, bulrush) [Ancient Egyptian]; *séren* (captain, ruler [Philistine]); *gizbar* (treasurer), *gnazim* (treasures) [Persian], etc.

(2) Mishnaic Hebrew: *sanegor* (defense counsel), *qategor* (prosecutor), *'iṣṭadyon* (stadium), *sandal* (sandal), *'iṣṭumxa* (stomach) [Greek]; *kursa* (chair, armchair in modern Hebrew), *'aggav* (by the way), *'uvda* (fact), *gmara* (Gemara, Talmud), *tresaryon* (duodenum) [Aramaic]; *pardes* (fruit plantation, orchard) [Persian],[4] etc.

(3) Medieval Hebrew:[5] *'aqlim* (climate), *qóter* (diameter) [Greek, via Arabic]; *handasa* (geometry), *merkaz* (center) [Arabic], etc.

Modern Hebrew is replete with foreign words. Here are just a few examples:[6]

(4) From Arabic: *baláta* (tile), *fréxa* (bimbo), *tšizbat* (cock-and-bull story), *fasfus* (small)

(5) From Yiddish: *pékale* (bundle, package), *vílde xáye* (wild animal, ill-mannered), *béygale* (bagel, pretzel)

(6) From English: *blof* (bluff), *pántšer* (puncture), *kítbeg* (kitbag), *protékšen* (protection)

(7) From Russian: *džuk* (cockroach), *protékcya* (protection, favor), *bardak* (mess), *balagan* (confusion, mess) [from Persian via Russian]

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[3] The following special conventions are used: *ḥ* – *het*, q – *kof*, ś - *sin*, ṣ – *tsadi*, ' - *alef*, and ‘ - *ayin* mostly in the citation of Hebrew spelling in the periods previous to modern Hebrew; ' and ‘ are omitted in modern Hebrew loans; c - *tsadi*, x - *kaf rafa* or *ḥet* in modern Hebrew, š – English *sh*, ž - French *journal*, *tš* - English *ch*, *dž* - English g in *George*; stress is indicated by ´ only when not on the final syllable.

[4] *Pardes* already occurs in late Biblical Hebrew.

[5] Medieval Hebrew refers to the language period from ca. 400 to 1800 CE, in which time there were no native speakers of Hebrew, though the language was learned and used for written correspondence, for liturgy, and for literary writings.

[6] The examples are taken from all language registers. Some words are substandard, while others are literary or formal. The register is irrelevant to the discussion.

(8) From French: *kilometraž* (mileage), *bagaž* (car trunk), *odekolon* (perfume, *eau de Cologne*), *butik* (boutique), *omlet* (omlette)

(9) From Turkish and the Balkan languages: *askedínya* (laquat, medlar), *témbel* (idiot), *áyde~háyde* (challenging or encouraging call), *bakšiš* (tip, bribery)

(10) From Judeo-Spanish: *spóndža* (mopping the floor), *fasúlya* (beans), *burékas* (filled pastry), *kalavása* (pumpkin, red-hair or bold person)

(11) From German: *švung* (oscillation, energy), *izolírband* (insulation band for electricity), *pidžáma* (pajama) [from Persian via German]

(12) From Italian: *finíto* (finished), *bánda* (gang), *píca* (pizza), *lingwíni* (linguini), etc.

The list shows how widespread the borrowing phenomenon is in Hebrew. In this paper I will concentrate on foreign words in Hebrew, although linguistic foreign influence is very extensive and can be demonstrated through loan translations and semantic shifts as well. Issues such as the source languages, the semantic shifts, the ways the words traveled through languages until they found their way into Hebrew, and the reasons for the borrowing, are beyond the scope of this paper, interesting as they may be. Neither will I concern myself here with the register issue, namely, which languages contribute words to the elevated, formal registers[7] and which languages are regarded as low and non-prestigious so that borrowing from them could contribute only to informal uses such as slang words and curses.[8] All of these issues are important subjects for future research.

This paper will focus on the linguistic criteria that make certain words Hebrew and prohibit others from being considered as such. It will be

[7] Words from the general European stock are absorbed in the formal or general registers. Also, Slavic influence was common until 1950 in formal use.

[8] For general discussions regarding these issues, see: U. Weinreich, *Languages in Contact* (The Hague and Paris: Mouton, 1968); I. Lehiste, *Lectures on Language Contact* (Cambridge: MIT Press, 1988), pp. 1–27, 59–75; R. Appel and P. Muysken, *Language Contact and Bilingualism* (London: Edward Arnold, 1987). Hebrew phenomena were discussed in H. B. Rosen, *Our Hebrew* (Heb.; Tel Aviv: Am Oved, 1957); R. Sivan, *Al Ovne Lešon Yamenu* (Heb.; Jerusalem: Rubinstein, 1976); R. Ben-Shahar, *The Dialogue Language in Hebrew Original and Translated Drama*, (Ph.D. dissertation; Heb.; Tel Aviv University, 1983); M. Z. Kaddari, "The Foreign Elements in Hebrew," *Lešonénu La'am* 44 (1993) 99–109 [Heb.]; R. Nir, *Word Formation in Modern Hebrew* (Heb.; Tel Aviv: Open University, 1993), pp. 30-37; G. B-A. Sarfatti, "Hebrew and Modern European Languages," *Lešonénu La'am* 40–41 (1990) 319–326 [Heb.]; O. (Rodrigue) Schwarzwald, "Remnants of Judeo-Spanish in Modern Hebrew," *Pe'amim* 56 (1993), 33–49 [Heb.], "The Components of the Modern Hebrew Lexicon: The Influence of Hebrew Classical Sources, Jewish Languages and other Foreign Languages on Modern Hebrew," *Hebrew Linguistics* 39 (1995) 79–90 [Heb.]; M. Muchnik (ed.), *Foreign Elements in Contemporary Hebrew* (Heb.; Tel Aviv: Open University, 1994); Weiman will be discussed separately, see fn. 10.

shown that word structure plays a principal role in determining the various criteria, be they phonological, syllabic, or morphological. Each criterion will be described separately and, at the end of the discussion, a list for determining foreignness in modern Hebrew will be formulated.

The discussion is linguistically oriented, although the basic issue bears on psychological reality as well. It relates to the psycholinguistic question of why original *bona fide* Hebrew words are sometimes perceived as foreign, whereas actual loans may be perceived as original Hebrew words. The speaker knows in many cases that a word is foreign without being able to tell the reason for it. Language knowledge and linguistic awareness are not identical.[9] There might be a gap between linguistic facts and psychological perception, and it is beyond the scope of this paper to determine the psychological criteria. Nevertheless, I will try to prove that the linguistic criteria, that are not dependent on the given speaker's awareness, supply some necessary means for determining the perception of foreignness. Further psychological investigations will support the strength of the linguistic criteria.

Weiman's study is the most extensive one done so far on native and foreign elements in modern Hebrew.[10] His research, concentrating specifically on the formal type of modern Hebrew,[11] refrained from elaborating on non-formal speech, and ignored the issue of loan words in older layers of Hebrew. Also, his analysis lacked some observations at the time of publication, as Rosen pointed out.[12] The present study examines the foreign elements in modern Hebrew spoken today and considers the variety of factors involved. In some respects the analysis is similar; in more respects it is going to be totally different.

2. THE PHONOLOGICAL CRITERION

The phonological criterion involves foreign consonants (2.1), special consonant distribution (2.2), consonant clusters (2.3), and stress (2.4).

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[9] See O. (Rodrigue) Schwarzwald, "Language Knowledge and Linguistic Awareness," in *Hebrew Through the Ages in Memory of Shoshana Bahat*, ed. M. Bar-Asher, (Heb.; Jerusalem: The Academy of the Hebrew Language, 1997), pp. 399–412 .

[10] R. W. Weiman, *Native and Foreign Elements in a Language: A Study in General Linguistics Applied to Modern Hebrew* (Philadelphia: The Russell Press, 1950).

[11] The data were gathered from several university students in New York City during 1946–1949, all native speakers of Hebrew born in Palestine (see Weiman, p. 6), reflecting the Hebrew spoken 50 years ago.

[12] H. B. Rosen, Review of Weiman's book, *Tarbiz* 24 (1955) 234–237.

2.1. Foreign consonants:

Consonants such as *dž*, *tš*, *ž*,[13] and *w* mark words of foreign origin. For instance:

(13) *džiráfa* (giraffe), *džúngel* (jungle); *tšúptšik* (thingamajig), *kvetš* (smashed, squashed); *žaket* (jacket), *žargon* (jargon); *wíski* (whisky), *wálla* (wow!)

