The Basic Unit of Language: A View from Spoken Israeli Hebrew

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Background and premises

Until recently, spoken varieties of written languages did not usually draw serious scholarly attention, as they were regarded as degraded forms of the written varieties, consisting of faulty configurations unworthy of description. Exceptions were few, of which the use of spoken French data in the magnum opus of Damourette and Pichon (1911-1940) is a prominent example. Interest in the spoken medium and systems of language realized in that medium have arisen in the last decades, notably with the growing availability of large computerized corpora. Linguists have begun to realize that spoken varieties have structure of their own and therefore deserve serious, non-trivial academic attention. As against the earlier view of the written language as superior to the spoken one, 20th century linguistics is said to be inclined to hold the spoken language as primary, and writing as “a means of representing speech in another medium” (Lyons 1968). Hockett (1958) writes: “Old habits die hard. Long after one has learned the suitable technical vocabulary for discussing language directly, rather than via writing, one is still apt to slip. It should afford some consolation to know that it took linguistic scholarship a good many hundreds of years to make just the same transition.” I am afraid that even the linguistic community has not yet overcome tradition.

Whereas the study of the oral features of language has a long tradition in itself, it has had the tradition of looking at the most obvious features of the spoken language, viz., phonetics and phonology. Morphology as reflected in speech has been given some attention only where the oral medium has implications for the production of words. The special lexicon of vernaculars, notably slang, has also attracted scholarly attention, as it had only minimal manifestations in writing. Syntactic structures of spoken languages have hardly been studied in their own right. Even when linguistics started to show an interest in the linguistic system of speech, syntax seemed to be a stepchild. It still does. Comprehensive treatments of complete syntactic systems of spoken linguistic varieties are few and far between. Still, some significant contributions to the understanding of the syntactic structure of spoken language have nevertheless been made. Of these, I would mention Blanche-Benveniste et al. 1990; Miller and Weinert 1998; Biber et al. 1999; Blanche-Benveniste 2000; Halliday 2004.

Biber et al. 1999 is the first large-scale, comprehensive grammar of English that tries to encompass recent advances in corpus linguistics and new ways of understanding the differences between written and spoken varieties and integrate them into a single systematic description. As
much as one can admire the results, one cannot ignore the heavy load of traditional linguistics on
the authors of this magnum opus, as noted by Sinclair (2001): “I have mentioned one or two
places where the commentary gets into difficulties because the language obstinately refuses to
divide itself into the categories prepared in advance for it.”

In this paper, I will try to lay down some basic features of the structure of spoken Israeli Hebrew,
which may turn useful for the study of other spoken languages, Semitic, Hamito-Semitic
(Afroasiatic), and beyond. I will first unfold some issues regarding prosodic structures, and then
go on to discuss the basic syntactic structures, which should then be integrated into the prosodic
structure of language to form a coherent, integrative unity with information structure and syntax.
Let me start the discussion with some premises:

— The primary, and by far the most frequent use of language is communication.
— The linguistic systems employed in the spoken medium, notably the language of everyday
conversation, are the most frequent of all linguistic systems in use.
— Therefore, proper linguistic attention must be drawn to the spoken language.
— Spoken language must be analyzed according to its own properties. We must detach
ourselves from any pre-conceptions about the structure of language based on its written
forms.
— Prosody is a formal feature of spoken language no less than segmental features.

The data upon which this research has been conducted is drawn from the Corpus of Spoken Israeli
Corpus (CoSIH). For the state of research, availability and dissemination of the corpus see
<http://www.tau.ac.il/humanities/semitic/cosih.html>.

Prosody

One of the basic differences between the oral and the written outputs of language is prosody.
Although the study of prosody (usually referred to as intonation) is centuries old, there are serious
gaps in our knowledge of this area. In his conclusion to the second edition of his comprehensive
book Intonation, Cruttenden (1997) sadly states: “[I]f we consider the full study of intonation to
involve sound–meaning correspondences, it is apparent that considerable advances have been
made at the phonetic end, but very little at the semantic end.” As implied from the list of
desiderata and recent achievements that precedes this statement, Cruttenden surely refers also to
the syntactic and pragmatic ends.

