Phonological Variation in Spoken Hebrew

Except for Standard vs. Arabicized Israeli Hebrew (see Blanc 1964), one can hardly speak of dialects within contemporary spoken Hebrew. Thus in this chapter, the discussion on phonological variation in spoken Hebrew is restricted to variation in style. Attention is given mostly to speech rate and degree of casualness, which constitute a major cause of phonetic variability in any particular dialect.

"Informal speech" is often identified with "fast speech," but speech style is not necessarily the same as speech rate, even though both may involve similar phonological phenomena. "Fast speech" is usually associated with reduction and assimilation phenomena, but those are not necessarily the consequences of speech rate. Casual speech style is often associated with the same manifestations. The emotional content and a variety of psychological and sociological factors appear to determine the degree of attention one pays to one's own speech. Increased attention ascertains that articulatory goals are attained, whereas decreased attention allows natural reduction and assimilation (the "ease of articulation" phenomenon). But decreased attention does not preclude increase in speech rate: Often, one's natural rate of speech in informal contexts is faster than it is in more formal situations, and the faster rate may, in itself, contribute to reduction. The reason is that with less time, the inherently reducible elements are more likely to be
affected, again owing to “ease of articulation” considerations. Thus, in informal speech, either casual speech style or naturally rapid speech rate may independently lead to reduction and assimilation. At the same time, both style and rate may converge to produce the same effect, for reasons of “ease of articulation.” Thus, Shockey (1974) shows that:

(a) Given two similar utterances at the same rate, the relaxed/conversational one is more reduced, i.e., more reduction and assimilation processes tend to apply in the relaxed style; and

(b) Given two similar utterances, one (normally the relaxed/conversational) at relatively faster rate, the faster one will be relatively more reduced.

In other words, style may be independent of rate, i.e., one may reduce more without necessarily speaking fast, but at the same time, reduction does tend to correlate with tempo.

Several examples of the processes responsible for phonetic variation in Israeli Hebrew follow. Mostly, they describe variation as a function of rate of speech and degree of attention.

**Vowel Elision**

**Reduction of e**

The “minimal” vowel e may be elided when it is no longer required to correct violations in the sonority scale. To understand why such an e emerges at all, we need to consider the sonority hierarchy—or its inverse, the consonantal strength hierarchy. Defined simply, sonority may be regarded as the amount of energy audibly released during the production of a phonological segment, and consonantal strength as the inaudible energy spent on the production process itself. Thus, a is the most sonorant segment in Hebrew: The vocal tract is wide open, with minimal obstruction to the air column, and all the energy created is audibly released. A consonant such as t, on the other hand, is hardly audible, since most of the energy involved in its production is spent on the closure of the vocal tract, and very little that is audible actually comes out. It is the vowel following t that projects most of the audible energy emitted. Thus, t is one of the “strongest” consonants, but at the same time one of the least sonorant.

If we arrange the phonological inventory by increasing sonority (or decreasing consonantal strength), we start with stops/plosives such as t, and proceed with fricatives, e.g., f, where the closure is incomplete. Next come nasals such as m, followed by liquids, such as l, where the obstruction is considerably weaker, then semi-vowels such as y, where the closure is minimal. With vowels, there is no obstruction at all, but there can be aperture narrowing: The amount of energy allowed to come out is determined by degree of opening: high vowels are less sonorant than mid ones, mid vowels less sonorant than low ones.

The sonority concept is important because it enables us to define the structure of the syllable in relation to its components. A syllable has an optional consonantal onset, an obligatory sonority peak, and an optional consonantal coda. The sonority peak is normally a vowel, but may also constitute a syllabic consonant functioning as a sonority peak, as in the case of n in [bntn] ‘button.’ The syllable must be structured such that sonority gradually increases from the beginning of the onset to the sonority peak, and gradually decreases from the peak towards the end of the coda. For example, in the word *blant* ‘blunt,’ l is more sonorant than b, and a is the peak. In the coda, t is less sonorant than n. The consonants, either in the onset or in the coda, cannot be ordered in any other way: neither *bltn*, *lbnt* or *bltn* can be pronounced as a single syllable. If we wish to maintain all consonants in the *lbtn* order, for instance, we must either split an impermissible sequence with a vowel, e.g., le-bx-ten, or syllabify the misplaced sonorant consonants, making each of them the nucleus of a separate syllable, e.g., l-bx-tn. This is why an underlying, bi-syllabic word, for example *msi-bá* ‘party,’ is realized as tri-syllabic mè-si-bá. Here are a few similar illustrations:

(1) yê-la-dim ‘children’ (cf. klav-im ‘dogs’)
   lê-va-ná ‘white, f.s.’ (cf. kia-ná ‘small, f.s.’)
   nê-ta-má ‘soul’ (cf. bra-xá ‘blessing’)
   mè-ti-xá ‘practical joke’ (cf. bdi-xá ‘joke’)
   ré-ti-má ‘a list’ (cf. sì-má ‘filling’)

Speakers of English should realize that in Hebrew, violations of the sonority hierarchy cannot be resolved by syllabifying sonorant consonants, as in English [bx-tn] ‘button.’ Israelis can only split impermissible sequences with a vowel, which accounts, for instance, for:

(2) film > fi-lim or fi-lem hercl ‘Herald’ > hér-cel

When the improperly placed sonorant consonant is preceded by a vowel at the end of a proclitic (like a ‘the,’ ba ‘in the,’ etc.) or a preceding word in
connected speech, e-insertion is no longer obligatory. The absolute need for it is removed, since that preceding vowel may attract the sonorant consonant to its coda, causing resyllabification. e may thus be optionally deleted in such environments (see Bolozky 1991):

(3) mé-si-bá ‘party’
    a-mé-si-bá ‘the party’ – ám-si-bá
yé-la-dím ‘children’
    a-yé-la-dím ‘the children’ – áy-la-dím
šlo-bá ye-la-dím ‘three children’ – tšlo-tšy-la-dím
šlo-bá ye-la-dím ‘three children’ – tšlo-tšy-la-dím
še-va-ná ‘white, f.s.’
    xul-cá le-va-ná ‘white shirt’ – xul-cá-ša-ná
ně-si-xá ‘princess’
    a-ně-si-xá ‘the princess’ – an-si-xá
rě-si-má ‘a list’
    a-rě-si-má ‘the list’ – ār-si-má

e is also likely to be elided in affixes in casual/fast speech. Affixes are more amenable to reduction than stems are. Their high frequency makes them easy to recover even from minimal phonetic residues (Bolozky 1977, 1982, 1999; Bolozky and Schwarzwald 1990), and they are easily accessible to the addressee (Ariel 1990, 1998), since short, minimally informative forms code mental entities of a ready accessibility. Thus:

(4) u méšamé ivrit ‘he teaches Hebrew’ – unlamédivotrit
    i tšélamé otó ivrit ‘she will teach him Hebrew’ – itšélamotšivotrit
šěv be-tšěhet ‘sit (down) quietly!’ – šěv besheket – čebešket
ščasdi mišyát et a-xéder ‘tidy up your room immediately!’ – caudrimiyatšasdečer
i sogeret et a-delet ‘she is closing the door’ – isogératšadelet
bá lexă latalax le-séret ‘do you feel like going to a movie?’ – báxalaléxetlešéret
ani roce še-tavo a-erev ‘I’d like you to come tonight’ – aniroča šavovacor

Occasionally, e may be deleted in stems as well, provided that they are frequent enough:

(5) • raita kvar et a-séret a-ze? ‘have you already seen this movie?’
    ~ raitakovtšaritxetze
    vs. raita kvar et a-kélem a-ze? ‘have you already seen this spot?’
    ~ raitakovčakelxemzex

Normally, Hebrew does not allow intra-morphemic geminates:

(6) • od ló raiti zaledán kacz ‘I’ve never seen such a glutton’
    vs. od ló raiti takrán kacz ‘I’ve never seen such a liar’
• i šáret šalšós kosót ‘she drank three glasses’
    vs. i kánta šalšós kosót ‘she bought three glasses’
• i xágéga et yóm a-ulédet šelá etmol ‘she celebrated her birthday yesterday’
    vs. i xágéga še-ú taxxá še-yóm a-ulédet šelá ayóm ‘she thought that he forgot it is her birthday today’

In rapid/casual speech, however, e may be elided even when it is normally maintained to prevent the occurrence of such geminates:

(7) • od ló raiti zaledán kacz ‘I’ve never seen such a glutton’ – odlóráitizaliánkæz
• i šáret šalšós kosót ‘she drank three glasses’ – šalšós šalšós kosót
• i xágéga et yóm a-ulédet šelá etmol ‘she celebrated her birthday yesterday’
    ~ izogáyarulémitédetšelamón

e from cere is usually not amenable to elision, as in *aššrutim ‘the services’ or *maxšá ‘mask,’ either because the CeCuC and maCeCa patterns are marked as exceptions, or because of connection to related miskalim such as CiCuC (kibuc ‘kibbutz,’ tipul ‘treatment,’ etc.) and meCiCa (mesib ‘party,’ megila ‘scroll,’ etc.), respectively. However, such e does reduce within a frequent affix, as in anló mvin:

(8) Sěrūtim ‘services’
    a-sěrūtim ‘the services’ – *aššrutim
těrūcim ‘excuses’
    a-těrūcim ‘the excuses’ – *aššrutim
maššá ‘mask’ – *maššá
    ~ maššá ‘mask’ – *maššá
mágěfá ‘plague’

but:
ani ló mvin af míla míma te-hu omér ‘I don’t understand a word of what he is saying’ – anló mvin af míla mimášumér