A word that includes any of these consonants is foreign. It should be noted that the *w* sound that typified in the past only Arabic loan words in modern Hebrew (e.g., *bab-el-wad* [The gate of the wadi, a place name], *wakf* [Moslem endowment]) is gradually being expanded for English loan words as well. Until the late 1960s people spoke of *víski*, *vášington*, *viskónsin*, *vínipeg* (whisky, Washington, Wisconsin, Winnipeg). Today they pronounce them more frequently with *w*: *wíski*, *wóšington*, *wiskónsin*, *wínipeg*. This is why Weiman does not include this consonant as a foreign marker.[14]

2.2. Special consonant distribution:

The sounds *p*, *f*, *b* or *v* exist in modern Hebrew as independent phonemes, as for instance in *sapa-safa* (sofa-language), *viter-biter* (gave up-cut), *dibur-divur* (speech-delivery [by mail]). This distribution of phonemes contrasts with the past situation where the sounds *p* and *f*, *b* and *v* were allophones of the phonemes */p/* and */b/* respectively. However, due to the Hebrew Spirantization Rule[15] that left some residues, these phonemes do not occur freely in all positions in modern Hebrew. The contrast between *p* and *f* does not exist word-initially or word-finally. They are neutralized in *p* word-initially and in *f* word-finally in a Hebrew word. Also, the opposition between *b* and *v* is neutralized in word final position where only *v* occurs there. Consequently, the existence of *f* word-initially and of *p* or *b* word-finally marks foreign words in modern Hebrew.[16] For example:

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[13] The sound *ž* is also an allophone of *š* in modern Hebrew caused by voicing assimilation, e.g., *xežbon* (<*xešbon*) (arithmetic), *bižvil ma* (<*bišvil ma*) (what for).

[14] R. W. Weiman, *Native and Foreign Elements*, pp. 27, 63.

[15] The Spirantization Rule in Biblical Hebrew changed the plosives *p t k b d g* into their fricative counterparts after a vowel when not geminated. In modern Hebrew, there are restricted morphophonemic alternations between *p* – *f*, *b* – *v* and *k* – *x*. See O. Schwarzwald, "Concrete and Abstract Theoretical Methods and the Analysis of BGDKPT – BKP in Hebrew," *Lešonénu* 40 (1976) 211–232 [Heb.].

[16] See R. W. Weiman, *Native and Foreign Elements*, pp. 10–12, 51; O. Schwarzwald, "Concrete and Abstract Theoretical Methods," pp. 221–222.

(14) *foto* (photo), *falax* (farmer), *fanat* (fanatical), *fer* (fair),[17] *skup* (*'itona'i*) (journalistic scoop), *mikroskop* (microscope), *princip* (principle) *žlob* (tall [and heavy]), *klab~klub* (club), *mikrob* (microbe, parasite)[18]

2.3. Consonant clusters and phonotactics:

There are certain limitations on consonant clusters in modern Hebrew depending on their location within the word:

2.3.1. Consonant clusters word-initially:

An initial two-consonant cluster word is quite common in Hebrew, for example, *bgadim* (clothes), *ktana* (small, f.), *sxita* (extortion). There are no consonant clusters beginning with either *l*, *m*, *n*, *r*, and *y*, or the "gutturals" ', ',[19] *h*, and *x*. Also, there is no initial consonant cluster if the second consonant is glottal ', ', or *h*.[20] Here are a few examples of plural forms of "segolate" words that demonstrate these limitations:

(15)	**Singular**	**Plural**	**Gloss**
	šélet	*šlatim*	side-board, name plate
	léxem	*lexamim*	bread
	méser	*mesarim*	message
	néšer	*nešarim*	eagle
	rémes	*remasim*	reptile, insect
	yéled	*yeladim*	child
	'éven	*'avanin*	stone
	'éved	*'avadim*	slave
	héfex	*hafaxim*	opposite
	xélek	*xalakim*	part
	tó'ar	*te'arim*	degree
	šá'ar	*še'arim*	gate
	cóhar	*ceharim*	window

[17] Note that speakers use this device in words that are originally pronounced with *p* in the source language, e.g., *fornográfya* (pornography), *fláster* (band-aid, plaster), *fólio* (polio), though sometimes they over-apply the Spirantization Rule, as in *pestival* (festival), *pólio* (folio). See some of the examples in Z. Bar-Lev, "Natural Abstract Hebrew Morphology," *Folia Linguistica* XI (1978) 259–272, especially pp. 263–264.

[18] This factor is of fluctuating nature nowadays, especially regarding *b*, as one can often hear *'akrab* (scorpion), *'ešnab* (hatch), and *maš'ab* (resource), instead of *'akrav*, *'ešnav*, and *maš'av*, due to back formation from the plural *'akrabim*, *'ešnabim*, and *maš'abim*.

[19] Although the consonants ' and ' are not realized phonetically word-initially, I include them here for their paradigmatic structuring.

[20] See H. Rosen, *Our Hebrew*, pp. 146–154; R. W. Weiman, *Native and Foreign Elements*, pp. 24–25, 30. Counter examples to this distribution are presented in U. Oman, "The Performance of Phoneric (Initial) Clusters," in *Readings in Phonology*, ed. U. Oman (Heb.; Jerusalem: Akademon, 1973), pp. 186–190.

Most of the restrictions on initial cluster combination depend on consonant sonority. The consonant *x* is exceptional. It is low in sonority, and in fact it does occur in modern Hebrew, but only in loan words, as in:

(16) *xrop* (snore, sleep), *xronológya* (chronology), *xromozom* (chromosome), *xlor* (chlorine), *xróni* (chronicle, permanent), *xreyn* (horseradish)

A word like *xrop* must be of foreign origin not only because of the final *p*. Had it been Hebrew, it should either be *krof* or *xarof* word-initially. The other examples in (16) prove that the restriction regarding *x* as presented above is not phonological in Hebrew but rather morphological, depending on word class and inflection.

Another phonological restriction is associated with the initial consonant cluster. Due to the residues of the Spirantization Rule, p and b do not occur in Hebrew words in second position (e.g., *tfila* 'prayer,' *švita* 'strike'). Consequently, words like the following are examples of loan words with that type of violation:

(17) *špil* (game), *špic* (pointed tip), *spútnik* (sputnik), *zbále* (trash), and *zbeng* (zoom)

Weiman marks this as a strong restriction, but in fact it is not as strong today as the previous one.[21] Because of the new formation of the imperatives directly from the future in colloquial Hebrew, we do find *špox* (throw!, m.), *špexi* (throw!, f.) from *tišpox*, *tišpexi*, and *šbor* (break!, m.), *šberi* (throw! f.) from *tišbor*, *tišberi*.[22]

Three-consonant clusters occur in modern Hebrew only in foreign words,[23] all of them include a fricative first and a sonorant *l*, *r*, or *y* in third position. For instance:

(18) *šprits* (splash), *sprey* (spray), *struktúra* (structure), *štrúdel* (Strudel), *xtyar* (*~xatyar* 'old man'), *xnyok* (despised, religious extremist)

2.3.2. Consonant clusters word medially:

In word-medial position, modern Hebrew frequently has a two-consonant cluster, for example, *simla* (dress), *migdal* (tower). Clusters do not occur when there happen to be two identical consonants, (cf. *calxa* [she crossed] vs. *calela* [she dived]), or when the first possible candidate for the

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[21] R. W. Weiman, *Native and Foreign Elements*, p. 30.

[22] See S. Bolozky, "On the New Imperative in Colloquial Hebrew," *Hebrew Annual Review* 3 (1979) 17–23.

[23] I ignore here consonant clusters in juncture where up to four (five in loans) consonants may occur consecutively: *gamart šmira* (you [f] finished guarding), *šafaxt sprey* (you [f] poured spray).

consonant cluster is a "guttural": ', ', *h*, and rarely *x*[24] (cf. *šalxa* 'she sent' vs. *ša'ala* 'she asked,' *ca'aka* 'she screamed,' *cahala* 'she rejoiced'). Hence, the syllabic or morphological criteria are the cause for foreignness of loan words such as *prízma* (prism), *'áxla* (great) rather than the occurance of a two-consonant cluster. However, a first *p* or *b* consonant in the medial cluster is also a sign of foreignness, for example, *sibsed* (subsidized), *zápta* (a blow), due to the traces of the Spirantization Rule.