The growing interest in corpus linguistics and the significant developments in speech technology
have enhanced endeavors to better understand the interrelationship between segmental and
suprasegmental structure, or between prosody and syntax or discourse structure. This goes hand
in hand with a growing interest in the study of spontaneous, non-elicited speech, of which very
little work was done before. Recent research has found that spontaneous speech, notably
conversational speech, is very different from other spoken varieties, to the extent that it calls for special research.

One must regard prosody as a formal and fundamental structural system of spoken language no less than the ones related to its segmental structure. In fact, prosody is the main tool we use for parsing the uttered strings into meaningful units: while speaking, we employ it to break the segmental string into meaningful units; in listening, prosody is employed to interpret the meaning behind the segmented units and the relationships between them.

It has long been recognized that spoken language organizes itself in segments of speech that can be accounted for by their suprasegmental structure. The suprasegmental unit according to which segmentation of the spoken language can be made has been conceived to be dependent mainly on tone, or intonation, and has therefore been termed ‘tone group’, ‘intonation group’, ‘tone unit’, ‘intonation(al) phrase’, ‘intonation unit’, or the like. (e.g., Beckman and Pierrehumbert 1986; Halliday 1989; Selkirk 1984; Chafe 1994; Cruttenden 1997; Brazil 1997; Hirst and Di Cristo 1998; Halliday 2004), where the identified prosodic stretch may be identical or different in some respects among the various approaches. Different paths have been used to explicate the concept. Whatever approach is taken, it seems that there is a wide consensus that the prosodic group encapsulates a coherent structural, functional segmental unit, be it syntactic, semantic, informational, or the like, and defines its boundaries.

It seems commonly accepted that a prosodic group (henceforth: PG) is a coherent intonation contour, and some would define the prosodic group in these terms (Chafe 1994; Du Bois et al. 1992; Tao 1996; etc.). An example of a prototypical coherent PG can be seen in the following pitch curve, depicting the intonation contour of the Hebrew PG \( \textit{fo\chi\chiim mize} \) ‘One tends to forget about it’ (lit. forget [plm for the impersonal] from-it).

![Pitch Curve](image-url)
“A coherent intonation contour”, while rather easily perceivable, is very hard to define in itself by acoustic, formal terms, nor is it easy to define a prosodic group by any other internal criteria (Cruttenden 1997). In practice, segmentation of a discourse flow into prosodic groups is made by detecting their boundaries, whereas internal criteria are brought into consideration only secondarily (Cruttenden 1997). This practice has been used successfully in transcribing large corpora (Du Bois et al. 1992; 1993; Du Bois 2004; Cresti and Monegla 2005; cf. also Cheng, Greaves and Warren 2008, following the methodology of Brazil 1997). Theory has also inclined towards the delimitation of the prosodic group — or ‘intonational phrase’ — by reference to ‘boundary tones’: “Each intonational phrase provides an opportunity for a new choice of tune, and ... some parts of the tune serve to mark the phrase boundaries” (Pierrehumbert and Hirschberg 1990); “Rappelons que le rapport de dominance dépend uniquement des tones finals; il est insensible aux éléments intonatifs apparaissant ailleurs dans le groupe” (Blanche-Benveniste et al. 1990). Other theories tend to relate to the hierarchical structure of prosody, describing larger (higher) units as combinations of smaller (lower) ones (e.g., Nespor and Vogel 1986; Ladd 1986).

Some of these studies, based on phonological theory, still use syntactic constructs for defining prosodic units, although — as emphasized by Nespor and Vogel — the syntactic and prosodic units do not necessarily overlap. For recent theories of prosody see Ladd 1996; Gussenhoven 2004.

