# ENCYCLOPEDIA OF HEBREW LANGUAGE AND LINGUISTICS

## Volume 3
## P–Z

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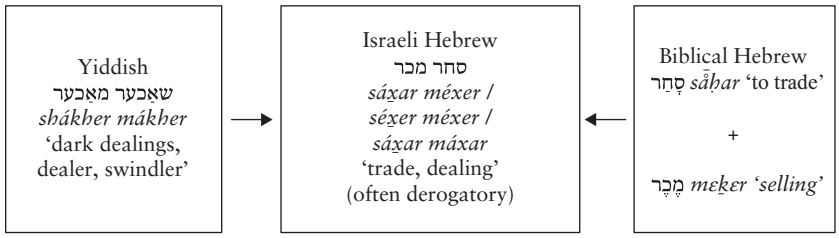


Yiddish שאַכער *shákher* < German *Schacher* < Yiddish **sákher* < Hebrew סָחַר *sāḥar*

Figure 4. סחר מכר *sáχar méxer*.

Often in PSM, the source-language not only dictates the choice of root, but also the choice of noun-pattern, thus constituting a camouflaged influence on the TL morphology. For example, the phono-semantic matcher of English *dock* with Israeli Hebrew מבדוק *mivdóq* could have used—after deliberately choosing the phonetically and semantically suitable root ק"בד *b-d-q* 'to check' (Rabbinic), 'to repair' (Biblical)—the noun-patterns *mi*▫▫*a*▫*á*, *ma*▫▫*e*▫*á*, *mi*▫▫*é*▫*et*, *mi*▫▫*a*▫*áim*, etc. (each ▫ represents a slot where a radical is inserted). Instead, *mi*▫▫*ó*▫, which was not highly productive, was chosen because its [o] makes the final syllable of מבדוק *mivdóq* sound like English *dock*.

Traditional classifications of borrowing, such as Haugen (1950), ignore PSM and categorize borrowing into either substitution or importation. However, PSM is a distinct phenomenon, which operates through simultaneous substitution and importation. Yet, PSM ought not to be confused with calquing, as the latter lacks the phonetic matching component. Recognizing PSM carries significant implications of hybridity and multiple causation not only for lexicology and comparative historical linguistics, but also for sociolinguistics, cultural studies, and revivalistics (revival linguistics).

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## Phonological Competence, Acquisition of

The development of children's phonology is guided by hierarchies of universal markedness constraints. For example, a CV syllable is acquired before a CVC syllable and the consonant *t* is acquired before *č*. Markedness constraints are based on typological implicational relations (e.g., if a language has *č* it also has *t*, but not vice versa), acoustic accessibility, and articulatory complexity (de Lacy 2006).

Children's phonological development is studied with reference to the different layers of word structure: prosodic word (number of syllables), stress (metrical structure), syllable structure, and segments. As these layers are hierarchically organized (Nespor and Vogel 1986), there are also manifestations of interdependencies.

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## 1. Prosodic Word (Number of Syllables)

The prosodic word is developed syllable by syllable, starting with monosyllabic words (Ben-David 2001; Adam 2002).

The best studied stage of development is the Minimal Word (MW) stage (1c), where the size of children's productions is maximally two syllables (Demuth 1996). During this stage, children's productions rest comfortably in the universally unmarked size of the word, which is known from studies on adult language to be a disyllabic foot in Hebrew (Bat-El 2005), or bimoraic in other languages. The Sub-MW stage (1a), where children's productions are monosyllabic, is rather short, and often not observable in typically developing children. However, in atypically developing children, whose development is very slow, this stage may extend over a longer period of time (Adam and Bat-El 2008b). It should be noted that the distinction between stages is not abrupt, and during every stage, there are remaining forms from the earlier stage and new forms from the subsequent stage (see Adam 2002 for intermediate stages). However, the forms characterizing a particular stage are statistically dominant.

As can be observed from (1) below, the development of the prosodic word starts with the stressed and/or final syllable, as these are the most acoustically prominent syllables (Echols and Newport 1992; Gerken 1994). Therefore, target words with penultimate stress are produced as disyllabic prior to target words with final stress (Pre-MW (1b)), since in the latter, the final syllable is also the stressed one.

In terms of relations between adults' targets and children's productions, child language exhibits a process of syllable truncation, affecting mostly non-prominent target syllables, i.e., those that are not stressed or final.

(1) The development of the prosodic word

| | Stage | מתנה *mataná* 'present' | פומלה *poméla* 'pomelo' | מוזיקה *múzika* 'music' |
|---|---|---|---|---|
| a. | Sub-MW | na | me / la | mu / ka |
| b. | Pre-MW | na | méla | múka |
| c. | MW | taná | méla | múka |
| d. | Post-MW | mataná | poméla | múzika |

## 2. Stress

As children produce nouns before verbs, and stress in Hebrew nouns is at least partially lexical (cf. בוקר *bóker* 'morning' versus בוקר *bokér* 'cowboy'), children learn the position of stress lexically, and thus make very few mistakes. That is, they rarely shift the target stress to another syllable (Ben-David 2001; Ben-David and Berman 2007).

