

Transcription of Spoken Hebrew

The spoken medium is acoustic, linear and temporally extended. Therefore, visual transmission is necessary in order to enable any research of speech, except, perhaps, for such that focuses on individual, small units. Even in this latter case, one needs to transmit sound into the visual medium in order to publish the results. The linguist must therefore use a transcript of the spoken text.

Transcript types range from texts written in the standard orthography using accepted punctuation to the narrowest phonetic transcription. In addition, prosodic notation can be included, i.e., lexical accent or intonation. The type and extent of transcription is bound by both theoretical orientation and research agenda. There is no way of transforming the infinite range of acoustic features into phonetic symbols. Therefore, any type of transcription, including the narrowest one, must be anchored in some theoretical ground. The theoretical ground depends on research goals (Ochs 1979; Du Bois 1991; Edwards 1993:3-5; Crowdy 1994:25; Kennedy 1998:§2.6.4.2; Blanche-Benveniste 1997:63).

Fig. 1 represents a few of the possible transcriptions of a single spoken utterance.

Narrow transcription:	maχaʔ	anosəʔabajta
Broad transcription:	maχaʔ	anosea abajta
Phonemic transcription 1:	maxar	ani nosea habajta
Phonemic transcription 2:	maħar	?ani noseʔ habajta
Orthographic transcription:	מחר אני נוסע הביתה	
Gloss:	tomorrow I travel homeward	
Translation:	'Tomorrow I am going home.'	

Fig. 1: Types of segmental transcription

The narrow transcription in the first line represents as closely as possible the actual phonetic string, whereas the broad transcription in the second line represents an approximation to the phonemically perceivable string. The third and the fourth lines represent each a phonological interpretation of the above. Whereas the first phonological representation suggests the detachment of the phonemic system of this speaker from other types of Hebrew, the second may suggest their attribution to a

single, unified system. The last line detaches itself from the phonology of the spoken utterance and transmits it into the accepted orthographic representation.

The IPA (= International Phonetic Alphabet; <<http://www.langsci.ucl.ac.uk/ipa/>>; International Phonetic Association 1999; cf. Esling 2010) is the best and most commonly used system for representing speech in narrow phonetic transcription. For any other uses, either the IPA or other transcription systems can be used, notably the one used in Semitic linguistics. Note the following equivalents between the IPA symbols (above) and the Semitic ones (below), which are relevant for spoken Hebrew (in both the Ashkenazi-standard pronunciation and the Mizrahi continuum of pronunciations) (Table 1).

	Bilabial	Labiodental	Alveolar	Postalveolar	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b	t d				k g			ʔ
									ʕ
Nasal	m	n							
Trill		r					R		
							r		
Fricative		f v	s z	ʃ ʒ		x	χ ʁ	ħ	h
				ʂ ʐ		ħ	ħ r	ħ	
Affricates			ts	tʃ dʒ					
			c (ʕ)	č ġ					
Approximant	w				j			ʕ	
					y			ʕ	

Table 1: IPA vs. Semitic symbols

The rhotic set [r], [R], [ʁ], which are variants of a single phoneme in Hebrew, are usually represented by {r}; the variants [x] and [χ] are usually represented in the transcription of standard Israeli Hebrew by {x} for both etymological /ħ/ (earlier also </ħ/), as well as for etymological (lenis) [k]. The affricate [ts] is etymologically equivalent to older /ʕ/, and is thus represented by some. However, its usual transcription for Modern Hebrew is {c}, which is more convenient than the two-letter {ts}. [tʃ] and [dʒ] are commonly represented by {č} and {ğ} respectively.

In broad phonetic transcription, the five phonemic vowels of spoken Hebrew are represented by i, e, a, o, u, without regard to their actual respective phonetic realizations.

Some authors, notably during the first phase of scientific research of spoken Israeli Hebrew, used typographical means that were more apt for publication (e.g., Blanc 1956; 1964; Rosén 1956). A phonetic transcription system for use in computers without deviating from the ASCII character set is SAMPA (Speech Assessment Methods Phonetic Alphabet), used in some recent work on Hebrew (<<http://www.phon.ucl.ac.uk/home/sampa/hebrew.htm>>).