An unstressed e is often assimilated into an immediately following unstressed vowel that has resulted from the loss of a glottal or pharyngeal consonant:

(9) těšónim ‘watches’ > šěónim > šóonim > šo:nim (> Šonim)
nešumim ‘speeches’ > nešumim > něumim > nu:im > nu:mim (> numim)
měhúm ‘humil’ > míshúm > mišum > mu:um (> muma)
šěšara ‘storm’ > šéšara > šášara > sa:šara (> sara)
běšydvá ‘problems’ > běyot > běyot > ba:yot > ba:yot
šěšudá ‘document’ > šéšudá > šešudá > ta:du > tu:du (> tuda)
měširim ‘give light, m. pl.’ > měširim > mišir > mi:mim > mi:rim (> mirim)
šišumim ‘boredom’ > šišumim > Sišumim (> Sišum)

Within the stem, the short form at the end of the derivation is placed in brackets, since for most people, at least a residue of some extra vowel length is maintained. It suggests that a trace of the lost consonant is preserved in lexical items. But there are exceptions. Some non-native speakers of European origin never maintain such a trace, not even within the stem. Below are some illustrations (Shimon Peres, December 1999, on a TV talk show on negotiations with Syria):

[Phonological and Morphological Variation in Spoken Hebrew]
In affixes, however, a short vowel is a common option (again, owing to the high frequency, easy recoverability and accessibility of affixes):

(11) leasbir 'to explain' > laasbir > lasbir
leaxnis 'to bring in' > laxnis
léapil 'to drop (tr.)' > lapil
léarin 'to pick up, lift' > larin
likanés 'to enter' > likanés
leizcuor 'to watch out' > lizcuor > lizcer
letlabéts 'to get dressed' > liitlabéts > liitlabés
leitragéz 'to get angry' > liitragéz > liitragéz

(12) Soikanés 'let him enter' > tiikanés > tkikanés
Stitlabéts 'let him get dressed' > Stitlabéts > Stitlabés
Seipol 'let him fall' > sipol > sipol
Seiyu 'let them be' > siyu > siyu > siu

When shortening occurs (again, usually in affixes), it of course also applies to any sequence of two identical vowels resulting from the loss of a glottal or pharyngeal consonant:

(13) tóvor (you will) pass' > tavor > tavór
nástavor 'we will pass' > nazor > nazor
hoševir 'he moved, transferred (tr.)' > e:vir > evir
hošovir 'he was moved/transferred' > o:vir > ovir

Reduction of Other Vowels

i may be elided in casual/fast speech too, most commonly also in affixes:

(14) • tškevi bešéket 'lie (down) f.s. quietly' - tškevi bešéket - čkevi bešéket - škebiščéket
• tšgovir et adélét 'close the door!' - tšgovir tadelet - čgo tadelet - šgočtadelet
• tštšaké mipó 'get out of here!' - tštšaké mipó - čtšakémipó - štšakémipó
• tišaké tó 'get in touch with him!' - tišaké tó - čtšakátoró
• tšzásir miména 'beware of her!' - čdzármiména - zaýrmiména
• tiškansí abóyta 'get f.s. into the house!' - tiškansí abóyta - kasniabóyta

These examples are second person future forms functioning as imperatives. Bolozky (1979) shows that what appears to be a return to the normative imperative in colloquial Hebrew, is actually the future used imperatively, with its prefix reduced or "chopped off." The motivation appears to be the tendency in order to shorten to increase the urgency of the command. That these are reduced future forms used as imperatives, and not a return to the normative imperative, is indicated by the fact that the suffixed forms are not of the normative CiCCV form (e.g., šťixvi 'lie down f.s.'), but rather C CeCV (šťkevi), which is clearly a shortened tČCeCV (tškevi).

i is hardly ever reduced, however, in regular lexical items:

(15) • atšinokó 'the babies' > atšinokó, ā-strim 'the songs/poems' > āstrim.

The other three vowels, u, o and a, are generally more resistant to casual deletion. o may be reduced in clitics and in some function words, as in oto/ota/otam 'him/her/them.'

(16) hu kibél oto miyád 'he received him immediately' > u kibél oto miyád.

Reduction of o also occurs in common lexical items, such as rocé 'want,' which owing to their high frequency are easy to recover from their reduced form:

(17) ani ló rocé ledabér itó 'I don't want to speak to him' — an ló rocé ldabér itó.

In general, however, rounded vowels are more resistant to reduction. It is hard to determine whether or not this resistance is inherent, since they rarely occur in affixes. u is rarely elided:

(18) ani ló muxaná 'I am not ready' — an(l) ló ???mxaná.

This example may be used to prove that u is inherently resistant to deletion, particularly since the fact that x is lower in sonority than m would have favored deletion (Vennemann's 1988 "Contact Law" suggests that at the C₁S₂ contact point between two syllables, the preferred configuration is C₂ lower in sonority than C₁). There are, however, few such cases in affixes, which makes such a claim difficult to prove.

a is reducible in some clitics/function words, like atalatem 'you,' e.g.,

(19) ata mevin oti 'do you understand me?' — ta mvin oti,

and occasionally in affixes:

(20) ani ménatáxat et hánispát aze káxa 'I (f.) analyze this sentence thus' — ani ménatáxat et a mispát aze káxa.
and occasionally in affixes:

(20)  ani mōnatāt et hāmitṣāt aze kāxa ‘I (f.) analyze this sentence thus’ ~ ani mōnatāt et a mitṣāt aze kāxa.

Despite these examples, a is less reducible than either i or e. This becomes clear by comparing reducibility in similar, potentially-reducible environments. a is resistant to a number of casual reduction processes.

(i) Its elision is blocked in imperative reduction, as in takām ‘get up!’:

(21)  takām mīyād ‘get up immediately!’ ≥ *tkām mīyād.

(ii) It is less likely to be affected by post-stress deletion. For example, pērx ‘flower’ in the following:

(22)  tēn lē ḫariḵa et hapērxa ḫezē > ‘let me smell this flower’ – tēn lē ḫariḵa ta ??pērxa ḫezē,

is less likely to become pērx in casual speech than sérēt ‘movie’ is to be reduced to serēt in a similar situation.

(iii) It is unaffected by (substandard) hifīl centralization of prefixal i to e, e.g.,

(23)  *hesbir ‘he explained’ > hesbir  hidgīt ‘emphasized’ > hedgīt,
   but not in:
   * masbir ‘explain’ > *mesbir  or maḥdīt ‘emphasize’ > *medgīt.

Bolozky (1999a) describes hifīl centralization in some detail. It is partly related to the hiCiC > heCiC and heCiC > hiCiC shifts, as in the following:

(24)  hipīl ‘he dropped (tr.)’ > hepīl
    maqīl ‘drop (tr.)’ > mepīl
    hīqīt ‘he presented’ > hēqīt
    maqīt ‘present’ > mēqīt
    ḫīvīn ‘he understood’ > ḫīvīn
    hekim ‘raised’ > hīkim
    hinīqīt ‘he led’ ~ inīq ~ enīq (but *meqīgt)
    hidqīt ‘he worried (tr.)’ ~ idiq ~ ediq (but *medqīgt).

The hipīl > hepīl process is clearly in analogy with heCiC, the more common pattern. The opposite process of shifting e to i, as in evāntī ‘I understood’ > ivāntī, is definitely less common. The hifīl > hefīl

hekim ‘raised’ class. By now it includes transformed hipīl ‘dropped’ > hepīl type cases, and heCiC forms resulting from loss of ‘gutturals,’ as in hinīqīt ‘he led’ > henīq, hidqīt ‘he worried (tr.)’ > hedqīt (the last shift is still incomplete, i.e., no *medqīgt.) The vowel change does not affect hīpaqīt, since i is maintained throughout the paradigm, and thus more stable. It thus appears that hifīl > hefīl is due a combination of morphology and i > e laxing. [u > o in muqāmad ‘be presented; candidate’ > moqāmad is not equivalent, and certainly not as natural—because u is a transparent passive marker, and therefore resistant to reduction.] The fact that centralization to e does not affect a—*mesbir is impossible—constitutes another piece of evidence for the stability of a compared with e or i.

Reduction or centralization of the hifīl > hefīl type is also found in (probably) the cfōnī ‘northern’ speech type, characteristic of North Tel Aviv and neighboring middle- and upper-class neighborhoods. It is not clear whether this is an established sub-dialect, particularly of non-working-class non-drōmi ‘southern’ young people, stronger among girls than among boys and among gay men, or just a stylistic register. It usually suggests “lightness” of articulation, with relatively narrow vocal aperture, and in addition to reduction, is also characterized by affrication, almost British-like:

(25)  tivdeki lī ‘check for me’ > t’vodeki lī
    xamēš šāt ‘five hours’ > xamēš šāt
    xawerdī ‘girlfriends!’ > xawerdī
    maxnāṣām ‘pants’ > maxnāṣām
    (h)ulānī ‘we went’ > (h)자동
    kānitī ‘I bought’ > kōnitī
    kātom ‘orange’ > kām
    tū bānānā ‘strawberry-banana’ > t’bānānā

Possible “Casual Speech” Reduction in the Bible

Many of the vowel reduction/elision processes above appear to have had precedents in Biblical Hebrew. Some reduced variants may have resulted from conflation of different sources, each of which was “too sacred to discard” when the Bible was codified. It is also possible, however, that many of them reflect stylistic and register variation, and that others may have resulted from the effect of casual reduction on scribe performance. When one copies great amounts of materials, which one may vocalize to increase copying efficiency, one is liable to lapse into ‘ease of articulation’
Phonological and Morphological Variation in Spoken Hebrew