Medially, three-consonant clusters mark loan words, either old or new.[25] Most of them include at least one sonorant (*n*, *l*, *r*, or *y*), primarily at the end, though I found two examples with no sonorants at all, which are brought at the end of the following list:[26]

(19) *sandlar* (shoemaker), *ictrubal* (cone, acorn [both from Greek]), *gandran* (coquettish [<Aramaic]), *psantran* (pianist [<Greek *psalterion*]), *protékcya* (protection), *províncya* (province, farm country [<Slavic and Yiddish]), *zángvil* (ginger, zangwill), *pártner* (partner), *geocéntri* (geocentric), *teocéntri* (theocentric), *perspektíva* (perspective),[27] *maéstro* (maestro), *markSísti* (Marxist [<General European]), *šméndrik* (small good-for-nothing [<Yiddish]), etc., *biskvit* (biscuit [<General European]), paskvil~*paškvil* (pasquil [<Slavic or General European?])[28]

The three-consonant cluster is an important linguistic criterion for identifying foreign words although some of the words may be perceived by the native speakers as original Hebrew words (e.g., *sandlar*, *gandran*; see discussion in section 5).

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[24] The consonant *x* (historical *ḥ* often behaves like a regular non-guttural consonant, e.g., *paxda~paxada* (she was scared), *'ixdu~'ixadu* (they united), as compared to *patxa* (opened), *'ilfu* (they trained). Due to the opacity of *x*, sometimes *x* from original *kaf* behaves like a guttural, e.g., *šaxaxa* (she forgot) (for *šaxexa*; cf. *tiškax* [you will forget]), *'oráxat din* (lawyer, [f]) (for *'oréxet din*).

[25] R. W. Weiman, *Native and Foreign Elements*, p. 31 states this restriction without reference to the cluster structure.

[26] Some of the examples here are drawn from Cohen-Gross's dissertation, written under my supervision: D. Cohen-Gross, *The Morphological Syllabic Structure of Modern Hebrew*, (Heb., Ph.D. Dissertation; Bar Ilan University: Ramat Gan, 1997).

[27] Frequently pronounced *prespektiva*, without this medial cluster.

[28] These two might have been originally created with the final sonorant *w* in the source languages, but in Hebrew they form synchronically a three-consonant cluster with no sonorant.

2.3.3. Consonant clusters word finally:

Hebrew final consonant clusters occur systematically only in the verb system, in the inflection of the second person feminine in the past tense, for example, *katavt* (you [sg., f.] wrote), *hišlaxt* (you threw away). Weiman claims that any word with any consonant cluster other than *Ct* word-finally is foreign;[29] however, it is clear that any consonant cluster not in the verb system marks a loan word. Even the few old Hebrew words with final consonant clusters ending in *t* or *d*, are of foreign origin. For example:

(20) *neft* (kerosine) [from Greek *naphta* via Aramaic], *nerd* (nard, spikenard) [from Persian *nardin*], *qošt* (certainly; kind of perfume) [from Aramaic *qåšt* in the first meaning, and from Greek *costus* in the second meaning]

All other words with any consonant cluster word-finally are of foreign origin. For instance,

(21) *tank* (tank), *ping-pong* (table tennis), *fakt* (fact), *marš* (march), *zamš* (suede), *golf* (golf), *nerv* (nerve), *boks* (punch), *socyalist* (socialist), *moment* (moment), *proyekt* (project), and *izmaragd*[30] (emerald, smargd)

As the list shows, the final consonant in each of these examples is an obstruent, a stop, or a fricative. When a final sonorant occurs in a foreign consonant cluster, it is preceded by a vowel in modern Hebrew:

(22) film>*fílim* or *fílem*, Marxism>*marksízim~marksízem*, monocle>*monókel*, jungle>*džúngel*, Stern>*štéren*, cadre>*káder*, yodel [*yodl*]>*yódel*, centre>*sénter*, Yiddish *Streiml*>*štráymel~štréymel*

2.4. Stress:

Most Hebrew words are stressed on the ultimate syllable. Some groups of Hebrew words known as the "segolates," are stressed penultimately,[31] and so are "dual-plurals."[32] They are formed according to a very definite syllabic structure:[33]

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[29] R. W. Weiman, *Native and Foreign Elements*, pp. 31, 51.

[30] People often pronounce it '*izmargad* (metathesis for simplification?).

[31] S. Bolozky, "The Segolates: Linear or Non-linear Derivation," in *Hadassah Kantor Jubilee Book*, eds. O. R. Schwarzwald & Y. Shlesinger (Heb.; Ramat Gan: Hen, 1995), pp. 17–26.

[32] O. (Rodrigue) Schwarzwald, "Words with *+ayim* Endings in Hebrew," in *Studies in Hebrew and Jewish Languages Presented to Shelomo Morag*, ed. M. Bar-Asher (Heb.; Jerusalem: Bialik, 1996), pp. 341–358.

[33] C stands for a Consonant, G for a Guttural ', ', *h*, or *x* (historical *ḥ*), V for Vowel, and X for any sequence of syllables.

(23) CéCeC – *šéleg* (snow), *néfeš* (soul), etc.
CáGaC – *náxal* (river), *ná'al* (shoe), etc.
CéCaG – *récax* (murder), *réga'* (moment), etc.
CóCeC – *'óhel* (tent), *bóhen* (toe), etc.
CóGaC or CóCaG – *róxav* (width), *góvah* (height), etc.
CéCi or CóCi – *léxi* (cheek), *péti* (naive), *'ófi* (character), *dófi* (fault), etc.
CéCe – *déše* (grass), *hége* (wheel), etc.
CáyiC – *šáyit* (cruise), *cáyid* (hunting), etc.
XéCet – *délet* (door), *mivréšet* (brush), *toséfet* (addition), *'igéret* (letter), *šaršéret* (chain), *kotéret* (title), etc.
XáGat – *migbá'at* (hat), *kadáxat* (fever, malaria), *šapá'at* (flue), *mefakáxat* (superviser (f)), *dlá'at* (pumpkin), etc.
XóCet – *xaróšet* (industry), *tizmóret* (orchestra), *któvet* (address), *tarnególet* (chicken), etc.
XéCeC (rare) – *pilégeš* (concubine, mistress), *rakével* (cable-railway), etc.
CáveC (very rare) – távex (centre), *mávet* (death), *gáven* (color), *'ável* (injustice)
Xáyim – *ragláyim* (feet), *yadáyim* (hands), *'ofanáyim* (bicycles), *šnatáyim* (two years)

Notes: In the inflectional system of Hebrew some forms are systematically stressed on the penultimate syllable. For example, *lamádnu* (we studied), *šláxna* (send!, pl. f.), *hirgíša* (she felt), *kulánu* (all of us), *sfaréha* (her books), etc. Also, words with directional *–a* ending are stressed penultimately, for example, *yáma* (to the sea), *hagalíla* (to the Galilee). Since the subject of this paper is loan lexemes, inflected penultimate words with person distinction or with the directional affixes will not be dealt here. Number and gender inflection are relevant, as shown below in section 4.2.

Pre-penultimate stress in Hebrew words occur only in verb inflection of roots ending in *t* or *d*, as in *lamádeti* (I studied), *hitmádeta* (you [sg. m.] persisted), *xitáteta* (you [sg. m.] poked), *sirtáteti* (I drew) (alternating with *lamáti*, *hitmáta*, *xitáta*, *sirtáti*). As mentioned earlier, they do not form independent lexical items, therefore they will be disregarded at that point of the discussion (see section 5).

Cases of *patax gnuva* (*furtive patah*) also seem to be stressed penultimately, e.g., *gavóa*(*h*) (tall), *rúax* (wind), *kaméa* (amulet); in fact, they form one vowel cluster (like a diphthong) and need to be treated as one vowel. In any case, they occur only in Hebrew words.

All lexemes which are stressed penultimately and do not fall into the above presented Hebrew patterns, or those stressed pre-penultimately or pre-pre-penultimately are of foreign origin, as presented in (24) and (25):

(24) Penultimate stress: *obyektívi* (objective), *kultúra* (culture, civilization), *kabína* (the front part of a truck), *píta* (pita bread), *vídyo* (video), etc.

(25) Pre-penultimately and pre-pre-penultimately stress: *télefon* (telephone), *ótobus* (bus), *álgebra* (algebra), *matemátika* (mathematics), *bákala* (codfish), *pómpernikel* (pumpernickel), etc.

Words with no exceptional stress pattern, as in (26) and (27), are somewhat problematic. Their phonological and syllabic structure is identical to that of Hebrew, and nothing overt in them might hint at their being foreign. These examples will be discussed again in section 4.3.