The major perceptual and acoustic cues for boundary recognition are the following: (1) final lengthening; (2) initial rush; (3) pitch reset; (4) pause (Cruttenden 1997; Du Bois et al. 1992; Hirst and Di Cristo 1998; for Hebrew see Amir, Silber-Varod and Izre’el 2004; Silber-Varod 2005; Mettouchi, Lacheret-Dujour, Silber-Varod and Izre’el 2007; Izre’el and Silber-Varod 2009). The final tone of a PG carries with it functional load in terms of discourse structure and information structure, with implications for syntax. Thus, for American English, three major categories of transitional continuity have been suggested, mainly suggesting interaction between the interlocutors: terminal, continuing and appeal. The first two mark final or non-final contour respectively; the third is, mutatis mutandis, equivalent to “yes-no” questions (Du Bois et al. 1992; for other systems see, inter alia, Hirst and Di Cristo 1998).

Given the problems of defining a coherent intonation contour, and the additional prosodic cues for defining the unit boundaries, I tend to prefer the term ‘prosodic group’ over ‘intonation unit’, although the latter term seems to become a commonly used term, henceforth abbreviated as PG. Either term should be confined to the phonological, suprasegmental features of the stretch, and another term, denoting the structural, segmental stretch confined by prosodic boundaries, should be sought. One such term, ‘speech unit’, has been suggested by Tao (1996; see below). To conform to the phonological term used here, ‘prosodic group’, the term ‘speech group’ may perhaps be preferred.
I have mentioned above transcriptional strategies of large corpora. The use of prosodic parsing in the C-ORAL-ROM corpus of Romance languages resulted in significant implications for the understanding of the structure of the languages comprising this corpus. The basic structural unit of spoken language is suggested to be the ‘utterance’, which is defined operatively and theoretically: “The operative definition of the utterance is such that every expression marked by a prosodic terminal break is an utterance. ... From our theoretical point of view, an utterance corresponds to the accomplishment of a speech act, as defined by Austin (1962)” (Cresti and Moneglia 2005). For Cresti and Moneglia, then, the utterance, being the basic structural unit of spoken language, is perceptually defined by prosody and ends at a terminal break. An utterance may thus consist of one or more information units, which are equivalent to our prosodic groups, where the final one ends in a terminal break and all previous PGs end in a non-terminal break.

Cresti and Moneglia’s concepts, terminal and non-terminal breaks, are perceptually defined by the final tones of the prosodic units, where a falling tone by default indicates finality (‘major’ break), a level or slightly rising tone indicates continuity (‘minor’ break). Other systems working on prosodic transcription and discourse analysis based on prosody use, mutatis mutandis, similar methodologies (cf., e.g., Chafe 1994; Du Bois 2004; Brazil 1997). There are differences between the existing systems in relating to questions, differences that cannot be discussed here due to the limited scope of this paper.

To illustrate the kind of stretches that can be regarded as utterances in the system of C-ORAL-ROM, here are three possible units from a single minimal conversation, using the following symbols for indicating final tones: || for a tone indicating finality (‘terminal break’ in the C-ORAL-ROM system; a falling tone by default); | for tone indicating continuity; / for a rising tone indicating what can usually be perceived as the final tone of yes-no questions, termed by Du Bois et al. ‘appeal’ (Du Bois et al. 1992; 1993; Du Bois 2004).