(26) • Jer 6:12 wayyarrap‘ah ‘and they healed’
   • Ps 51:9 lāḥātārēni ‘you cleanse me’
   • Gen 31:39 lāḥafēnā ‘I bore the loss of it’ (same root)
   • Job 20:17 bēmī‘a ‘butter’
   Job 29:6 bēmā

(27) • ISam 1:27 lāṭēlāb ‘my request’
   • ISam 1:17 lāṭēbēx ‘your f.s. request’
   • Ps 18:40 waṭīraṭzārēni ‘and you girded me’
   • Gen 31:39 lāṭōmim ‘twins’
   • Gen 25:24 tōmim
   • Ps 29:6 rēmim ‘unicorns’
   • Ps 38:39 ṭāʾērim ‘the rest of’
   • IChr 12:35 ṭērēth

(28) • IKgs 18:12 lāḥaggād ‘to tell’
   • Is 10:7 lāḥōmī ‘to destroy’
   • Jer 41:5 lāḥāvī ‘to bring’
   • Jer 39:7 lātāvī ‘to hide’
   • IIsam 19:16 lāḥāšāvīr ‘to make cross’
   • IChr 5:13 lāḥaṭmī ‘to make sin’
   • IKgs 16:19 lāḥahā ‘to make sin’
   • Ecc 5:5 lāḥāhī ‘to disobey’
   • Ps 8:3 lāḥaṭīt ‘to still’
   • Dt 3:24 lāḥarōd ‘to show’
   • Neh 9:19 lāḥanḥōbēm ‘to direct them’

(29) • Dan 11:34 ṣāvāḥkāṭām ‘and on their failing’
   • Prv 24:17 ṣāvāḥkāṭ ‘and on his failing’
   • IKgs 18:2 ḫērāzōd ‘to be seen’
   • Ex 34:24, Dt 31:11, Is 1:12 ĥērāzōd ‘to be seen’
   • lēhānāzōd ‘to humble oneself’
   • Ex 10:3 lēśānōd
   • bāḥēḥārēy ‘on being killed’
   • Ezek 26:15 bāḥēḥārēy
   • bāḥēḥālēf ‘on fainting’
   • Lam 2:11 bēṭāīēf

(30) • Same as preceding, in Mishnaic Hebrew:
   • lēḥārēy ‘to be killed’
   • lēhānōd ‘to enjoy’
   • līṣāqēl ‘to be purified’
   • līṭāmēn ‘to be desacrated’
   • lāḥaggēm ‘to enter’
   • lēḥānāzōd ‘to be married’
   • lāḥānēz ‘to be cut’
   • lhēḥēvēs ‘to feel’
   • lēḥānēz ‘to be stoned’
   • lēḥānēz ‘to be purified’
   • lēḥēnēz ‘to enjoy’
   • lēḥānēz ‘to be stoned’

(31) • Ex 22:19 lēṭēḥōm ‘to God’
   • Ps 86:8 kēṭēḥōm ‘like God’

The following might be regarded as a “rule inversion” from a former casual speech process, i.e, the natural laḥa ‘to the’ > la, bāḥa ‘in the’ > ba, kōha ‘like the’ > ka process reversing itself:

(32) • ISam 13:21 ulōhakhkārēmmim ‘and to the axes’
• ISam 21:20 lēḥārōf ‘to the giants’
• IKgs 7:21 bahēhōs ‘in the field’
• Ezek 40:25 kāḥahalōnōd ‘like the windows’
• Ezek 47:22 ulōhaggērim ‘and to the aliens’
• Ecc 8:1 kōhēṭhēm ‘like the wise one’
• Dan 8:16 lāḥahālāz ‘to that one’
• Neh 9:19 bāḥaddērē ‘in/on the road’
• Neh 12:38 lāḥahōnōm ‘to the wall’
• IChr 10:7 lēḥātām ‘to the people’
• IChr 25:10 lōhaggadād ‘to the battalion’
• IChr 29:27 lāḥamnīṭṭēbōt ‘to the altar’

While the following is a possible casual speech process,

(33) • bbāyōhādā ‘in Judea’ > bīyāhādā > [bīhoṭā]
• bbāyōhādā ‘to Judea’ > bīyāhādā > [bīhoṭā]
• miyōhādā ‘from Judea’ > miyāhādā > [mīhādā]

the next is, again, a kind of inversion of it:

(34) • IChr 20:11 miyōraṭšṭābā ‘from your possession’
• Dan 12:2 miyāṭhēnē ‘from the sleepers of’

Another possible inversion:

(35) • Is 19:6 dalālē ‘they diminished’
• Ps 118:11 ṣavābān ‘they encircled me’
• Ps 118:11 sabbān ‘they encircled me’
• Ezek 32:12 ṣāḥēdādā ‘they shall despoil’
• Ps 17:9 ṣaddān ‘they despoil me’
Consonant Reduction

Consonants may be reduced as well. In general, sonorant consonants are more amenable to elision in casual and/or fast speech, again in direct relationship to the frequency of the morpheme concerned. The likelihood of reduction is (possibly) dependent on their status on the sonority scale.

The sonorant $y$ is the most likely consonant to delete, as in the following:

(36) $yisrael$ 'Israel' $>$ $israel$
$yica$-ak

$yica$-ak

$yeladim$ 'children' $>$ $eladim$

$ani$ yesapér lexá 'I'll tell you' $>$ $ani$ sapérxa

$sáxulim$ 'soldiers' $>$ $sáulim$

$yi$ is the least preferred, because a $CV$ syllable in which the onset and the peak are minimally different in sonority is the least favored syllable type. Thus, $yicxák$ $>$ $icxák$, unless emphasized, as in optional $yicxák$ or $yidš$ 'Yiddish.' $ye$ is not too stable either: $yeladim$ is often realized as $eladim$ in casual speech, and in $ani$ sapérxa a whole syllable is gone.

Are $yu$ and $yo$ as stable as $ya$? If so, it is due to the feature difference: not just frontness, but roundedness as well, which make these vowels maximally different from $y$, and the $CV$ contrast optimizes the syllable.

The next most likely sonorant consonant to reduce is $l$, especially in grammatical words. The reduction is a function of frequency and recoverability, and also a function of alternating stress (preference for regular alternation):

(37) • $amárti$ lexá 'I told you m.s.' $>$ $amártisá$ $>$ $amártisá$

Same with...

• $áxavéř$ sélxá 'your m.s. friend' $>$ $áxavéř$ sélxá

Somewhat less common examples:

(38) • $amárti$ laxá 'I told you f.s.' $>$ $amártiyás$. (with a transition glide, as in maštivsá, rěwāx.)

• $gáurved$ lárnu ha tařik 'they stole our purse (lit. they stole to us the purse)' $>$ $gáurved$ wá nuřu tařik.

• $xavéř$ sélxá 'it's a pity that...not' $>$ $xavéř$ séló

• $á$ távi 'don't come!' $>$ $á$ távi

• $áxavéř$ sel ríná 'Rina's friend' $>$ $áxavéř$ sérina

• $kú řiá$ 'so much' $>$ $kúřiá

• $běsofő$ sel dařáv 'in the final analysis' $>$ $běsofőtařáv $>$ $běsofőtařáv

• $ťafšik$ levalbél ét amáax 'stop nagging! (lit. stop confusing the brain)' $>$ $ťafšikvalbélbátamáax

Consonant Assimilation and Merger Processes

Some kinds of consonant assimilation produce variability, such as voicing assimilation:

(42) • $tisgór$ '(you will) remember' $>$ $tiskor$

• $nitfők$ 'we'll knock' $>$ $ntfók$

• $tisgór$ '(you will) close' $>$ $tizgór$

• $kvíš$ 'road' $>$ $kvíš$ $>$ $kfig$

• $tizgór$ 'he'll return' $>$ $tizgór$ $>$ $tizgór$

In Israeli Hebrew, voicing assimilation is regressive (or anticipatory). Voicing may start early, in anticipation of a voiced obstruent that follows, causing a preceding voiceless obstruent to become voiced (e.g $tisgór$ '(you will) close' $>$ $tizgór$). By the same token, cessation of voicing may start early, in anticipation of the next voiceless obstruent, causing a voiced obstruent to lose its voicing (as in $tizkór$ '(you will) remember' $>$ $tiskór$).

Voicing assimilation is not obligatory; rather, it is a variable process, whose application depends on the degree of casualness. It is more likely to apply when attention is reduced, though increased rate of speech also creates conditions favorable for it. There are some marginal cases, like $raxvá$ 'she rode,' where the expected variant $[rayvá]$ is not very likely to be realized. A possible reason is that $[r]$, the voiced counterpart of $l$, is too close to $[s]$, the standard Hebrew realization of $l$. Generally, however, the process is quite automatic. In the constant tension between the natural tendency to
facilitate speech by reducing and assimilating, and the need to maintain semantic differences by means of surface distinctions, voicing assimilation is a constant source of worry to purists. They agonize over the need to disambiguate similarly sounding pairs, e.g., tiskör ‘you will remember’ > tiskór vs. tiskôr ‘you will survey.’ Apparently, this ambiguity has always been an issue. The Talmud warns readers of the Torah ló lehatîz et hasamex. velô lehatîs et hazaâyin ‘not to sound an s-sound like z, nor to sound a z-sound like s,’ in order to avoid potential ambiguity.