For phonological research, as well as for morphophonological and morphological research, phonetic transcription in relative measures of accuracy is a necessity. The study of allophonic variation, phonological and morphophonological rules, cliticization and affixation will not be apparent unless studied using a phonetic transcription in various degrees of accuracy. Orthographic transcription will prove useless for any research in these areas. Orthographic transcription has, nevertheless, the merit of arbitrariness and detachment from speech, to the extent that users, being aware of the differences between the spoken and the written, will not be deceived by inaccuracies in transcription (Izre'el 2005). Orthographic transcription can be of use for higher level of units, be it in the study of syntax, pragmatics, or information structure, as well as for lexical and phraseological studies. In any case, students of spoken languages must always listen to the recording of the transcribed text for their research.

In addition to transcription of the segmental units of spoken language, one needs a representation of its prosodic features. In Hebrew, these include lexical stress and intonation. Stress (or accent) is phonemic in Hebrew and therefore is a defining feature of many Hebrew words, content and function words alike (Schwarzwald 2001:§1.2.4; Becker 2003; Coffin and Bolozky 2005:§2.7; Chayen 1973: §4.4). The latter, however, are usually cliticized to content words, forming with them prosodic (or phonological) words. A prosodic word will therefore be defined as carrying a single main stress, indicated in the IPA system as the sign {'}: {'beɡed} 'cloth'. More commonly, the vocalic syllabic nucleus carrying the stress is supplied with an acute accent: {béged}. Long stretches, be it lexical words, morphosyntactic words, or

prosodic words, may also carry a secondary stress, marked in IPA by {₁} or, alternatively, by a grave accent {` } above a vowel, e.g., {kàdurégel} ‘football’ (Boložky 1982). The stretch of speech cited above (fig. 1) carried in fact two main accents and a secondary one:

ma'χaʁ əno,ʂəa'baʃta

where the pronoun /ani/ ‘I’ is clitic to the participle /nosea/ ‘travel,’ and both form a phonologic and prosodic cohesive unit with the following /habajta/ ‘homeward’.

Thus, transcription not only takes cognizance of segmental units but also of prosodic ones. Words are the lowest level where prosodic segmentation is meaningful for Hebrew (where lexical tones are not a component of the language). Transcription of spoken language must also include notation for levels above words (phonological/prosodic or morphosyntactic). As with the case of segments and words, notation of higher-level units is subject to theoretical orientation and goals of research. One approach is the traditional one, naively indicating syntactical units by means of commas and periods, with additional notation of prosodic structures by exclamation marks and question marks. The latter are added, however, not only to indicate the rising intonation curve of yes/no questions, but of any question type of question, even ones that do not carry prosodic indications but only lexical or grammatical ones (e.g., “wh questions”).

Another system which takes syntax as its main goal of research is the one known as “grid analysis” (French “analyse en grille”; Blanche-Benveniste 1990). To achieve a syntactic analysis of a spoken text, the transcribed text (usually transcription in the standard orthography yet without punctuation) is made on two axes, which represent the syntagmatic and paradigmatic axes of linguistic structure. The syntagmatic-horizontal axis represents the syntactic clause and its components, whereas the paradigmatic axis represents syntactic units that may occupy the same position within the clause, including repetition, disfluency phenomena, and their like (fig. 2).

ואתה אה מוכן עם מסמכים להראות לבית המשפט שהחבר'ה האלה משקרים ... אתה מגיע לבית המשפט אתה יודע שאנשים משקרים בתצהירים שלהם ואתה צריך לשכנע שופט או שופטת שלא בדיוק מתעניינים בתיק שהחבר'ה האלה משקרים ושהגרסה האמיתית הנכונה והצודקת היא של הלקוחות שלך

and you are prepared with documents to show the court that these guys lie in their affidavits you get to court you know that affidavits are false and you have to persuade a judge or a she-judge that are not really interested in the case that these guys lie and that the true version the right (one) and the justified (one) is (that) of your clients

(2)