(26) Ultimate stress: *baron* (baron), *dukas* (duke), *radar* (radar); Cf. Hebrew *xalon* (window), *šuman* (fat) or *matar* (rain)

(27) Penultimate stress: *méter* (metre, length size), *éter* (ether), *šémi* (Semitic); cf. Hebrew *mélex* (king), *béxi* (cry)

3. Syllable Structure Criterion

The syllabic structure is also related to consonant clusters as well as to word length and stress pattern. Typical Hebrew words are of the following syllabic structures:

Ultimate stress

$C_1^2V(C)$ – one syllable word with initial one or two consonants: *šen* (tooth), *kfar* (village), *pe* (mouth), *sxi* (dirt')

$C_1^2VC_1^2V(C)$ – two syllable words with possible initial or medial two-consonant clusters: *davar* (thing), *maxšev* (computer), *šmanman* (chubby, fattish), *maka* (plague), *šmama* (desert), *simla* (dress)

$C_1^2VC_1^2VC_1^2V(C)$ – three syllable words: *mexubad* (respectable), *zikaron* (memory), *tixtovot* (correspondences), *parašim* (horse, riders), *ktantanim* (tiny [pl. m.]), *pe'altan* (active), *harpatkan* (adventurer), *bakara* (control), *hadpasa* (printing)

Penultimate stress

C_1^2VCVC – two syllable words with possible initial two-consonant clusters. Vowel in final position is rare and limited to a few lexical items: *šéleg* (snow), *dlá'at* (pumpkin), *léxi* (cheek). See more examples in 23.

$C_1^2VC_1^2VCVC$ – three syllable words: *cahévet* (jaundice), *moznáyim* (scale), *mikláxat* (shower), *pkidónet* (small clerk [f.]), *miktóren* (jacket) No Hebrew word with this syllable structure ends in a vowel when stressed penultimately.

Hebrew words with four and five syllables include mainly plural forms, and only a single consonant occurs in the beginning of the last syllable, be it stressed ultimately or penultimately. Also, they all end in a consonant (for instance, *mevugarim* 'elderly people,' *taklitiyot* 'record libraries,' *misparáyim* 'scissors').

Any syllabic structure which deviates from these conditions is a natural candidate for being foreign. It might deviate from inner vowel Hebrew structure in the syllable number and structure as in (28), in pre-penultimate stress as in (25), or by ending in a vowel in multi-syllabic words as in (29). Additional examples may be found in (5), (10)–(12), (19)–(22), (24), and in the examples stressed penultimately of the others.

(28) a. Five syllable word stressed penultimately with a consonant cluster before the last syllable: *ximoterápya* (chemotherapy), *sterilizácya* (sterilization), *otosugéstya* (auto-suggestion, inner influence)

b. Four syllable word stressed penultimately with a consonant cluster before the last syllable: *moratóryum* (moratorium)

c. Four syllable word ending with CeCeC, but stressed ultimately rather than penultimately: *musketer~muskiter* (mousquetaire)

d. Four syllable word stressed ultimately with a consonant cluster before the last syllable: *patriyarxat* (patriarchy)

e. Three syllable word stressed penultimately: *substrátum* (substrate), *faláfel* (falafel)

(29) a. Stressed penultimately with *–a* ending: *limonáda* (lemonade), *mutácya* (mutation), *morfológya* (morphology), *bandána* (head or neck ribbon)

b. Stressed penultimately with *–i* ending: *orgáni* (organic), *geográfi* (geographic [see 4.2.2])

c. Stressed penultimately with *–e* ending: *šmegége* (clumsy, idler)

d. Stressed penultimately with *–o* ending: *sopráno* (soprano), *alégro* (alegro), *stúdyo* (atelier)

4. THE MORPHOLOGICAL CRITERION

The first phonological criterion presented in section 2 has been discussed at some length in the past, however, not systematically and thoroughly. The second syllabic criterion in section 3 has not been dealt with by any linguist, to the best of my knowledge. The third set of criteria, namely morphological, which will be discussed here, is the most complicated one, and it has hardly been considered before. It involves three separate considerations: a) word class (4.1); b) word inflection and derivation (4.2); c) orphanhood (4.3).

4.1. Word class:

It is a well known fact that there are differences in word classes both in the quantity of loan words and in their linguistic qualities. Appel and Muysken[34] discuss these questions and cite several studies from various languages (Sanskrit, Norwegen, Hindi) regarding loan quantity. The most elaborate and detailed hierarchy of the number of word classes borrowed in a language is cited from Muysken himself, who based his data on Spanish borrowing in Quechua:

Nouns - adjectives - verbs - prepositions - coordination conjunctions - quantifiers - determiners - free pronouns - clitic pronouns - subordinating conjunctions

One can also find a basic difference between word classes in Hebrew. Nouns, adjectives, and to a lesser degree exclamation and interjection words are the most widely spread foreign words in modern Hebrew, in contrast to function words and verbs. Nouns are assigned gender according to their endings: *–a* ending, usually unstressed, marks feminine nouns (with the exception of *maharádža* [Indian Maharaja, m.), whereas all other nouns are masculine. Adjectives will be refered to in section 4.2.1.

The number of verbs of foreign origin is relatively small in Hebrew, and they distinctly differ in their linguistic behavior from any other word class. Verbs are entirely assimilated into the modern Hebrew morphological system. After the root consonants are extracted from nouns or directly from the foreign verb, they fall into one of the Hebrew patterns (*binyanim*), mainly *pi'el*. For instance:

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[34] R. Appel and P. Muysken, *Language Contact*, pp. 170–172.

(30) *torpédo* > √*trpd* + *pi'el* > *tirped* (torpedoed)
télefon > √*tlfn* + *pi'el* > *tilfen~tilpen* (phoned)
blof (bluff) > √*blf* + *pi'el* > *bilef* (bluffed)
subsídya (subsidy) > √*sbsd* + *pi'el* > *sibsed* (subsidized)
discuss > √*dsks* + *pi'el* > *diskes* (talked)
tšupar (reward) > √*tšpr* + *pi'el* > *tšiper* (rewarded)

In some cases, the vowels of the source noun influence the choice of the verb pattern, as in (31):

(31) *švic* (showing-off) > *hišvic* (*hif'il*) (showed off)
špric > *hišpric* (*hif'il*) (sprinkled)
xrop (snore) > *laxrop* (*pa'al*) (to snore) > *xarap* (he snored)
šnórer (beggar) > *lešnorer* (*polel*) (to beg [for money])

Verbs fit into the morphological system of Hebrew. Therefore, unless there is a phonological violation as presented in section 2 above (as in *xarap* [final *p*], *sibsed* [*b* after a vowel], *tšiper* [*tš* consonant], *hišpric* [a three-consonant cluster word medially]), they are hardly perceived as foreign.

4.2. Word derivation and inflection:

4.2.1. Foreign derivational suffixes and their inflection:

Foreign suffixes are very rare in modern Hebrew; however, one can find these endings: *–tšik* (small), *–íko* (small), *–le* (beloved), *–ist* (doer), *–izm* ([abstract noun], which changes into phonetic *–izem* or *–izim*, see (22) above), *–nik* (belonging to), *–cya~–Cya* (abstract noun), *Xik*-a ([abstract] noun), *–er~–ar* (doer). These endings come from various sources, Yiddish~Slavic, Judeo-Spanish, English, Russian or General European. They occur not only in foreign words but are integrated into the modern Hebrew system and are assigned to Hebrew stems as well. Nevertheless, they behave as foreign words, as will be demonstrated below. For instance,

(32) *–tšik*: *politúrtšik* (one who polishes furniture), *pišalóntšik* (small, young, worthless beginner), as well as *katántšik* (tiny [Hebrew *katan* 'small']), *šaméntšik* (chubby [Hebrew *šamen* 'fat'])

–íko: *solíko* (loner, does everything by himself), as well as *mamzeríko* (sharp, witty [Hebrew *mamzer* 'bastard']), *xamoríko* (small donkey' [Hebrew *xamor* 'donkey']), *kofíko* (monkey-like; a character in children's literature [Hebrew *kof* 'monkey'])

–le: *pícale* (tiny), *mámale* (darling [General European *máma* 'mother']), as well as *xabúbale* (honey [Arabic *xabub* 'dear']), *mótekle* (honey [Hebrew *mótek* 'sweet'])

–ist: *mazoxist* (masochist), *sadist* (sadist), *traktorist* (tractor-driver), as well as *kabalist* (one who practices Kabbala), *bardakist* (mess maker), *bicu'ist* (performer [Hebrew *bicúa* 'performance'])