A less obvious type of assimilation is changing a dental nasal to a velar one before a velar stop. The change is less obvious because the velar nasal is not an independent phoneme in Hebrew. The process applies obligatorily when both segments are in the coda of the same syllable. The process also applies quite often when the nasal is attracted to the velar by a (primarily) stressed vowel in the preceding or following syllable:

(43) • manskál ‘general manager’ > maqjkl
  • pkás ‘notebook’ > pqkás
  • tâk ‘tank’ > tâkîm ‘tanks’, tankîst ‘tank crew member’ > tâkîst
  • ãqglîyâ ‘England’, ãqglîyâ (= ãqglîyâ) ‘Englishwoman, English f.s.’

As shown in Bolozky (1980), consonantal merger occurs when a stop-fricative combination turns into a single-unit affricate in casual/fast speech (acoustically, the stop-to-fricative length ratio is in favor of the former in affricates, compared with original stop-fricative sequences), as in the following:

(44) • ëtatí ‘they sneezed’ > hâçû
  • tsùmet lev ‘attention’ > cùmet lev
  • tsuzá ‘movement’ > dzuzá
  • vzamex ‘happy holiday!’ > zmusaméax

As noted above, geminates may (variably) arise within the morpheme only in casual/fast speech. Across morpheme boundary they may potentially arise in any speech style:

(45) • avâd+etí ‘I worked’ > avâdêti – avâti
  • exâd+tí ‘I decided’ > exâdêti – exâti
  • yâsàn+nu ‘we slept’ > yâzamu
  • evân+nu ‘we understood’ > evânu
  • hit+dârdér ‘he deteriorated’ > ıddârdêr ~ idârdêr

Bolozky (1997) proposes that inapplication of e-insertion in the /hit+dârdér/ type means that the process is restricted to sequences involving an inflectional affix (/hit+/ being a derivational affix), and that it is blocked in dânu /+nu/ being inflectional). The reason is that *dânenì would have been interpreted as stemming from a gerimate root d.n.n, instead of the correct d.w.n (or s.n.n instead of y.s.n in the case of *yasânenì). Re-evaluation of the data in Bolozky (forthcoming) suggests that the reasons are rooted in more solid phonological grounds. The absence of *dânenì is attributed to the fact that the ne syllable is not optimal, owing to the minimal sonority difference between n and e. In addition, the absence of *hitêdârdèr leads to the highly irregular (and thus undesirable) placement of secondary stress on the epenthetic e.

The actual distribution in speech is such that idârdèr is never realized in connected informal speech; only idârdèr is attested. The same is somewhat true of +nu cases like yaSaânu, which are normally realized as yaãsànu. The avâti type does occur in connected speech, but less often than avâdêti. Bolozky (forthcoming) proposes that orthographical representation may be the reason: while the t: in savât(e)jì is always represented by two t’s, the n of yaSaânu(nu) etc. is represented by only one n.

First Person Singular in the Future Tense
The following type of variation is often noted in colloquial Hebrew:

(46) • anî avó ‘I’ll come’ > anî yavó – nyavó – navó (cf. also Neuman 2000)
  • anî elèx ‘I’ll go’ > anî yelèx – nyelèx – nelèx
  • anî axtî ‘I’ll decide’ > anî yaxtit – nyaxtit – nastî
  • anî adâbré iî ‘I’ll speak with him’ > anî yedâbré iî – ãndâbré iî ~ ndâbré iî
  • anî extî ‘I’ll write’ > anî yxtîv – anîxtîv – ãnstîv – nxtîv
  • anî eýkáv ‘I’ll lie down’ > anî yîkáv ~ anîštîkáv > ãnstîkáv

Explanation given in Bolozky (1984, 1999b):

1. The normative future paradigm is quite uniform, except for the first person singular. In pišel, for instance, it is edâber throughout, except for the first person singular, in which it is adâber. So the pressure for paradigm coherence/unification results in anî edâber for ‘I will speak.’
2. Because of the i of anî ‘I,’ a transition glide is inserted: anî yedâber > anî yeýdâber.
3. Now that the 1st and 3rd person singular forms have merged, the pronoun ani becomes obligatory so as to maintain the semantic distinction between the two.

4. Among 1st and 2nd person forms in the future paradigm, the 1st person singular is the least transparent, in that it does not contain even a trace of the free pronoun, because in Israeli Hebrew, the glottal stop of Biblical אדבバー etc. is not pronounced. All other forms maintain residues of their respective free pronouns in the bound pronominal form. Thus, although one would expect 1st and 2nd personal pronouns to be redundant, in that they constitute part of the familiar immediate context, the absence of pronoun-specific marking in 1st person singular makes the pronoun ani obligatory. Note that in addition to 'proximity to the speaker,' 1st and 2nd person pronouns in the past tense are also redundant (and thus optional) because their respective verb forms contain very transparent residues of those pronouns.

Noyman (2000) points to an alternative realization: ani avo > nyavo > novo, ani elex > nelex > nelex, ani efor et ze > nifor ed ze. It may also be argued that in less casual style, the 1st person singular ani is obligatory so as to also distinguish it from 1st person plural, where the pronoun is usually not maintained.

Realization of the Glottal Stop (or Other Segments Merged With It)

The glottal stop איל, [ʔ], is rarely realized in Israeli Hebrew, regardless of whether it is underlying /ʃ/ or /ʃ/ (סְיִין). When it does surface, it is as an onglide to a heavily stressed vowel, usually for the purpose of contrasting emphasis:

\[
\begin{align*}
\text{אני} 'I, \\
\text{אני} 'the child' > \text{מיואל} 'the child',
\end{align*}
\]

This is a natural phonetic realization: heavy stress is 'reinforced' by a glottal stop, as in English: I said [ʃəv], not jealous. In English, one may even hear it in formal, deliberate pronunciation of a two-vowel sequence, as in coʃəˈpərət, coʃəˈprɛrdət. As for Hebrew h, some speakers tend to maintain it, some others merge it with [ʔ], but for most, h is realized as zero just as the glottal stop is, unless it is heavily/emphatically stressed:

\[
\begin{align*}
\text{מחירו} 'you' > \text{치ירו} 'you',
\end{align*}
\]

The same is often true of English /h/, as demonstrated, for instance, by a comparison between a [h]istory and an hf=0)istorical event.

Penultimate Stress in Israeli Hebrew

In the Hebrew verb system, stress is penultimate in the following environments:

(a) when the suffix is +et (cf. segolate stress below), as in the following:

\[
\begin{align*}
\text{kotëvet 'write, f.s.'} & \quad \text{medabëret 'speak, f.s.'} \\
\text{mišlabëset 'get dressed, f.s.'} & \quad \text{nëkëret 'remember, recall, f.s.'}
\end{align*}
\]

(b) when the suffix begins with a CV (consonant-vowel) sequence, as in the following:

\[
\begin{align*}
\text{yatïvi 'I sat'} & \quad \text{yatëvnu 'we sat'} \\
\text{dibïrta 'you m.s. spoke'} & \quad \text{dibïrnu 'we spoke'} \\
\text{kanïti 'I bought'} & \quad \text{kanïnu 'we bought'}
\end{align*}
\]

(c) in all forms other than the present/benoni of some conjugations. Those forms include hišîl, as in the following:

\[
\begin{align*}
\text{(hišîrâ) 'she explained'} & \quad \text{yasbîru 'they will explain'} \\
\text{(hišibîru 'they will understand',} & \quad \text{yagënu 'they will protect.'}
\end{align*}
\]

Alternatively, one may say that in such cases, stress is stable, i.e., does not shift from the citation form to a suffix appended to it, and consequently

Phonological and Morphological Variation in Spoken Hebrew
the derived word is penultimately stressed. There is also the large group of the so-called segolate nouns, as in the following:

(55) kilev ‘dog’ selef ‘book’ boker ‘morning’ mikedret ‘pipe’
timoset ‘orchestra’ naxal ‘river’ peret ‘flower’ sela ‘rock’

The segolate class may also be argued to cover comparable verb forms in benoni forms ending with +et (see kotetet ‘write, f.s.,’ etc., above.)

These environments are the main ones noted in normative grammars for penultimate stress. Otherwise, the default location for stress assignment in Israeli Hebrew is the final syllable, regardless of whether a suffix is involved or not. One may still raise the question of whether final stress is indeed the natural default stress assignment in Israeli Hebrew (see Noyman 2000).

There are some other, well-defined groups of words where stress is typically penultimate, illustrated below.

(i) Proper names, as in the following:

(56) smeil rina moše xaim adina avigdor nexima israeli

If proper names are stressed on the final syllable, it clearly characterizes the context as normative and (very) formal.

(ii) Terms taken from children’s games, as in the following:

(57) riston ‘first step in a child’s game, like hopscotch’ (vs. normative riston)
klofim ‘card game’ (vs. klofim ‘cards’)
bulim ‘stamp collecting’ (vs. bulim ‘stamps’)
cfoni ‘of Northern Tel Aviv’ (cf. cfoni ‘northern’)
micim ‘(individual) juice drinks (cf. micim ‘types of juice’)

(iii) Gentile terms and residents of geographical locations, such as the following:

(58) svedi ‘Swedish’ suri ‘Syrian’
hollandi ‘Dutch’ sini ‘Chinese’
xoloni ‘resident of Holon’ batyami ‘resident of Bat-Yam’
telaviivi ‘resident of Tel Aviv’ yerushalimi ‘Jerusalemite’
vs. angli ‘English’ germani ‘German’ turki ‘Turk(ish)’

This stress pattern is not always the case. Gentile names that constituted part of the Palestinian Jewish experience were ‘revived’ with normative final stress, e.g., angli ‘English,’ germani ‘German,’ etc. But subsequent natural formations opted for the more familiar, less formal penultimate alternative.