Nevertheless, the preference for the universal unmarked foot is evident in children's early productions (Adam and Bat-El 2008a; 2009). It has long been established that the unmarked foot is trochaic, consisting of two syllables (or two moras), where the first is strong (stressed) and the second is weak, e.g., רגל [régel]F 'foot', רכבת ra[kévet]F 'train'. Although Hebrew is predominantly iambic (about 75 percent, in a dictionary as well as in tokens of child-directed speech), children show a preference for the trochaic foot in the very early stages of speech. They attempt more trochaic target words than iambic (i.e., more words with penultimate stress than with final stress), they produce more trochaic words than iambic, and they truncate more iambic words to monosyllabic (e.g., מתנה *mataná* 'present' > *ta*) than trochaic ones. The preference for trochee manifested in early productions gradually vanishes later on, if the target language exhibits higher frequency of iamb, as it is the case in Hebrew.

## 3. Syllable Structure

Children start their speech with the universally unmarked CV syllable (2a), which consists of an onset consonant and a nucleus vowel. From this point, the syllable structure grows in its complexity and thus in its markedness.

The CVC syllable (2b) is more marked than the CV syllable, due to the additional perceptu-

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(2) The development of the syllable

| | Stage | Child | Target | | |
|---|---|---|---|---|---|
| a. | CV | to | *tov* | טוב | 'good' |
| | | ta | *sávta* | סבתא | 'grandmother' |
| b. | CVC | dag | *dag* | דג | 'fish' |
| | | pit | *kapít* | כפית | 'teaspoon' |
| c. | V | apít | *kapít* | כפית | 'teaspoon' |
| | | édet | *larédet* | לרדת | 'to go down' |
| d. | CCV(C) | zvuv | *zvuv* | זבוב | 'fly' |
| | | θnáim | *šnáim* | שניים | 'two' |

ally weak coda, and the V syllable (2c) is more marked than the CV due to the absence of the perceptually strong onset.

The onsetless syllable V (2c) appears after the codaed syllable CVC (2b), because the former is produced only in polysyllabic words. During the monosyllabic stage words must have at least one consonant (Ben-David 2001) in order to maintain some lexical contrast (see Nespor et al. 2003 for the role of consonants in lexical contrast). This restriction also explains the appearance of the highly marked VC syllable during the monosyllabic stage, mostly for monosyllabic VC targets (e.g., אף *af* 'nose'). Note, however, that atypically developing children may produce consonant-free words (Tubul-Lavy 2005; Adi-Bensaid 2006; Adi-Bensaid; and Tubul-Lavy 2009) to the extent that words such as מתוק *matóq* 'sweet', ירוק *yaróq* 'green', and גדול *gadól* 'big', for example, are all produced identically as *aó*.

The onsetless V syllable (if not as such in the target) appears in the course of development of the prosodic word (see above, §1), when the addition of a syllable is broken into two steps: the first step adds the vowel (the most prominent element in the syllable) and the second one adds the consonant (e.g., *du* > *adu* > *kadu* for כדור *kadúr* 'ball').

The last syllable-type acquired by Hebrew-acquiring children consists of a complex onset (2d), which is more marked than a simple onset due to the enhanced articulatory effort and the reduced perceptual accessibility of adjacent consonants (complex codas are rare in Hebrew and thus ignored here).

The development of the syllable is partially conditioned by its status in the prosodic word. For example, a coda, and thus a CVC syllable, first appears in word-final position and only later in word-medial position (e.g., *papá* > *papár* > *parpár* פרפר 'butterfly'). The V e.g., syllable, as noted above, appears mostly in word initial position of polysyllabic productions.

In terms of relations between adults' targets and children's productions, child language exhibits a process of consonant deletion (e.g., מדבקה *madbeqá* 'sticker' > *abaqá*, שמונה *šmóne* 'eight' > *móne*), which simplifies syllable structure in accordance with their grammar. Simplification of complex onset via epenthesis (דלי *dli* 'bucket'> *deli*, שניה *šniyá* 'second [fs.] > *šiniya*) or metathesis (גבינה *gviná* 'cheese' > *givná*, פסנתר *psantér* 'piano' > *pastér*) is rather rare.

## 4. Segments

Segmental development also proceeds from the unmarked towards the marked, though in this case there is a greater degree of inter-child variation within and among languages.

*Consonants*: In terms of manner of articulation children start with stops and then continue to fricatives and affricates. As for place of articulation, coronals and labials are preferred in early development, while dorsals appear later on. Consequently, there are various consonant-substitution processes affecting target words, such as fronting (e.g., כובע *kóva* 'hat' > *tóva*) in favor of the less marked place of articulation (coronal), and deaffrication (e.g., צב *tsav* 'turtle' > *tav*) in favor of the less marked manner of articulation (stop). Such processes, of course, are also found in the acquisition of other languages (see Grunwell 1982 for English).