–er~–ar: *štínker* (informer), *šprícer* (sprinkler), *komunar* (youth movement leader), as well as *širyoner* (armour soldier [Hebrew *širyon* 'armour']), *mafyoner* (mafioso [Italian '*mafia*'])

–nik: *núdnik* (nagger), as well as *mošávnik* (someone from a Moshav), *klúmnik* (good-for-nothing man [Hebrew *klum* 'nothing']), *kibúcnik* (originating from a Kibbutz), *xafífnik* (sloppy, a man who does superficial work [Arabic *xafif*]), *úmnik* (soldier in the United Nations[35] forces), *šmúcnik* (member in the youth movement *Haš<u>o</u>mer Ha<u>c</u>a'ir*)

–cya~–Cya: *integrácya* (integration, desegregation), *inkvizícya* (inquisition), *biyópsya* (biopsy), *prozódya* (prosody), *fúnkcya* (function), as well as *pitputácya* (nonsense talk [Hebrew *pitput* 'blabbering']), *pilpulácya* (arguments on worthless details [Hebrew *pilpul* 'thorough study of an issue'])

Xik-a: *polítika* (politics), *matemátika* (mathematics), *mexánika* (mechanics), *réplika* (replica-s)

The foreignness is marked in the examples not only by their phonological features as in *–ist*, *–tšik*, and by their stress patterns (see section 2 above); those endings that are not stressed in their full loan components, are also not stressed in their new forms (e.g., *politúrtšik-katántšik*, *mámale-mótekle*, *núdnik-mošávnik*, *integrácya-pitputácya*). Their foreignness is identified, therefore, by the deviation from the regular syllabic structure as presented in section 3 above.

The foreignness of these endings, partially characterized by their phonological and syllabic features, is preserved in their inflected forms. The stress is not shifted to the *–im* or *–ot* endings of the plural or to the *–it* ending of the feminine, but rather stays on the stem, contrary to Hebrew plural formation where the endings carry the stress (e.g., *sus-susim* 'horse-s', *talmida-talmidot* 'student-s' f.).

[35] The UN is abbreviated to '*um* in Hebrew according to its translation *'<u>u</u>mot <u>me</u>'uxadot*.

(33)		**Singular**	**Plural**	**Feminine**	**Gloss**
	a.	*štínker*	*štinkerim*	*štinkerit*	informer
	b.	*núdnik*	*núdnikim*	*núdnikit*	nagger
	c.	*mafyoner*	*mafyonérim*	*mafyonérit*	mafioso
	d.	*mazoxist*	*mazoxístim*	*mazoxístit*	masochist
	e.	*bicu'ist*	*bicu'ístim*	*bicu'ístit*	performer
	f.	*katántšik*	*katántšikim*	*katántšikit*	tiny
	g.	*širyoner*	*širyonérim*	*širyonérit*	armour soldier
	h.	*komunar*	*komunárim*	*komunárit*	youth group leader
	i.	*mošávnik*	*mošávnikim*	*mošávnikit*	Moshav man
	j.	*fúnkcya*	*fúnkcyot*	—	function
	k.	*biyópsya*	*biyópsyot*	—	biopsy
	l.	*pitputácya*	*pitputácyot*	—	nonsense talk
	m.	*mexánika*	*mexánikot*	—	machanics

Two morphological facts are striking in the data presented in (33). The first is that the plural and feminine forms retain the stress pattern of the singular form and do not shift the stress to the ending, even in Hebrew stems (33e, f, g, i, l). The second fact pertains to the gender and the plural formations of these forms. Loans ending in a consonant are masculine and add the *–im* plural suffix, whereas nouns ending in the vowel *–a* are feminine and replace the *–a* suffix with the plural suffix *–ot*. Original Hebrew words do not necessarily follow this pattern. Hebrew nouns ending with a consonant can be either masculine or feminine, however, most nouns ending with a stressed *–a* are feminine.[36] Their plural endings do not necessarily follow the above distribution, as can be seen in (34).

(34) *gir-girim* (chalk-s, m.), *kir-kirot* (wall-s, m.), *'éven-'avanim* (stone-s, f.), *levena-levenim* (brick-s, f.), *brexa-brexot* (pool-s, f.)

If a loan word ends in a consonant, its plural is *–im* even if the final consonant is the *–s* which marks the plural in the source language:

(35) *burékas-burékasim* (filled pastry-ies), *džins-džínsim* (jeans), *tšips-tšípsim* (French fries)

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[36] The word *layla* ends with *–a*, but it is not stressed. One exception is *šulya* (apprentice [m.]) stressed on the final syllable, a new formation in modern Hebrew based on Aramaic *šewalia* that received it from Akkadian *šamallu* (Michael Sokoloff and Yona Sabar, personal communication). The morphological oddity of the form derives from its foreign source.

Loan words ending with any vowel other than *–a* (*–o*, *–e*) are masculine nouns as well. In general, words with the ending *–le*, if pluralized, use the Yiddish *–lex~-lax* suffix for the plural (e.g., *béygalex~béygalax* (pretzels), *pìckalax* (tiny [pl.]); I could not find any plural forms for words with the *–íko* ending; My guess is that it would be *–íkos*).

As observed above, Hebrew words are stressed ultimately or penultimately. Loan words in modern Hebrew might have a pre-penultimate or pre-pre-penultimate stress as well, as presented in (25) above. The suffix *–nik* requires a steady stress in the base, thus causing a pre-pre-penultimate stress in Hebrew:

(36) *núdnik-núdnikim*, *núdnikit-núdnikiyot* (nagger; m.–pl., f.–pl.)
mošávnik-mošávnikim, *mošávnikit-mošávnikiyot* (Moshav member; m.–pl., f.–pl.)
kibúcnik-kibúcnikim, *kibúcnikit-kibúcnikiyot* (Kibbutz member; m.–pl., f.–pl.)

The penultimate stress of *núdnik*, *mošávnik* and *kibúcnik* becomes pre-penultimate stressed in the masculine plural and in the feminine singular forms, and it becomes pre-pre-penultimate in the feminine plural forms.

A final note in this context: the *–izm* ending which becomes *–izim* or *–izem* in the singular, reveals the consonant cluster when pluralized, as in (37), though the *–izim* itself is quite often perceived as plural, as in *kama mexanízim* (several mechanisms [for *mexanízmim*]), just like *'arba'a filim* (four film rolls [instead of *'arba'a filmim*]).

(37) *mexanízim~maxanízem-maxanízmim* (mechanism-s), *neologízmim* (neologisms)

4.2.2. Hebrew derivational suffixes and their inflection:

The stress in Hebrew original words is predicted in derivational and inflectional suffixes: the ending in all Hebrew suffixes is stressed, as in (38), except for the unstressed *–et* feminine ending, as in *xayal-xayélet* (soldier; m., f.), and the "dual-plural" ending *-áyim*, as in *cipórencipornáyim* (nail, sg. pl.), *nekuda-nekudatáyim~nekudotáyim* (dot-colon).

(38) *xalil>xalilan* (flute>flute player), *xašmal>xašmalay* (electricity >electrician), *sapar>saparit* (hair dressed; m.>f.), *xaver> xaverut* (friend>friendship), *dat>dati>datiyut* (religion>religious> religiousness), *tipeš > tipšon* (silly > small silly), *talmid > talmida* (pupil (m.>f.)

Contrary to Weiman's claim, loan words also take derivational Hebrew suffixes, although the stress patterns in the various endings may vary.[37] The examples in (39) demonstrate the *–an* ending.

(39) *tšelan* (cello player), *psantran* (piano player), *vyolan* (viola player), *solan* (solo performer), *fašlan* (screw-up, loser) *estetikan* (esthetician)

All of the examples in this group take the stressed Hebrew ending. Their inflection for gender and number also follows the Hebrew stress rules, *tšelanit, psantranim, vyolaniyot, solanit, fašlanim.* The last word though, *estetikan*, keeps the stress on the last stem syllable in inflection: *estetikánit, estetikánim, estetikániyot* (f.–pl., m.–pl., f.). The multi-syllabic structure and the *–ika* ending are probably the causes of its deviation from the stress pattern which would otherwise be dictated by the ending.

In the examples presented in (40), the *–ay* nominal (doer) ending is added to foreign stems. In most of these cases, the stress remains ultimate in the inflection, as in the first example. The last example, *politikay*, with the *–ika* ending discussed above (4.2.1) already in its stem, retains the stress on the *–a(y)* syllable in inflection.