(iv) Some familiar kinship terms like the following:

(59) aba ‘Dad’ ima ‘Mom’ doda ‘Auntie’ saыта ‘Grandma’

(v) Stress is also penultimate in some individual familiar items such as the following:

(60) glida ‘ice cream’
tiras ‘corn’
acbaa ṣemite ‘vote by name’ (normative: ṣemite)

(vi) Some new penultimately-stress patterns emerge in current slang, e.g., CCeC+a, for abstract nominalizations, a colloquial counterpart of CCiC+a:

<table>
<thead>
<tr>
<th>Form</th>
<th>Meaning</th>
<th>Source</th>
<th>Meaning</th>
</tr>
</thead>
</table>
| sviza | depression, desparation’ | saviz  | depressed (from Svar zaim ‘with broken penis’)
| dfika | being “screwed”           | dfik   | screwed              |
| gnoiva | wonderful situation      | gniv/magniv | wonderful  |
| xnoka | feeling suffocated        | xanik  | suffocated           |
| xsrésa | stench                   | marjia | stinking             |

(vii) Stress does not shift to an inflectional suffix in acronyms or some frequently used lexical items:

(62) mankái ‘general manager’ – mankálím
rasárd ‘first sergeant major’ – rasárim
avatí息 ‘watermelon’ – avatí息m ‘watermelons (used only on the farm)’
tit ‘strawberry’ – titím
kox ‘laughter’ – koxím ‘joyous moments (sl.)’

It is similarly stable in numerous borrowed words. It appears that when speakers do not succumb to the normative preference for final stress, natural penultimate stress takes over in familiar or informal speech (a residue of Yiddish and Arabic sub-stratum effect?). The dichotomy between final and
penultimate stress assignment may or may not have pragmatic implications to teaching. As pointed out above, an argument in favor of describing realizations of a glottal stop in heavily stressed syllables is that it resolves potential ambiguity; the same argument applies to minimal pairs, distinguished only by the location of stress, as in the following:

(63)  
- boker 'morning' vs. bokér 'cowboy'  
- rácu 'they ran' vs. racú 'they wanted'  
- bánú 'in us' vs. banú 'they built,'

and in minimal pairs involving certain proper names vs. regular general nouns, as in the following:

(64)  
- xaím 'Hayim' vs. xaím 'life'  
- toshana 'Shoshana' vs. toshana 'rose'  
- rina 'Rina' vs. rina 'song, song of joy'  
- ilan 'Ilan' vs. ilán 'tree.'

The Distribution of Secondary Stress

In Israeli Hebrew, secondary stress tends to alternate: counting backwards from the main stress, every other syllable carries secondary stress (Bolozky 1982). If more than one secondary stress is involved, the farther away it is located from the main stress, the stronger it is. Thus, the first secondary stress is stronger than the second, the second stronger than the third, etc. The strongest secondary stress is always one notch lower than the main stress (note that secondary stress is marked with a grave accent).

The distribution of secondary stress suggests that Hebrew is one of the languages that prefer regular alternation of strong and weak syllables, which also means that two adjacent stresses are not favored. Thus, we can account for destressing of a weaker beat, or vowel deletion, when secondary stress clashes with the primary stress of an adjacent word, as in the following:

(65)  
- veáxaver 'and the boyfriend'  
- véxaverá 'and the girlfriend'  
- kešuména(h)jelet 'when the headmistress'

Similarly, avoidance of stress clash explains (variable) stress movement in grammatical words:

(66)  
- szotá yeladim 'three children' > szotá yeladim ~ szotá yladim.

Pre-Tonal Lengthening

A sort of pre-tonal lengthening may occasionally be observed in Israeli Hebrew. Several examples follow.

(67)  
- atá bá 'are you coming?' ~ atá bá ( ~ tabá)  
- bó (h)éna 'come here!' ~ bó ená ( ~ bóna)  
- ú náitán lánu makót 'he beat us up' ~ ú náitán lanú makót  
- ém raú bánú oyyim 'they considered us enemies' ~ ém raú banú oyyim.

Pre-Tonal Lengthening

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(68)  
- computer person, Ashkenazi (not consistent – appears to lengthen when emphatic on the phone, or when tries to sell/convince):  
  - ze to:né 'it's different'  
  - ma:hir meód 'very fast'  
  - kol ka:ma:m teev:élem, ya:cá 'each quantity you brought, came out'  
  - ze ko:ét et akól 'it includes everything'  
  - mezáev ta:lé'm 'a complete computer'

(69)  
- radio interviewer (when trying to enunciate?):  
  - tó:vádm lemitzyátid 'who work for their living'  
  - xaci mílyárd sá:lim 'half a billion shekels'  
  - kerá:ve aréva:xá 'the welfare services'  
  - tám da:vá:r 'nothing' (clear emphasis)  
  - sá ka:ti 'it's hard'  
  - xa:sér '(is) lacking'  
  - ani mo:de lax 'I thank you lots.'

(70)  
- interviewee, Sephardi:  
  - ló mtá:ne 'it doesn't matter'  
  - má ze mtá:ne 'what difference does it make?'  
  - leva:tele 'to cancel'  
  - léna:tel 'to dispossess'  
  - mèdi:ná:tel mítíyo:nérím 'a state of millionaires'  
  - bánú:im ano:xim 'under present conditions'  
  - ko:lé le te sé 'including those who…'

(71)  
- interviewee:  
  - xérim ve:xa:lit 'twenty three'  
  - o:lim 'immigrants'  
  - atá ta:mid omer 'you always say'

(72)  
- young orthodox, on cell phone in bus:  
  - yéla:vá:var ká:se 'there is such a thing'  
  - xa:ci xá:ná 'half a year'  
  - ód xá:ná 'another year.'
Phonological and Morphological Variation in Spoken Hebrew

Pre-tonal lengthening is apparently a fixed feature of Ethiopian and Yemenite speech, but a milder version of it appears to constitute part of cföni ‘northern’ pronunciation, of North Tel Aviv and suburbs, typically among middle and upper class youth, but is by no means restricted to this speech group. If there is indeed a natural preference for penultimate stress in Israeli Hebrew familiar/casual speech, lengthening may have possibly been triggered by it. Lengthening is also a feature of deliberate speech, intended to affect and influence, and could be seen as a step back towards ‘syllable timing’ from the current ‘stress-timing’ of Israeli Hebrew. In languages such as English, stress occurs in relatively equal time intervals, and unstressed, syllables in between are compressed or reduced. In languages such as Spanish, all syllables are of roughly equal length. Pre-tonal lengthening approximates the latter. Perhaps it is motivated by both a natural preference for penultimate stress and increased preference for syllable timing. One argument against the latter is the formidable influence of English on Israeli Hebrew today.

Phonological variation — general tendencies

Generally, assimilation, reduction and deletion appear to be in direct relation to frequency of use and (related) likelihood of recoverability. Consequently, affixes and prosthetic vowels are the most likely to be affected.

The likelihood of vowel reduction, or elision, is essentially in inverse relationship to the degree of sonority. This happens partly because the less sonorant vowels e and i frequently occur in recoverable strings, but also because more prominent vowels are inherently more resistant to deletion/reduction.

The opposite tendency applies in consonants, owing to preference for maximal sonority difference between C and V in a CV sequence in a syllable. Minimal sonority difference between a consonant and a vowel in a CV syllable facilitates elision of C. Instead of assuming a glottal stop wherever it existed historically, we may take it to stand for an empty consonantal slot, optionally realized as a phonetic [ʔ] only in limited phonetic environments. Where there is no consonantal slot, a semi-vowel may be inserted, as in ani yavo, ruwax.

It appears that consonant assimilation is usually regressive, and is strongest when the two consonants concerned are tautosyllabic, as suggested by tänk ‘tank’ being a must (*tank).

"Ease of pronunciation" is the reason for consonant cluster simplification in ts > c, and for vowel sequence simplification in unstressed eV sequences, such as teuna > tuuna > tu:na.

In informal (or familiar) speech, it is possible that the natural position for stress is penultimate, or that familiar style tends to preserve stable stress, unaffected by suffixation, to maximize the transparency of the base and to maximize simplicity by reducing alternation within the paradigm. Pre-tonal
lengthening may constitute a corollary of that preference, though it may indicate certain preference for syllable timing.

In casual speech, the tendency for regular alternation between strong and weak syllables may cause destressing, deletion, or stress shift (particularly in function words).