In the following set of PGs, each utterance is written in a separate line. The four first PGs form a single utterance, and the two following PGs each form an utterance in itself, the first is a question marked so by its final tone, the second may be an answer to this question and indicates terminality by ending with a falling tone or the like.

```
PG | PG | PG | PG ||
PG /
PG ||
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The following is an example from an actual Hebrew conversation, showing the pitch curves of three well-defined PGs constituting together a single utterance ending with a falling tone:
‘It is important that he understands, that since the moment he left, the group looks better.’

Thus, one can form a hierarchy among the different levels of discourse units, where utterances consist of one or more prosodic groups, and the latter each consist of prosodic words. The following diagram shows these relationships between the prosodic levels and the related segmental levels of this hierarchy:

While grammatical words are those words that are defined by their grammatical and lexical structure, phonological words are defined on phonological bases, among which prosodic words will be defined according to the prosodic coherence of their structure (for ‘word’ and its various conceptual definition see, e.g., Dixon and Aikhenvald 2002). Prosodic words in Hebrew may be thus defined if they carry a single main stress. Therefore, a precise equivalence between prosodic words and lexical or grammatical words cannot be established.
Prosody and segmental units

For Generative Linguistics, the ‘sentence’ is the central construct. Therefore, many studies stemming from this school and its offshoots tend to discuss prosodic structure by reference to the sentence (see, e.g., Selkirk 1984; Steedman 2001).

Halliday (e.g., 1989; 2004), whose work has had a significant impact on wide linguistic circles, notably those working within the framework of systemic-functional linguistics, regards prosody as a fundamental construct of spoken language, and suggests that the prosodic group (“the tone group”) functions grammatically as realization of a quantum of information in the discourse, defining it as an “information unit” (Halliday 2004). Still, Halliday observed that the clause has predominance among syntactic structures in consistency with prosodic units, and suggests that the clause should be regarded as the basic unit of spoken language syntax. Halliday further rejects sentences as useful constructs in analyzing the spoken medium, and suggested the notion of clause complex instead. Whereas Halliday’s research was based on English, Miller and Weinert (1998) broadened this insight over a body of three languages, including Russian and German, in addition to English. Their work concentrates on spontaneous spoken language. On the other hand, Kibrik and Podlesskaya (2009), who studied spoken narratives in Russian, while still regarding the clause as the basic structural unit of syntax which coincides with the PG in the majority of instances, would not discard the sentence as a second construct in hierarchy, but demanded a different definition of this construct. Biber et al. (1999), in a special chapter devoted to conversational English, look at what they term C-units, i.e., “clausal and non-clausal units”. The latter are special cases of discourse, which, as it stands, do not fit into the conventional syntactic point of reference.

The work of GARS (Groupe Aixois de Recherche en Syntaxe) at the Université de Provence, which contributes to the study of spoken French, preceded this endeavor. It further pinpointed the differences between the spoken and the written language. “La syntaxe de la phrase et des propositions, fondée sur les catégories grammaticales et leurs fonctions, ne suffit pas à rendre compte de certaines organisations de la langue parlée” (Blanche-Benveniste 2000). Therefore, GARS distinguishes between syntax and macro-syntax; the latter is designed to deal with structures that can be either equivalent to or larger than the traditional ‘sentence’ or ‘clause’. The relations between macro-syntactic elements are different from traditional grammatical relations. In many ways, macro-syntax of this French school is treated within the framework of what would be considered pragmatics or discourse analysis in other schools. For others, among which the functional-systemic school holds a prominent position, the closest equivalent to the conceptual framework of macro-syntax would be ‘information structure’ (e.g., Halliday 2004; also, inter alia, Lambrecht 1994). For Halliday, there is also an intermediary analysis of the clause, where the order of components makes the basis of analysis.

Some of the studies mentioned above do not base their analyses on prosodic structure (notably Biber et al. 1999; also Miller and Weinert 1998). For others, prosody is a basic component of the