(40) *bankay-banka'it-banka'im-banka'iyot* (banker; m., f., m.pl., f.pl.), *klinay-(tikšoret)* ([communication] clinician), *elektronay* (electrician), *texnay* (technician), *tenisay* (tennis player), *politikay-pilitiká'it-politiká'im-politiká'iyot* (politician)

The *–i* ending is the most productive adjectival formation for foreign words. Hundreds of loan words are formed with this ending. Contrary to Hebrew words, the stress in these loan words is always on the penultimate syllable (see more examples in 29b). For instance:

(41) *pesími* (pessimist), *reáli* (realistic), *endocéntri* (endocentric), *aktívi* (active), *séksi* (sexy), *genéri* (generic), *universáli* (universal), *otonómi* (autonomous), *germáni* (Germanic), *pedánti* (pedant)

The stress does not change in the inflection of foreign adjectives or nouns with the *–i* ending. The feminine forms are always derived by the addition of *–t*, for example, *pesími-pesímit, séksi-séksit*, etc.

Historically, the *–i* ending was added to gentilic names denoting origin or religion, for example, *gil'adi* (from Gil'ad), *ḥiti* (from Het), *kna'ani* (from Canaan), *yehudi* (from Judea). Modern Hebrew continues to use this device for forming gentilic nouns and adjectives denoting people or

[37] R. W. Weiman, *Native and Foreign Elements*, p. 65.

features typical of a certain place, origin, or religion. Many of the resultant words are finally stressed. For instance:

(42) *sfaradi* (Sephardic), *aškenazi* (Ashkenazi), *polani* (Polish), *angli* (English), *carfati* (French), *rusi* (Russian), *nocri* (Christian), *italki* (Italian), *yevani* (Greek), etc.

These gentilic nouns take two feminine forms, *–iya* referring to the person, and *–t* referring to the feature, for example, *carfariya* (French woman) versus *carfatit* (French, adj.) as in *nešika carfatit* (French kiss). Place names like Sepharad, Ashkenaz, Yehuda, Yavan, etc. are attested in the Bible, and be their origin Hebrew or foreign, they follow the old Hebrew stress pattern in this respect. The word *sin*, which is also attested in the Bible, though, does not follow this tendency, perhaps because it is not perceived as related to modern China (44). Some modern gentilic names, although derived from foreign country names, follow the historical final stress patterns, while others do not. Compare the pairs in (43) to the lists in (41) and (42) above and to the list in (44).

(43) *germáni* (Germanic) – *germani* (German)
románi (Roman) – *romani* (Rumanian)
šémi (Semitic) – *šemi*[38] (nominal)

(44) *síni* (Chinese), *yapáni* (Japanese, person or feature), *holándi* (Dutch), *bélgi* (Belgian), *báski* (Basque), *meksikáni* (Mexican), *yugoslávi* (Yugoslavian)

One can argue that in (43) the distinction is retained for semantic reasons. Still, why are *angli*, *polani*, *rusi*, and *bulgari* stressed ultimately, whereas *síni*, *yapáni*, *holándi*, *báski*, *filipíni*, etc., penultimately? The latter forms fit the formation of nouns and adjectives of a foreign origin with *–i* ending, whereas the former ones that are stressed ultimately constitute the exceptions.[39]

Abstract nouns are commonly formed from loan words with the Hebrew *–ut* suffix in two primary ways: a) by adding it to the stems previously formed by *–i* (45), or directly to the base form with the ending *–iyut* (46); b) by adding it to stems previously formed by *–an* or *–ay* suffixes (47). The forms in (45) and (46) are not stressed ultimately, whereas those in (47) which have previously been formed according to the

[38] There is a tendency today to pronounce *šemi* (nominal) penultimately, as in *reshima šémit* (name list).

[39] See the discussions regarding this issue in H. Rosen, *Our Hebrew*, p. 236; B. Podolsky, "Stress as a Morphological Factor in Modern Hebrew," *Lešonénu* 45 (1981) 155–156 [Heb.]; O. Schwarzwald, "The Feminine Formation of Nouns with a Suffixed –i," *Lešonénu* 45 (1981) 319–320 [Heb.].

Hebrew stress rules, keep their ultimate stress. Therefore, their final stress cannot characterize their foreignness.

(45) *pesímiyut* (pessimism), *reáliyut* (realism), *aktíviyut* (activism), *kítšiyut* (kitsch)

(46) *šlúmperiyut* (untidiness [< *šlúmper*]), *fériyut* (fairness [< *fer*]), *kúteriyut* (constant complaints [< *kúter*]), *puštákiyut* (criminal-like behavior [< *puštak*])

(47) *fašlanut* (failure [< *fašlan*]), *banka'ut* (banking [< *bankay*]), *psantranut* (piano-playing office [< *psantran*]), *sandlarut* (shoemaking [< *sandlar*])

As in the case of the *–nik* ending, the forms in (46) with the *–iyut* ending keep the stress on a stable syllable of the stem, thus causing pre-pre-penultimate stress.

The discussion thus far demonstrates that the endings have a significant impact on the stress patterns of the words. Loan endings affect both Hebrew and loan stems in the foreign stress direction. Hebrew endings try to "convert" loan words and make them more Hebrew-like, with only partial success. This is why, morphologically, the stress patterns of inflected and derived forms can contribute to understanding the degree of foreignness.

4.2.3. More on stress inflectional patterns of loan words:

Loan words take inflectional Hebrew suffixes for number and gender, as in (33) and (48) above for number and in (49) for gender. The only possible feminine suffix for loan words is *–it*, though it varies in Hebrew words.[40] The stress of the loan words does not fall on the suffixes, a characteristic which marks their foreignness as well.

(48) Masculine: *student-studéntim* (student-s), *mazoxist-mazoxístim* (masochist-s), *protokol-protokólim* (protocol-s), *sénator~senátor-senatórim~senátorim* (senator-s), *sanegor-sanegórim* (defence lawyer-s)

Feminine: *protékcya-protékcyot* (protection-s), *prográma-prográmot* (program-s), *etimológya-etimológyot* (etymology-ies), *téma-témot* (theme-s)

[40] See O. (Rodrigue) Schwarzwald, "Feminine Formation in Modern Hebrew," *HAR* 6 (1982) 153–178. The *–it* ending also served for adverbial formation. It is also stressed penultimately in loan words, e.g., *telefónit, lakónit, otomátit, mexánit* (by phone, shortly, automatically, mechanically).

(49) *student-studéntit* (student; m., f.), *mazoxist-mazoxístit* (masochist; m., f.), *sénator~senátor-senatórit~senátorit* (senator; m., f.), *barbar-barbárit* (uncivilized, barbarian; m., f.), *psixopat-psixopátit* (psychopath; m., f.), *profésor-profésotit* (professor; m., f.), *kategor-kategórit* (prosecutor-s; m., f.)

In this respect one could support the difference between *Lehnwörter* and *Fremdwörter* as presented above in the introduction. *Lehnwörter* have these stressed suffixes like Hebrew original words, as in (50), whereas *Fremdwörter* retain the stress in one of the stem syllables.

(50) *sandlar-sandlarit-sandlarim-sandlariyot* (cobbler; m., f., pl. m., pl. f.), *baron-baronit-baronim-baroniyot* (baron; m., f., pl. m., pl. f.), *dukas-dukasit-dukasim-dukasiyot* (duke; m., f., pl. m., pl. f.), *gizbar-gizbarit-gizbarim-gizbariyot* (treasurer; m., f., pl. m., pl. f.)

All of the feminine forms in (50) take the *–it* ending, although Hebrew words with a similar syllabic structure would yield **sandléret*, **barona*, **dukéset*, **gizbéret~*gizbara* (cf. *nivdélet*, *xamora*, *mušétet*, *nixbédet~nixbada* [disconnected, ass, floated, honored]). The ending *–it*, therefore, hints to their foreign origin (in addition to the consonant cluster in *sandlar*).

It should be observed, though, that the *Lehnwörter - Fremdwörter* distinction explains some of the differences in stress. Historical loan words may take final stress in the inflection, just like original Hebrew words, but not necessarily so, as the *kategor* and *sanegor* examples in (48) and (49) show. Although borrowed in the Mishnaic period, just like *sandlar*, the stress remains on the stem and does not shift to the inflectional suffixes.