The acquisition of consonants is partially conditioned by their position in the syllable. Following the universal Sonority Cycle Principle (Clements 1990), obstruents are preferred in

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(3) The development of the prosodic word: Syllables and segments

| | Prosodic Word | Syllable | Segments | *mataná* 'present' מתנה | |
|---|---|---|---|---|---|
| a. | Sub-MW | | | *na* | |
| b. | MW | V | | *aná* | |
| c. | | CV | $C_iV.C_i$… | *naná* | ← consonant harmony |
| d. | | | CV.C… | *taná* | |
| e. | Post-MW | V | | *ataná* | |
| f. | | CV | $C_iV.C_i$… | *tataná* | ← consonant harmony |
| g. | | | CV.C… | *mataná* | |

onset position. This constraint may trigger deletion of an obstruent in coda position (e.g., דבק *déveq* 'glue' > *déve*), substitution of a fricative with a stop in onset position (e.g., אפרוח *efróax* 'chick' > *póax*).

One of the well-known types of consonant substitution is consonant harmony, whereby two different non-adjacent consonants in the target word are identical (or similar) in the child's productions, e.g., פנס *panás* 'torch' > *nanás*, קלמנטינה *qlemantína* 'tangerine' > *tatína*. As demonstrated below, consonant harmony is partially predictable in the course of development (Ben-David 2002). The prosodic word grows syllable by syllable (see above, §1), where the nucleus vowel appears before the onset consonant (see above, §3). The onset consonant appears in two steps: first as a copy of the following consonant (3c, f), i.e., consonant harmony, and then as the target consonant.

As a result of this development, consonant harmony is, in most cases, limited to two consonants at the left edge of the children's productions (קלמנטינה *qlemantína* 'tangerine' > *tatína*, תוכי *túki* 'parrot' > *kúki*), where a preceding vowel is possible (מתנה *mataná* 'present > *ananá*). In Hebrew, consonant harmony usually involves two onsets, though there are a few examples of onset and coda (אוירון *avirón* 'airplane' > *anión*, גרביים *garbáim* 'scoks' > *gamáim*), which is rather common in English.

In atypical development, consonant harmony is less restrictive, often spanning more than two segments (הליקופטר *heliqoptér* 'helicopter' > *pepipopé*) and not always confined to the left edge of the word (סוכריות *sukaryót* > 'candies' *suyayót*). This is due to asynchronization in the development of the segmental and prosodic layers of the word (Tubul-Lavy 2005; Bat-El 2009).

*Vowels*: Vowels in general, including the five vowels of Hebrew, are acquired relatively fast (Ben-David 2001), where the low vowel *a* comes first, followed by the high vowels *i* and *u*, and ending with the mid vowels *o* and *e*. This order follows the dispersion principle (Lindblom 1986), which optimizes the perceptual contrast among vowels (e.g., *i* and *a* are more contrastive than *e* and *a*). Due to the fast development of vowels, cases of vowel substitution are much rarer than consonant substitution, but the direction of substitution is often towards the less marked vowel (עגולים *igulím* 'circles' > *agaím*), though there are also cases of vowel harmony (כריש *kariš* 'shark' > *kiríš* ). Again, these stages of development are often unobservable in typical development, but in atypical development, which stretches over a longer period of time, the stages are easily detectable (Adam and Bat-El 2008b).

## 5. Conclusion

The acquisition of phonology involves a gradual development of phonological grammar towards the grammar of the target language. Universal principles play a major role in this process, in particular in early stages. When children's grammar grows in its complexity, the effect of the ambient language becomes more dominant. During every stage of development the grammatical principles which impose particular structures trigger phonological processes such as deletion and substitution. However, children are selective learners (Schwartz 1988), tending to select target words that do not require many processes. For examples, before the MW stage (1c), children rarely attempt target words with three or four syllables (Demuth and Fee 1995). That is, although the grammar is evaluated on

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the basis of the children's productions, there is evidence that it also affects their perception.

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# Phonology: Biblical Hebrew

## Introduction

This entry treats the phonology of Biblical Hebrew, though on occasion we will refer to data from beyond the domain of BH *per se*. The methodology utilized here is that of historical linguistics, especially since the relevant information covers more than a thousand years (for an earlier treatment, on which the current essay is largely based, see Rendsburg 1997; for amplification of some of the topics treated herein, see Kutscher 1982:12–30; for theoretical approaches to the subject → Phonology, Generative and Phonology, Optimality Theory: Biblical Hebrew; for a synchronic description of the Tiberian tradition of Hebrew on the basis of medieval sources → Tiberian Reading Tradition).

The subject of Biblical Hebrew phonology is complicated by the fact that ancient Hebrew was written with a 22–consonant alphabet—though as we shall see, Hebrew possessed more than 22 consonantal phonemes, so that some of the graphemes (letters) served double duty. Moreover, vowels were not represented in the

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