ו אתה אה מוכן עם מסמכים להראות לבית המשפט שהחבר'ה האלה משקרים בתצהירים שלהם		
אתה	מגיע	לבית המשפט
אתה	יודע	שאנשים משקרים בתצהירים שלהם
ו אתה	צריך לשכנע	שופט
או שופטת שלא בדיוק מתעניינים בתיק שהחבר'ה האלה משקרים		
ו שהגרסה האמתית		
הנכונה		
ו הצודקת היא של הלקוחות שלך		
and you are prepared with documents to show the court that these guys lie in their affidavits		
you get	to court	
you know	that affidavits are false	
and you have	to persuade a judge	
or a she-judge that are not really interested in the case that these guys lie		
and that the true version		
the right (one)		
and the justified (one) is (that) of your clients		

Fig. 2: (1) Preliminary transcription; (2) Transcription in grid (Yatziv 2002a:426-428; -Malibert 2002b:269)

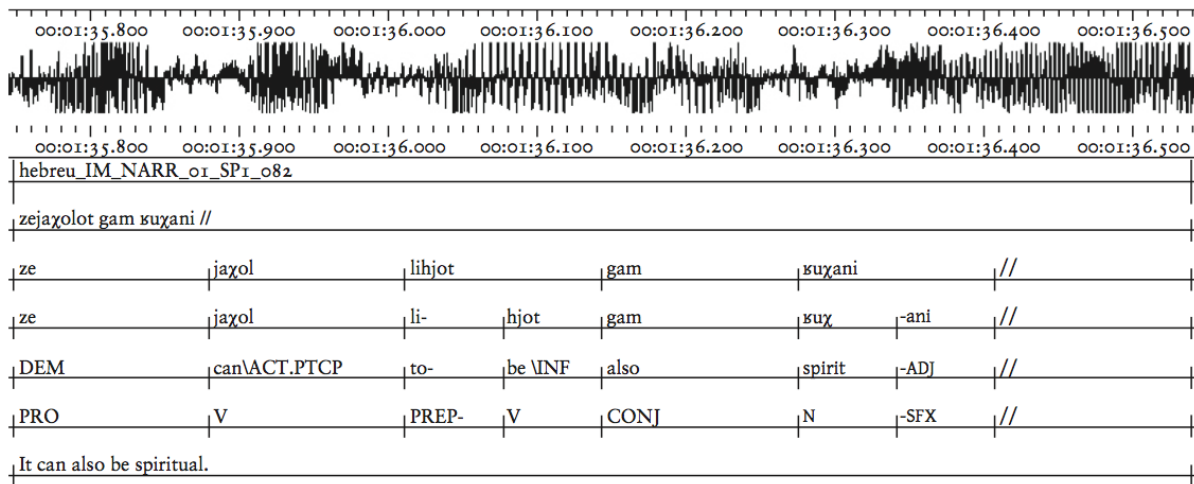
A different method takes prosody as basic to discourse structure and therefore bases its transcriptional strategies on prosodic rather than on syntactic units. The transcribed text, whether in phonetic or orthographic transcription, is segmented into intonation units and marks their boundary tones. This type of annotation is binary in its basic structure, indicating major or minor boundaries: a major boundary is one that is perceived as terminal, i.e., indicating that the speaker has finished this stretch of speech, or continuing, i.e., indicating that the speaker is still keeping this turn. This binary system may be enhanced by other notations, of which

the most commonly used in Hebrew transcription is the final rise, usually indicating mainly yes/no questions. Symbols for this type of markers range, and can be similar to orthographic punctuation symbols (. , ?) or other (|| | /) (for the first see, e.g., Maschler 2009; for the latter see Izre'el 2002). For conversation analysis other notations are usually added, e.g., ones for overlaps, non-linguistic sounds which may or may not carry discourse meaning (e.g., < creak >; < cough >), pauses, and many others (Izre'el 2002:290-291; Maschler 2009:xi-xii).