A few modern loans ending in *–a* or *–e*, as well as a few old loans without these endings, take the *–a'ot* plural endings, which were typical of Aramaic loans. For instance:

(51) *univérsita-universita'ot* (university-ies), *pékale-pekla'ot* (*~pékalax*) (bag-s), *fášla-fašla'ot* (*~fášlot*) (mischief-s), *pádla-padla'ot* (*~pádlot*) (heavy lazy person), *te'atron-te'atra'ot* (*~te'atrónim*) (theatre-s), *vilon-vila'ot* (*~vilonot*) (curtain-s)

The final stress on the *–a'ot* ending serves in this case as a foreign marker.[41] Alternatively, when the regular suffixes are used, the stress stays on the stem, as in all foreign words.

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[41] Shlomo Izre'el pointed out that *–a'ot* ending occurs in post-biblical plural formations of nouns with third radical *y/w*, e.g. *maške-maška'ot* (drink-s), *mikve-mikva'ot* (bath-s). This is a special morphological category, and its Hebrew characterization is apparent.

It has already been noted that foreign words do not follow the stress shift rule in inflection and derivation. Loan words follow certain rules of their own regarding stress. The stress is constant on a stem syllable in the majority of loans. It stays in the same position and does not move with the addition of the plural suffixes. Consequently, it moves one syllable to the left from the end of the word with the addition of the plural *–im* or *–iyot* suffix (52–54). It stays on the same stem syllable when the final *-a* syllable is replaced by the *–ot* plural ending (55).

(52) Ultimate stress becomes penultimate: *tik-tíkim* (tick), bank-*bánkim* (bank-s), *klip-klípim* (clip-s), *blof-blófim* (bluff-s), *butik-butíkim* (boutique-s), *panel-panélim* (small-side-tiles next to the floor)

(53) Penultimate stress becomes pre-penultimate: *tráktor-tráktorim* (tractor-s), *xúmus-xúmusim* (chick-pea-s), *témbel-témbelim* (fool-s), *pánel-pánelim* (panel-s), *senátor-senátorim* (senator-s; cf. 56)

(54) Pre-penultimate stress becomes pre-pre-penultimate (feminine nouns): *šlúmperit-šlúmperiyot* (untidy person; f. sg., f. pl.) (< *šlúmper*), *kúterit-kúteriyot* (constant complainer; f. sg., f. pl.) (< *kúter*), *senátorit-senátoriyot* (senator; f. sg., f. pl.)

(55) Penultimate or pre-penultimate stress of (feminine) nouns ending in *–a* keep the same stress: *dzŭla-dzúlot* (marble-s), *banána-banánot* (banana), *móda-módot* (fashion), *fízika-fízikot* (physics-s), *álgebra-álgebrot* (algebra-s)

Nevertheless, some masculine loan words which are stressed pre-penultimately in the singular form do not retain the stem stress in the plural form. The stress switches in the plural forms to the penultimate syllable, rather than to the expected Hebrew suffix. Thus, in spite of the stress movement towards the end of the word, the foreign stress pattern is still retained. For instance,

(56) *ótobus-otobúsim* (bus-s), *éskimo(s)-eskimósim* (Eskimo), *télefon-telefónim* (telephone), *sénator-senatórim* (senator-s)

The "senator" example has been mentioned several times here to demonstrate stress alternations. If pronounced *senátor*, it follows the steady stress pattern, as in (53). If pronounced *sénator*, the stress shifts in the plural, as in (56). The feminine formation is the same, either *senátorit* from *senátor*, or *senatórit* from *sénator*, just like the plural formation. In this way, the stress is not extremely far from the end of the word, but it is far enough to be considered foreign in Hebrew.[42]

[42] For further discussions regarding Hebrew stress patterns, see B. Podolsky, "The Problem of Word Accent in Modern Hebrew," in *Proceedings of the Fifth International Hamito-Semitic Congress*, ed. H. G.

4.3 Orphanhood:

Finally, the orphanhood feature is of major importance in the description of the morphological criterion. It involves isolation of a form within the morphological Hebrew system. Consider these loan words:

(57) *muxtar* (selected representative of a village), *mulat* (mulatto), *pase* (passe, past), *pire* (puree)

They are all constructed exactly like Hebrew words; nevertheless, their "orphanhood," or isolation in the morphological system, makes them less Hebrew-like, hence foreign.

The word *muxtar*, a loan from Arabic, is built exactly like Hebrew *muxnas* (entered, adj.), *muxzar* (returned), etc. The word *muxtar*, however, is an orphan in the morphological system, whereas the others have many "family relatives": *hixnis* (he entered), *huxnas* (he was entered), *hexzir* (he returned), *huxzar* (was returned), etc.[43] The same applies to *mulat*. It is built like *mucat* (lit), *munax* (laid; term), but it has no other related words in the system except for the plural forms, which support its foreignness (*mulátim-mulátiyot*). And although *pase* looks like *yafe* (nice), and *pire* like *nice* (fight), they are perceived as foreign because of their orphanhood.

The same principle applies to the words mentioned in (26) and (27) above, which I repeat here:

(26) *baron* (baron), *dukas* (duke), *radar* (radar; cf. Hebrew *xalon* [window], *šuman* [fat], or *matar* [rain])

(27) *méter* (metre, length size), *éter* (ether), *šémi* (Semitic; cf. Hebrew *mélex* [king], *béxi* [cry])

Although they are syllabically constructed like Hebrew words, they are orphans in the morphological system. The word *méter*, for instance, has no family. Its plural betrays its foreignness, too, being *métrim* rather than **metarim* like *melaxim* (kings). *Šémi* is different from *béxi* in its form class, in its basic formation, and in its relation to other words. *Šémi* is an adjective derived linearly from the noun *Šem*, while *béxi* is a "segolate" noun from the root *bky* and is related to words like *baxa–yivke* (he cried-will cry), *bxiya* (crying), *bika* (mourned), etc.

Mukarovsky (Wien: Unstitute für Afrikanistik und Agyptologie des Universität Wien, 1991); I. Mel'čuk and B. Podolsky, "Stress in Modern Hebrew Nominal Inflection," *Theoretical Linguistics* 22 (1996) 155–194; O. (Rodrigue) Schwarzwald, "Stress Shifts in Modern Hebrew," in *Studies on Hebrew and Other Semitic Languages Presented to Chaim Rabin*, eds. M. Goshen-Gottstein, S. Morag, and S. Kogut (Heb.; Jerusalem: Academon, 1991), pp. 393–414; O. Bat-El, "Parasitic Metrification in the Modern Hebrew Stress System," *The Linguistic Review* 10 (1993) 189–210.

[43] Their plural forms provide further evidence, as in *muxtárim*.

5. CONCLUSION

The most important means for recognizing the foreignness of words are:

1. Foreign consonants and allophonic structure (2.1–2.2)
2. Violation of Hebrew consonant clusters (2.3)
3. Violation of Hebrew stress patterns in isolation (2.4), as well as in inflection and derivation (4.2)
4. Word length and deviation from syllabic Hebrew word structure (3)
5. Word class (4.1)
6. The endings *–a'ot* in the plural[44] and *–it* in the feminine (4.2.3)
7. Orphanhood (4.3)

Some aspects of the generalizations in 1–3 and 5 have been described previously by Weiman. He discusses the following points:[45] a) the foreign phonemes *ž*, *tš*, and *dž* (not *w*; 2.1); b) the phonemic distribution of initial *f*, final *p* and *b* (2.2), clusters of more than two-consonants (2.3.1; 2.3.2), final clusters other than *Ct* (2.3.3), and certain initial clusters like *sp*, *sb* (2.3.1); c) accentuation that is three or four syllables from the end (2.4; 3; 4.2); d) the inability of the words to take possessive pronouns or derivational affixes (4.2), as well as their non-occurrence in the construct state, and; e) the non application of certain morphophonemic alternations, such as the prefixed particles, and the violation of the Spirantization Rule in certain contexts (cf. *beprag* [in Prague], from *be+prag*) to *bifrat* (in particular, *be+prat* [detail]).

Changes that occurred in modern Hebrew since 1950, as well as certain inaccuracies in Weiman's data (as justifiably criticized by Rosen in *Tarbiz*), may account for some of the differences in his analysis from the one presented here. Weiman could not know about loan phonemic *w* in modern Hebrew. Neither was he aware of the extensive derivational crossing of both foreign and Hebrew suffixes to foreign and Hebrew stems. In addition, although normatively forbidden, there is a possessive suffixation and a construct state formation of loan words, as in (58).

(58) *kursey yesod* (elementary courses), *univérsitat bar ilan* (Bar Ilan University), *profesorénu* (our professor [ironically]), *karyérat hamisxak* (the acting career), *transformácyat hasavil* (the passive transformation), *téxnikat hacvi'a* (the painting technique), *telefono* (his phone)

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[44] Except for the plural of singular nouns structured *maCCe* or *miCCe*, see n. 41.