**Morphological Variation in Spoken Hebrew**

It is harder to speak of variability in the same sense as in phonology when it comes to the morphological component of Israeli Hebrew. Within a particular sub-dialect, phonological variation is a function of speech style and register, and is often manifest even within a particular idiolect. In morphology, there is no true variation, in that each realization is at least minimally different semantically from its apparently equivalent alternative. Possible exceptions may occur in productivity tests, where the same semantic target may be manifest in a number of ways, as shown in Bolozy (1999a). But potential words formed in experimental conditions may only be indirectly relevant, if at all, to spoken corpora. Nevertheless, tendencies in recent innovation, formulated through dictionary comparison or the study of *hapax legomena* in corpora (again, Bolozy 1999a), do point out certain interesting variations in the realization of certain semantic features. Some of these realizations can be attributed to register. For example:

**Variation in Causative Verb Realization**

Causative verbs are realized in *hif'il* in the literary register, in *pif'il* in the colloquial and in any non-literary register (see Bolozy 1999a):

(80) **Recent meCuCaC and +i adjectives**

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Source</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>medupras</td>
<td>depressed</td>
<td>dipres</td>
<td>depress (‘dépresse ‘depression’)</td>
</tr>
<tr>
<td>memuesav</td>
<td>motor equipped</td>
<td>muesav</td>
<td>motor, engine</td>
</tr>
<tr>
<td>memunays</td>
<td>depressed</td>
<td>ba'ayes</td>
<td>misery, distress (Ar. ba'ahal)</td>
</tr>
</tbody>
</table>

**The CaCCan/’an Variation**

Recent formations for agent nouns may be realized either discontinuously, in the *CaCCan* pattern, or linearly, by adding *’an*. There is no significant functional difference between forms belonging to the two types. There is a tendency for *CaCCan* to be chosen when the base is a verb form, and *’an* when it is a noun or adjective, but this is not always the case. The main exceptions are of the *mecican, mistaglan* type. If we follow the tradition of *benoni* forms being semi-nouns, the generalization may stand. The following illustrations are taken from Bolozy (1999a):

(81) **CaCCan agents**

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Source</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>zablan</td>
<td>one who talks too much</td>
<td>zibel</td>
<td>talk too much (&lt; zével ‘garbage’)</td>
</tr>
<tr>
<td>balyan</td>
<td>always having a good time</td>
<td>kana</td>
<td>have a good time</td>
</tr>
<tr>
<td>kunyan</td>
<td>buyer, purchaser</td>
<td>piter</td>
<td>buy, purchase</td>
</tr>
<tr>
<td>pazaran</td>
<td>spendthrift</td>
<td>piter</td>
<td>scatter</td>
</tr>
<tr>
<td>tartar</td>
<td>one who nags</td>
<td>firter</td>
<td>make noise</td>
</tr>
</tbody>
</table>

**+an agents**

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Source</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tilan</td>
<td>soldier launching missiles</td>
<td>til</td>
<td>missile</td>
</tr>
<tr>
<td>mis gland</td>
<td>restaurant proprietor</td>
<td>mis gland</td>
<td>restaurant</td>
</tr>
<tr>
<td>mafsdan</td>
<td>loser</td>
<td>mafsdan</td>
<td>lose (pr. part.)</td>
</tr>
<tr>
<td>mecican</td>
<td>peeping Tom</td>
<td>mecic</td>
<td>peep</td>
</tr>
<tr>
<td>margizan</td>
<td>an annoying person</td>
<td>margiz</td>
<td>annoy</td>
</tr>
</tbody>
</table>
Variation in the Realization of Instrumentals

In the colloquial, instruments that in normative Hebrew are realized in maCCeC merge with the agentive meCaCeC pattern, forming a type of 'performer' category covering both agents and instruments performing an action (see Bolozky 1999a):

(82) Colloquial variants in meCaCeC of maCCeC instrumentals

<table>
<thead>
<tr>
<th>Literary Form</th>
<th>Gloss</th>
<th>Coll. Variant</th>
<th>Possible Agent Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>meacen</td>
<td>cooler</td>
<td>mecaen</td>
<td>one who cools</td>
</tr>
<tr>
<td>maghec</td>
<td>iron</td>
<td>megahec</td>
<td>one who irons</td>
</tr>
<tr>
<td>makocc</td>
<td>cutter</td>
<td>mekooc</td>
<td>one who cuts</td>
</tr>
<tr>
<td>makrer</td>
<td>refrigerator</td>
<td>mekoar</td>
<td>one who refrigerates</td>
</tr>
<tr>
<td>manteck</td>
<td>interrupter (teleph.)</td>
<td>menatek</td>
<td>one who interrupts</td>
</tr>
<tr>
<td>mgfecoax</td>
<td>nutcracker</td>
<td>mekoaxc</td>
<td>one who cracks</td>
</tr>
<tr>
<td>marsek</td>
<td>masher</td>
<td>merasek</td>
<td>one who mashes</td>
</tr>
<tr>
<td>marsees</td>
<td>sprayer</td>
<td>merases</td>
<td>one who sprays</td>
</tr>
<tr>
<td>maTgser</td>
<td>launcher</td>
<td>metogser</td>
<td>one who launches</td>
</tr>
<tr>
<td>maxsev</td>
<td>computer</td>
<td>mecasev</td>
<td>one who computes</td>
</tr>
</tbody>
</table>

Variation in the Realization of Locatives

In the colloquial, locatives that in normative Hebrew are realized in miCCaCa merge with the instrumental maCCeCa pattern. Possible explanations could be the orthographic similarity, or maCCeCa(a) being more prominent/vocalic/vocalic, or the preference for the more prominent vowel a (see Bolozky 1999a):

(83) Liter. Loc. | Gloss | Colloquial Variants |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) mixbasa</td>
<td>laundry (room)</td>
<td>maibeza</td>
</tr>
<tr>
<td>mispara</td>
<td>barber’s shop</td>
<td>maipera</td>
</tr>
<tr>
<td>mistala</td>
<td>(plant) nursery</td>
<td>maiteila</td>
</tr>
<tr>
<td>mistama</td>
<td>urinal</td>
<td>maiteza</td>
</tr>
<tr>
<td>mixata</td>
<td>slaughterhouse</td>
<td>maipera</td>
</tr>
<tr>
<td>mispara</td>
<td>sewing workshop</td>
<td>maipera</td>
</tr>
<tr>
<td>mighaca</td>
<td>ironing shop</td>
<td>maghica</td>
</tr>
<tr>
<td>mispara</td>
<td>docks, shipyard</td>
<td>magena</td>
</tr>
<tr>
<td>mizlafa</td>
<td>zincography shop</td>
<td>maglef</td>
</tr>
<tr>
<td>miltala</td>
<td>diamond polishing plant</td>
<td>miteila</td>
</tr>
<tr>
<td>maklava</td>
<td>dairy, dairy shop</td>
<td>maileva</td>
</tr>
<tr>
<td>maktea</td>
<td>hashish smokers’ den</td>
<td>mateila</td>
</tr>
<tr>
<td>mixatea</td>
<td>desk</td>
<td>maiteva</td>
</tr>
<tr>
<td>miglaa</td>
<td>slide</td>
<td>maglela (slang moglea)</td>
</tr>
<tr>
<td>(b) midraca</td>
<td>sidewalk</td>
<td>maraca/midraca</td>
</tr>
<tr>
<td>mirpa’a</td>
<td>clinic</td>
<td>marpa’a/mirpa’a</td>
</tr>
<tr>
<td>mizbala</td>
<td>garbage dump</td>
<td>mazbala/mizbala</td>
</tr>
<tr>
<td>mizraa</td>
<td>water fountain</td>
<td>mazraa/mizraa</td>
</tr>
<tr>
<td>mizlala</td>
<td>small restaurant (slang)</td>
<td>mazlala/mizlala</td>
</tr>
</tbody>
</table>

In subgroup (a), 14 locatives are shifted from literary miCCaCa to colloquial maCCeCa. In subgroup (b), 5 occurrences of normative miCCaCa may be realized either in miCCaCa or in maCCeCa in the colloquial register. The direction of the shift, from miCCaCa to maCCeCa and not vice versa, can also be explained in terms of transparency. The total lexicon (based on dictionary counts), if miCCaCa and miCCaCa on the one hand, and maCCeCa and maCCeCa on the other hand, are indeed conceived of as related pairs by native speakers, then the former pair is less transparent semantically than the latter. While the majority of forms in both maCCeCa and maCCeCa in Even Shoshan (1970/80) are instrumental, only the majority of miCCaCa realizations are locative, and only about a quarter of miCCaC cases can be characterized as locative. miCCaC is more prominently used for a group of established abstract nouns.

Thus, semantically, the miCCaC(a) pattern is not sufficiently transparent for locatives. It allows maCCeCa, the more prominent pattern semantically, to become a ‘haven’ for both instrumentals and locatives. This shift is facilitated by the prior existence of a number of maCCeCa realizations that could be characterized as either instrument or locations. For instance, ma’amfera ‘ashtray,’ is both an instrument for collecting ash, and a place for ash:

(84)

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
<th>Source</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>maamfera</td>
<td>ashtray</td>
<td>Nfer</td>
<td>ash</td>
</tr>
<tr>
<td>makpeca</td>
<td>spring-board</td>
<td>kafac</td>
<td>jump (V)</td>
</tr>
<tr>
<td>maxena</td>
<td>mill</td>
<td>taxan</td>
<td>grind, mill (V)</td>
</tr>
<tr>
<td>madrega</td>
<td>stair</td>
<td>darga, dereg</td>
<td>step, grade (V)</td>
</tr>
</tbody>
</table>

Generally, maCCeC(a) is more productive than miCCaC(a). Its relatively greater productivity is also supported by productivity tests in Berman (1987). In her open-ended coinage tasks, maCCeC(a) occupied second place in instrument realization (after +an, see above), and a rank equal to that of miCCaC(a) in location realization (20% vs. 21%, respectively). miCCaC(a) locatives are more common than maCCeCa ones in Berman’s data only in judgment tasks (45% vs. 28%, respectively). Berman also proposes a more general account of the instability of locative realizations: While agents are highly individuated, and while instruments are semantically restricted, locatives can accommodate a variety of semantic features. These features
allow them to shift more easily from one pattern to another, or alternatively, to overlap with other semantic categories.

There is another possible explanation for the $miCCaCa > maCCeCa$ shift. It may simply be a phonetically-motivated change, from a marked vowel (in this case i) to the unmarked vowel, a. This possibility seems to be supported by data from Iraqi Arabic (see Bolozky & Jiyad 1989, 1990), where the typically instrumental $mi+$ shifts to the typically-locative $ma+$, as in instrumentals such as $mibzal$ 'tool for washing rice' $> mabzal$, $majhar$, $midjaf$ 'cannon' $> madfail$. Since this is the opposite of what happens in MH, the phonological explanation is the only one that can account for both phenomena. a has been shown to be the unmarked vowel in Modern Hebrew (Plada 1958/59; Bolozky 1990), and the same can probably be demonstrated for Arabic.