S: I wanted you to turn here to the right,	ס: רציתי שתקחי פה ימינה
so that you exit from uh ...	לצאת דרך אָה --
M: Never mind.	מ: לא משנה
We'll take another route.	אז ניסע דרך אחרת
(Wha' ?)	(אָה \)
Why are you so stressed?	מה את לחוצה
You husband is not ho- ...	בעלך לא גר --
he is not home,	הוא לא בבית
and you are staying over with me.	ואת [ישנה אצלי]
S: That's not the point.	ס: [לא את זה]
That is for your sake!	בשבילך

Fig. 3: Orthographic transcription segmented into intonation units (Izre'el 2002:298)

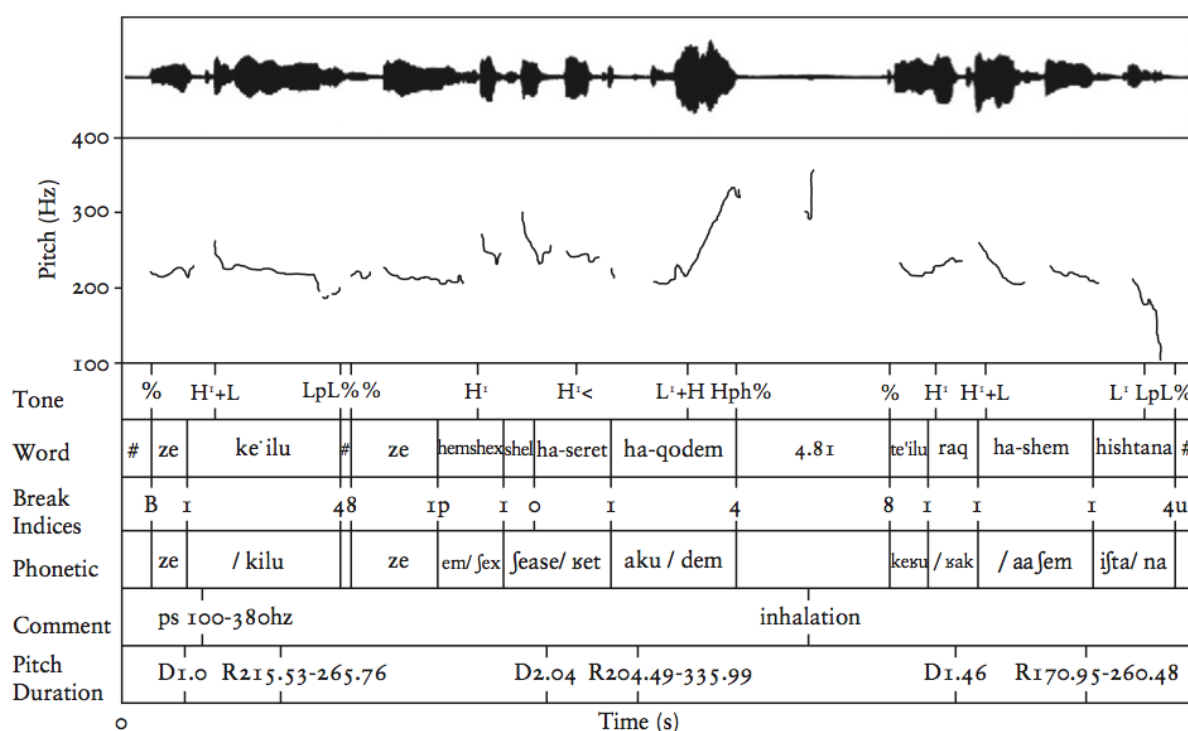
A more comprehensive transcription has been used for the Hebrew part of The Corpus of Afro-Asiatic Languages (CorpAfroAs; <<http://web.me.com/aminamettouchi/CORPAFROAS/>>; Mettouchi and Chanard 2010), where broad phonetic transcription, along with phonemic and morphological notation, has been combined with prosodic segmentation and presented aligned with the actual recordings, using an enhanced version of the software ELAN (<<http://www.lat-mpi.eu/tools/elan/>>).



Transcription of: זה יכול להיות גם רוחני

Fig. 4: From the Hebrew section of CorpAfroAs

Finally, an elaborate prosodic transcription based on the ToBI (Tone and Break Indices) annotation system (Beckman, Hirschberg, and Shattuck-Hufnagel 2005) has been introduced and adapted for Israeli Hebrew (IH-ToBI; Green and Tobin 2009; Green 2010), annotating internal-unit pitch meaningful accent events as well as boundary tones (fig. 5).



Transcription of: זה באילו זה המשך של הסרט הקודם באילו רק השם השתנה

Fig. 5: IH-ToBI (Green 2010:71)

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