[45] I have noted in parentheses the sections in the present paper which deal with the phenomena.

Moreover, point e) in his formulation does not hold for modern Hebrew, as the prefixed particles are morphophonemically unified into *be–le–*, *ve–*, *ke–* with only minor alternations. The normative forms are retained today only in frequently used fossilized expressions, such as *uvxen* (well; historically from *ve+be+ken*), *biglal* (because of), *bifrat* (particularly; from *be+glal*, *be+prat*). Forms like *bepratim* (in details), and *vekxula* (and blue, f.) are commonly used without any vowel change or spirantization. Therefore, the claim that the prefixed vowel change and the Spirantization Rule applies to Hebrew words but not to loans is certainly not a linguistic criterion for the differentiation between these types of words in modern Hebrew.[46]

Furthermore, many of the features regarding inflectional patterns (e.g., *–it* for feminine; 4.2.2, 4.2.3), the syllabic structures (3) and the uniqueness of the foreign stress patterns (2.4; 4.2) were unknown or unobserved by Weiman. This paper not only focuses on all of the factors involved in modern Hebrew foreign words, but it can account for the distinction between either foreign or Hebrew elements.

Let us turn now to the question presented in the introduction above regarding the foreign words' psychological reality. Why are original Hebrew words sometimes perceived as loans, whereas clear loans may be perceived as original Hebrew words? I am making here only a first attempt at this distinction, and I admit that the matter is too complex and broad to be resolved on the linguistic criteria alone. An empirical study on the psychological perception of foreign words should be conducted in order to support the attempt made here.

A speaker who feels that a word such as *hel* (cardamon) is foreign, might ask for *coffee with hell* in an American oriental store, to the amazement of the owner (personal experience; the source language in this case is Arabic). The reason the word *hel* is perceived as a foreign one is its orphanhood in the system, no matter what its source may be.

Why is the word *tupí* (drum-like shape) perceived as foreign in *ekdax túpi* (revolver) although it is a completely indigenous Hebrew word, derived from *tof* (drum)? Not only is the stress assigned to it on the penultimate syllable, but also it is often spelled with a *tet*, the commonly used letter for loan words, rather than with a *tav*. It is perceived as foreign because somehow it was associated with other foreign ammunitions, *ekdax*

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[46] M. Ephratt, "*Bk"p* Noun Initially After a Prefixed Particle," *Lešonénu* 45 (1981) 40–55 [Heb.]; O. (Rodrigue) Schwarzwald, "Markedness Relations in the Pronunciation of the Prefixed Particles in Modern Hebrew," *AfroAsiatic Linguistics* 9:2 (1984) 73–86.

beréta (Barretta revolver), *rove tšéxi* (Czechoslovakian rifle), etc. The stress assignment on the penultimate syllable is a symptom of its foreign feel. Also, Hebrew *zarbuvit* (spout [of kettle]) might sound non-Hebrew because it is a multi-syllabic orphan word. On the other hand, the loan words *diklum* (oral citation) and *tirpud* (being torpedoed) sound Hebrew because they are totally assimilated in the verbal and nominal systems. Words like *špáxtel* (spatula), *sféra* (sphere), *šlox* (untidy person), *tšupar* (reward), *žaket* (jacket), and *píta* (pita pocket bread), are justifiably considered to be loans in Hebrew, because of their phonological and morphological structure. Words like *sandal* (sandal) or *letarped* (to torpedo), *pardes* (orchard), *'aklim* (climate), and many others are not always viewed as foreign, mainly because they are part of families of related words in the system, such as *sandlar* (shoemaker), *lesandel* (to sandal); *pardesan* (citrus grower), *pardesanut* (citruculture), *lehit'aklem* (to be acclimatized), *hit'aklemut* (acclimatization), etc.[47]

On the other hand, one might ask why words like *lamádeti* (I studied), *hitmádeta* (you [sg. m.] persisted), *xitáteta* (you [sg. m.] poked), *sirtáteti* (I drew), being multisyllabic and having pre-penultimate stress, are not perceived as foreign (see section 2.4). The reason is that they are realized in established verb patterns (word class criterion, 4.1). Verbs are perceived as foreign less than nouns, adjectives, exclamations or curses because they fit into the morphological system of Hebrew. Verbs absorb words systematically into the conjugational and stress patterns with no exception. Therefore, *bilgánti* (I messed), *tilfánnu* (we called), *metarpedím* (torpedo; pl. m. pres.), etc., behave like any other original Hebrew word, as does *histalbátetem* (you [pl.] relaxed). If perceived as foreign, it is only because of the speakers' awareness of the clear nominal loans *balagan*, *télefon*, *torpédo*, and *stálbet*.

This paper has offered the linguistic criteria for the identification of foreign words in Hebrew. The criteria help in understanding the perception of words as native Hebrew words or as foreign loans. A further study, which is beyond the scope of this paper, is required for determining which of the criteria is stronger in the perception of foreignness.

[47] One of the reviewers noted that a word like *maca* (matzah, unleavened bread), is an orphan, though it is regarded as an original Hebrew word. According to some, *maṣa* is an ancient loan word from Greek. This fact supports the linguistic criteria—which does not necessarily coincide with the speaker's awareness. Its orphanhood marks its linguistic foreignness.

6. ADDENDUM

A further observation is required at this point regarding original Hebrew words like those presented in (59):

(59) a. *glída* (ice-cream), *búba* (sweety)
b. *kláfim* (kids' play-cards), *ríšon* (Rishon LeZion, place name), *'ora* (Ora), *bráxa* (Bracha person's name) (cf. *klafim* [cards], *rišon* [first], *'ora* [light], *braxa* [blessing])
c. *'árba* (four), *kóva* (hat), *šmóne* (eight), *'écba* (finger)
d. *káma* (how many), *'é(y)ze* (which), *'é(y)fo* (where), *'afílu* (even)

In these cases, the stress is penultimate in spite of their non-foreign nature. The examples in (59a) represent nouns from children's games. Those in (59b) include game words or proper nouns which stand in opposition to regular words stressed ultimately. The words in (59c) are considered non-normative, in spite of their popular use among speakers, and those in (59d) are adverbials and pronouns with non-steady stress patterns.[48] All the words in (59) constitute a small number and are no doubt lexically marked.

Rosen claims that, in general, the rate of foreign signs in nouns as presented in (59) decreases with time while the regular behavior of modern Hebrew nouns increases.[49] He distinguishes between several layers in the lexicon: a. proper nouns; b. foreign lexicon; c. learned lexicon; d. substandard lexicon; e. semi-foreign or semi-learned lexicon; f. informal family-discourse lexicon; g. general lexicon.

Layers a-f of the modern Hebrew lexicon are subject to the same deviations in all of the three criteria described above as characterizing loan words. In fact, the layers are not distinctly separate. A lot of what is considered "learned" lexicon belongs to Aramaic and is therefore foreign (e.g., *asmáxta* [source], pl. *asmáxtot~asmaxta'ot*, *pamálya* [retinue], pl. *pamályot*). Some of the loans are substandard (*kalavása* [pumpkin head]), while others are learned (*materyáli* [material]). Many of the Hebrew original proper nouns came back to modern Hebrew through their use in other languages such as Yiddish or Judeo-Arabic, a fact which explains their "foreign" behavior. Examples such as those presented in (59) fit the loan criteria; however, they are sparse in the Hebrew system. The number of

[48] See O. Schwarzwald, "Stress Shifts in Modern Hebrew," pp. 400–407.
[49] H. B. Rosen, *Our Hebrew*, pp. 236–238.

loans makes it the second largest class in the Hebrew lexicon, immediately following the general Hebrew class.[50]

Thus, when one observes a non-regular phonological or syllabic structure, an unusual stress pattern in inflection or derivation, or isolation of a word within the morphological system of the language, one might plausibly suspect, with a relatively low chance of error, that the word is in fact a foreign word.

[50] In D. Cohen-Gross' study (fn. 26) of modern Hebrew syllablic structure, it has been found that only 6.4% of a sample of almost 17,000 nouns and adjectives in modern Hebrew is of foreign origin, based on Even-Shoshan's *Dictionary* (Heb.; Jerusalem: Kiryat Sefer, 1970). Considering that in Even Shoshan's dictionary old loans have not been marked as foreign words, it is clear that the rate of loan/ foreign lexical component is much larger than 6.4%.