The $+er/+yoner$ Variation

A distinction is emerging between an $+er$ suffix with penultimate stress (originally from Yiddish/English with agentive meaning, now mostly instrumental) and $+onr$ or $+yoner$, with final stress (originally from French, or German), which is a fairly productive agentive pattern today (see Bolozky 2000). The distinction has implications to the role of stress as a morphological marker.

Hebrew borrowed a good number of words from Yiddish and from English, ending with the agentive/instrumental suffix $+er$, preceeded by penultimate or antepenultimate stress. Some words, like $macker$ 'activist; influential person,' $gangster$ 'gangster,' were borrowed as atomic units, suffixes included. In others, Hebrew has alternants with and without $+er$, just as the source language does, which suggests that Hebrew speakers indeed treat $er$ as a suffix:

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
<th>With $+er$</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>kvé</td>
<td>squeeze (from Yid.)</td>
<td>kvésér</td>
<td>stapler</td>
</tr>
<tr>
<td>spríc</td>
<td>squirt, spray (from Yid.);</td>
<td>sprícsér</td>
<td>liquid-spraying device</td>
</tr>
<tr>
<td>gríl</td>
<td>grill</td>
<td>grílsér</td>
<td>grilling instrument</td>
</tr>
</tbody>
</table>

We may conclude, then, that there is some evidence for the existence of an independent $-er$ suffix, in which stress always falls on the penultimate, or antepenultimate syllable. When new words are formed in this pattern in Israeli Hebrew, they appear to be restricted to instruments. This observation is not surprising. As noted above, speakers often do not distinguish between human agents and instruments, treating them both as 'performers' of the action. A final $+er$ is not, however, always unstressed. There is a group of forms, semantically agentive, in which stress falls on the final $+er$ itself. In most cases, such $+ér$ is preceded by on, as in the following:

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
<th>With $+er$</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>milyón</td>
<td>million</td>
<td>milyónér</td>
<td>millionaire</td>
</tr>
<tr>
<td>bilyón</td>
<td>billion</td>
<td>bilyónér</td>
<td>billionaire</td>
</tr>
<tr>
<td>misyon</td>
<td>mission (relig.)</td>
<td>misyonér</td>
<td>a missionary</td>
</tr>
<tr>
<td>ligyon</td>
<td>legion</td>
<td>ligyonér</td>
<td>legioneer</td>
</tr>
<tr>
<td>funkcyón</td>
<td>function, role</td>
<td>funkcyónér</td>
<td>a functionary</td>
</tr>
<tr>
<td>protekcyón</td>
<td>useful connections</td>
<td>protekcyónér</td>
<td>one benefiting from such connections</td>
</tr>
</tbody>
</table>

I have found only two instances of stressed $+er$ without $+on$:

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
<th>With $+er$</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>milyárd</td>
<td>billion</td>
<td>milyárdér</td>
<td>billionaire</td>
</tr>
<tr>
<td>stá</td>
<td>internship</td>
<td>stáér</td>
<td>intern</td>
</tr>
</tbody>
</table>

This group appears to be based on borrowing from French (through other substratum languages?) of the milyonér type, which adopted the same stress placement as in French, but semantically is no different from the Yiddish/English $+er$ group. In cases like funkcyónér or protekcyónér, it might be suggested that either there is some underlying funkcyon etc. from French.
or German, or that the suffix is restructured from +ér into +yonér or +onér. Some more recent formations throw some light on this question:

(89) 

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
<th>With +er</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>málya</td>
<td>mafia</td>
<td>málynér</td>
<td>mafoso</td>
</tr>
<tr>
<td>kriza</td>
<td>rage</td>
<td>krizyönér</td>
<td>one easily going into rage</td>
</tr>
<tr>
<td>básta</td>
<td>stall in market</td>
<td>bastyonér</td>
<td>owner of stall in market</td>
</tr>
<tr>
<td>füks</td>
<td>luck, serendipity</td>
<td>fúksyonér</td>
<td>lucky person (by serendipity)</td>
</tr>
<tr>
<td>ugáln</td>
<td>army group</td>
<td>ugonér</td>
<td>army group commander</td>
</tr>
<tr>
<td>fástla</td>
<td>failure (from Ar.)</td>
<td>fallonér</td>
<td>one responsible for failure</td>
</tr>
<tr>
<td>síryón</td>
<td>armor</td>
<td>síryönér</td>
<td>soldier in armor corp</td>
</tr>
<tr>
<td>bizayón</td>
<td>disgrace</td>
<td>bizyonér</td>
<td>one responsible for disgrace</td>
</tr>
</tbody>
</table>

For the majority of words, a one-syllable base results in Yiddish/English-type +er with non-ultimate stress, and a longer one in French-type ultimately stressed +er, but this is not always the case. We have forshiłfénér ‘sleepy, drowsy person’ and kibicer ‘kibitzer’ on the one hand, and stáž ‘internship’ > stážér ‘intern,’ füks ‘luck, serendipity’ > fúksyonér ‘lucky person (by serendipity)’ on the other hand. The length of the base, though possibly relevant, is not sufficient to determine the location of stress, or the recent differentiation in function (instrumental vs. agentive). There are two possible accounts here:

(a) The presence of a vowel at the end of the stem causes the insertion of the unmarked nasal, n, to avoid an undesirable two-syllable sequence; or

(b) The “French-related” suffix has indeed been restructured, and is now +onér, and in the case of krizyonér, bastyonér and fúksyonér, possibly even +yonér (+yonér in krizyonér and bastyonér probably arose in analogy to the earlier mafyonér).

The latter analysis (i.e., an underlying +onér or +yonér) accounts for the final a being replaced by o in ugonér, etc. If a basic a is involved, it is elided before +o (e.g., uga+onér > ugonér), and when the stem itself ends with +on, the two on sequences blend into one (širyon+onér > širyonér). Alternatively, we may simply assume an +ér suffix with final stress for the širyonér and bizyonér items, but a separate +yonér will still be required. In either case, the “French-based” suffix is +ér with final stress, which in some cases appears to have been restructured into +onér or +yonér. It is also possible that by now, with its final stress, +ér/(y)onér is considered a native suffix. Thus, although the Yiddish/English +er and the “French-based” (or by now native) +ér/(y)onér are functionally quite similar, from a morpho-phonological point of view +er and +ér are two independent suffixes. It is even possible that the two types of +er separated by stress assignment also reflect an emerging semantic difference: While ‘French-related’ +ér is clearly agentive, ‘Yiddish-related’ +er is being narrowed down to instruments. This explanation is supported by the following “minimal pair”:

(90) višer ‘windshield wiper’ višyonér ‘flatterer (suggesting ass-wiper/licker)’

Understanding stress placement as related to suffixes enables us to distinguish between apparently similar suffixes that are not identical.

Variation in the Realizations of +i and +ai

Bolozky (2000) discusses stress variation in gentile names and residents of geographical locations. This variation may constitute part of a more fundamental phenomenon in Israeli Hebrew, involving other word classes. It is claimed that for residents of towns and cities (and related adjectives), the suffix +ai tends to be stressed finally:

(91) 

| Names of residents of geographical entities with +ai suffixation |
|---------------------------|---------------------------|---------------------------|
| Base | Gloss | With +ai |
| berlin | Berlin | berlinaï |
| damésék | Damascus | damaskai |
| dábín | Dublin | dubлинаï |
| kéliyêkîn | trendy Tel Aviv street | selîyêkînai |
| xelôm | Chelmno | xelmai |

Penultimately-stressed +ai, as in paríz ‘Paris’ > parízáï ‘Parisian,’ are relatively rare for city designation.

In contrast, when the nisba +i refers to gentile names and residents of towns and cities, stress tends to fall on the preceding syllable:

(92) 

| Names of residents of geographical entities with +i (penultimate stress) |
|---------------------------|---------------------------|---------------------------|
| Base | Gloss | +i Form |
| swèdya | Sweden | svedya |
| albénya | Albania | albâni |
| irak | Iraq | irâki |
| súrya | Syria | sûri |
| ostrálya | Australia | ostrâli |
| hódu | India | hódi |
| holánd | Holland | holândi |
Many of these agentive argument for an atomic added to a stem, resulting in the elision of the respectively) may be helpful in identifying the underlying suffix when the stem ends with +ai. Penultimate stress takes over in informal. Some familiar or informal speech contexts. When it comes to gentilic terms tends to be associated with a more normative and formal style, while penultimate stress is typically familiar and informal.

There are only a few exceptions to this generalization, mostly among well-established gentilic terms:

<table>
<thead>
<tr>
<th>Form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polish</td>
<td>poloni</td>
</tr>
<tr>
<td>Russian</td>
<td>rusi</td>
</tr>
<tr>
<td>French</td>
<td>carfnai</td>
</tr>
<tr>
<td>England</td>
<td>angli</td>
</tr>
<tr>
<td>Turkey</td>
<td>turki</td>
</tr>
<tr>
<td>Germany</td>
<td>germani</td>
</tr>
<tr>
<td>Spain</td>
<td>sfarai</td>
</tr>
<tr>
<td>Romania</td>
<td>romania</td>
</tr>
<tr>
<td>Hungary</td>
<td>hungaria</td>
</tr>
</tbody>
</table>

The default location for stress assignment in Israeli Hebrew is the final syllable, but as noted above, it appears that when speakers do not succumb to the normative preference for final stress, penultimate stress takes over in some familiar or informal speech contexts. When it comes to gentilic terms and residents of cities, +ai tends to be associated with a more normative and more formal style, while +i with penultimate stress is typically familiar and informal.

The different stress assignment defaults for +i and +ai in terms referring to residents of locations and members of nations (penultimate and final, respectively) may be helpful in identifying the underlying suffix when the stem ends with a. It is difficult to tell in such cases whether we are dealing with +i that is appended to the base a, or with an atomic +ai that has been added to a stem, resulting in the elision of the a at the end of the stem. The argument for an atomic +ai and concomitant elision of the base a is that for many of these agentive +ai forms there exist parallel +i forms that constitute attributive adjectives. There are separate attributive +i-adjectives corresponding to bona fide cases of adjectival +ai forms, as in the following:

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>MediaType</td>
<td>matematika</td>
</tr>
<tr>
<td>Politic</td>
<td>politika</td>
</tr>
<tr>
<td>Engineering</td>
<td>engineer</td>
</tr>
<tr>
<td>Mathematics</td>
<td>matematika</td>
</tr>
<tr>
<td>State</td>
<td>medinai</td>
</tr>
<tr>
<td>Argentina</td>
<td>argentini</td>
</tr>
</tbody>
</table>

There are also adjectival +i counterparts of ai forms, which may or may not be derived from a base a plus +i, including some gentilic terms:

| Derived ai forms ending with a, which alternate with +i adjectives |
|--------------------|------|------|
| Base | Gloss | +ai Form | Gloss | Adj | Gloss |
| handesai | engineering | handai | engineer/mechanic | handai | of engineering |
| medinai | state | medinai | statesman | medinai | of state |
| politi | politician | politi | political | politi | |
| matematikai | mathematician | matematikai | mathematic | matematikai | |
| argentini | Argentinian (N/Adj) | argentini | same, Adj. | argentini | same, Adj. |
| palestini | Palestinian (N/Adj) | palestini | same, Adj. | palestini | same, Adj. |

Telling whether a particular +i-form with an a base involves +i or +ai is reasonably straightforward when each suffix is semantically distinct from the other. Recognizing the distinction is simple when the +ai form is a noun (usually agentive), while the +i counterpart designates an attributive adjective. But +i forms are not always attributive, nor is +ai necessarily restricted to nouns. There are areas of semantic and function overlap in which both affixes legitimately coexist, and where it is difficult to tell them apart. This situation happens in some +i and +ai forms that are derived from proper nouns constituting place names and nation names. These nouns form either attributes of these names, or humans characterized by these attributes, and there are no ‘minimal pairs’ of the palestini ~ palestinai type. Thus, it is difficult to establish a priori whether an atomic +ai is involved, or an +i is appended to a stem ending with an a in some terms referring to residents of geographical places:

| Residents of geographical entities ending with +ai, where the stem itself ends with a |
|-----------------|-------|-------|
| Base | Gloss | With +ai | Gloss |
| beerteva | Beer Sheva | beertevai | (resident) of Beer Sheva |
| petatzikva | Petah Tikva | petatzikvai | (resident) of Petah Tikva |
| xefai | Haifa | xefai | (resident) of Haifa |
| afulai | Afula | afulai | (resident) of Afula |
Similarly, in gentilic terms, as the following:

<table>
<thead>
<tr>
<th>Gentilic names ending with ai where the stem itself ends with $a$</th>
<th>Base</th>
<th>Gloss</th>
<th>With ai</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>amerika</td>
<td>America</td>
<td>amerikai/amerikani</td>
<td>American</td>
<td></td>
</tr>
<tr>
<td>afrika</td>
<td>Africa</td>
<td>afrikai/afrikani</td>
<td>African</td>
<td></td>
</tr>
<tr>
<td>kostarika</td>
<td>Costa Rica</td>
<td>kostarikai</td>
<td>Costa Rican</td>
<td></td>
</tr>
</tbody>
</table>

While minimal pairs like palestina Palestinian (N) ~ palestini Palestinian (Adj) support an atomic +ai alongside +i, there is no *ameriki or *afrika, nor do we find *beerševi, *petaxtikvi, *seyfi, *afuli, *raanani, or *vini. A simple solution would be to use the default stress assignments for the two suffixes for the group of residents of places and members of nations, i.e., +i preceded by stress and +ai with final stress. In other words, surface [ai] with final stress (beerševai, vinai etc.) will suggest an underlying atomic +ai (beerševa+ai, vina+ai), where a stem-final $a$ will be elided before another $a$; if the surface form ends with penultimately-stressed [ai] (amerikai, afrikai, etc.), it will be interpreted as a+i (amerika+i, afrika+i). That amerikai and afrikai are derived from $i$ rather than from +ai is also suggested by their respective alternants, amerikani and afrikani, where the vowel sequence is broken by the unmarked nasal $n$, probably a remnant of foreign noun/attributes which originally had +an, +ain or +ien, as can also be seen in:

<table>
<thead>
<tr>
<th>Gentilic terms with ani suffixation of foreign origin</th>
<th>Base</th>
<th>Gloss</th>
<th>With +a+n+i</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>kuba</td>
<td>Cuba</td>
<td>kubani</td>
<td>Cuban</td>
<td></td>
</tr>
<tr>
<td>korea</td>
<td>Korea</td>
<td>koreani</td>
<td>Korean</td>
<td></td>
</tr>
<tr>
<td>venezuela</td>
<td>Venezuela</td>
<td>venezuelani</td>
<td>Venezuelan</td>
<td></td>
</tr>
<tr>
<td>čile</td>
<td>Chile</td>
<td>čileani</td>
<td>Chilean</td>
<td></td>
</tr>
</tbody>
</table>

Had the underlying suffix been +ai, it would not have been broken by a supporting consonant such as $n$. The intrusive unmarked $n$ does not necessarily have to originate from +an, +ain or +ien.

Alternatively, a basic /l/, stemming from the underlying feminine suffix +i, may resurface to break the a+i sequence, as in the following:

<table>
<thead>
<tr>
<th>Names of residents of geographical entities with +$a$ +n+i suffixation</th>
<th>Base</th>
<th>Gloss</th>
<th>With +ani</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>távya</td>
<td>Tiberias</td>
<td>távyaní</td>
<td>(resident) of Tiberias</td>
<td></td>
</tr>
<tr>
<td>herceliya</td>
<td>Herzliya</td>
<td>herceliyaní</td>
<td>(resident) of Herzliya</td>
<td></td>
</tr>
<tr>
<td>beerševa</td>
<td>Beer Sheva</td>
<td>beeršeyani</td>
<td>(resident) of Beer Sheva (more colloquial alternant of beerševai)</td>
<td></td>
</tr>
</tbody>
</table>

Gentilic terms and residents of geographical locations with penultimate stress may occasionally also require some ad hoc insertions (followed by pre-i stress assignment), as in bürma Burma > burmezi ‘Burmese,’ and e(y)ropi ‘European’ > e(y)ropéi. Sometimes both +ani and +ai coexist: ayapoki ‘Asian’ > ayapoki ‘Asian’ > ayapoki. None of these insertions ever occur when the form ends with finally-stressed +ai, e.g., no afuda > *afulani, *afulati, or *afulai(ezi). The reason is that an underlying +ai is never broken. Beersheyani is possible, since for this alternant the suffix is +i, not +ai, which also explains why there is no *beeršeyani. Thus, Bolozky (2000) shows how a difference in stress placement would again enable us to distinguish between similar but separate word formation patterns, referring to gentilic terms and to residents of geographical places. The distinction is enabled by an underlying +i with penultimate stress, vs. an underlying +ai with final stress. As in all similar cases involving the nisba +i and the suffix +ai, final stress (in this case associated with atomic +ai) tends to be associated with a higher degree of formality.

**Conclusions**

In the realm of phonology, most of the variation observed in Israeli Hebrew is due to speech style, as manifest in degree of casualness and/or rate of speech. It is reflected primarily in reduction, assimilation, merger, etc., but there is also some variation in stress assignment associated with colloquial and "familiar" speech registers.
In the morphological component, variation is manifest primarily in the choice of different morphological patterns (or the location for stress assignment) to capture closely related semantic notions. Occasionally, the semantic target is the same, and the different patterns are chosen on the basis of speech style alone (literary/everyday, formal/casual, etc.). In other cases, the choice is based on certain inherent distinctions, such as syntactic category (usually verb vs. non-verb), or closely related semantic fields (e.g., agent/instrument).

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THE STUDY OF MODERN HEBREW SYNTAX

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This article presents a survey of previous work on Modern Hebrew syntax. Due to the magnitude of this literature, this survey cannot attempt to refer comprehensively to all of the items within this field. Instead, it outlines the general directions and achievements of research with representative illustrations. It concludes with some proposals relating to the study of syntax in the Corpus of Spoken Israeli Hebrew.

Debate over Linguistic System, Object of Study

The structure of the Modern Hebrew language emerged at the time of its formation, the beginning of the twentieth century, from a combination of features that are characteristic of different historical layers of the language. In broad terms, the morphology is based on Biblical Hebrew, whereas the syntax is closer to post-Biblical Rabbinic Hebrew (cf. Saenz-Badillos 1993). The language was also exposed to external linguistic influence, mainly from European languages, in its lexicon and also, to some extent, in its syntax.

During the first decades of the language's existence, attention directed by scholars and teachers to its grammar, in both its written and spoken form, followed almost exclusively a prescriptive rather than a descriptive purpose. There was a particular reluctance to describe objectively the grammatical structure of the spoken language. It was not until the 1950s that such synchronic structural analyses began. It was only in the 1950s that scholars