spoken language, to the extent that any analysis of its structural units would stem from prosodic parsing. Thus Brazil (1995), leaning on prosody, takes a different route in analyzing the language of spoken narrative. Brazil rejects the validity of what he calls “sentence grammar”, and suggests a unit that he calls “increment”, the basic unit of the syntax of targeted, purposeful, linear oral communication. Interestingly, Sinclair and Muraunen (2006) takes a step further to include in this analytical framework both the spoken and the written language.

Chafe’s analyses of spoken language (culminating in Chafe 1994) are based on his cognitive theory of information flow. Chafe regards the prosodic group (‘intonation unit’) as the basic unit of discourse. He describes the relationship between PGs and clauses as follows: “Each clause verbalizes the idea of an event or state, and usually each intonation unit verbalizes a different event or state from the preceding” (Chafe 1994, 69). Chafe distinguishes between fragmentary, substantive, and regulatory PGs: Fragmentary PGs are those that have not come to a successful end; substantive PGs are those that convey ideas and events, states or referents; regulatory PGs are those whose function is the regulation of information flow or the interaction between the speakers.

With Chafe’s finding, i.e., that clauses and substantive PGs coincide by 60% (Chafe 1994), the question was raised concerning the centrality of the clause in the study of spoken language. Several studies took a similar path of exploration, basing on the premise that the PG is the basic unit of conversational language, checking the constituency of PGs in terms of clauses and NPs and mapping clauses into PGs. These studies covered a range of languages: English, Mandarin Chinese, Japanese, Finish, Wardaman (Australian), Sasak (Western Astronesian) (Iwasaki and Tao 1993; Croft 1995; Tao 1996; Helasvuo 2001; Matsumoto 2003; Croft 2005; Kibrik and Podlesskaya 2009; Wouk 2008). It seems that most authors are happy with the notion of clause as a valid category for the study of spontaneous, conversational language (cf. also Hirst and Di Cristo 1998), either in its most expanded structure or in a reduced form, such as the predicate and its core arguments (Croft 1995; 2005; Helasvuo 2001; cf. Du Bois 1987 for the strategy of preferred argument structure). On the other hand, Tao has found that Mandarin consists of a relatively large number of PGs consisting of NPs (cf. Iwasaki and Tao 1993 for both Mandarin and Japanese; cf. Matsumoto 2003 for different conclusions for Japanese). To conform to these findings, Tao suggests the concept of ‘speech unit’, “the correspondence of grammatical elements and intonation units, which is real for language production and analytically advantageous for the study of language” (Tao 1996). Suggesting a dynamic grammar that operates at the level of spontaneous natural speech, Tao further questions the usefulness of the ‘clause’ for the analysis of spoken language.

The studied languages show diverging percentages of agreement between PGs and clauses. The numbers may differ significantly between the researchers, depending on the studied corpus and the theoretical orientation and methodology employed. These ranges between: 40% ~ 45%
(Iwasaki 1993; Iwasaki and Tao 1993) to 70% (Matsumoto 2003; mostly elliptical clauses) in Japanese; 40% ~ 47% for Mandarin Chinese (Iwasaki and Tao; Tao); 32% ~ 50% for Sasak (Wouk 2008); 40% (Cruttenden 1997) to 54% (Iwasaki and Tao) and up to 60% (Chafe 1994) for English (Chafe 1994; substantive PGs only) and even 70-75% (Chafe 1987; Croft). The count of the C-ORAL ROM for the four Romance languages range between 62% in French to ca. 75% in the other languages, with an average of 70% verbal utterances (Cresti and Moneglia 2005).

One must note at this point, that an ‘utterance’ in the Romance corpus equals a set of any number (including one) of sequential prosodic groups as defined by Chafe and his followers, i.e., all PGs between two final boundaries (=terminal breaks). Therefore, any statistics presented for the C-ORAL-ROM is utterance-based rather than based on PG count. For the C-ORAL-ROM compilers, “[s]ince the average 30% of utterances are verbless, all the definitions based on clause structure and verbal predication appear to be inadequate for spoken language analysis purposes” (Cresti and Moneglia 2005).

Spoken Israeli Hebrew also shows a low rate of clauses per PG, if one takes the notion of clause at its face value, i.e., a stretch of words including predication, viz., both a subject and a predicate (we shall question this definition below).

Let us look at one example first, taken from a spontaneous conversation.

(1.) [1]

A: ma |

What?


You mean, they come ...

[3] baim beezee jalof babokes e |

come like three in the morning eh

[4] a’xase miklayat /

after shower ?

[5] B: mosu |

Moru,

[6] a’xse –

after...

[7] lo sak be lajla |

not only at night,

[8] gam bejom ||

also during the day.

[9] bef’ot jom ||

during day hours.

[10] beavodat jom ||

during day-work.


What an exaggeration!

In this short exchange of replicas there are 11 PGs. Two of the PGs are fragmentary (indicated by – in the transcription). Among the complete PGs, none can be regarded as full clauses. In fact, only one clause can be observed in this text, consisting of the subject hem “they” in the fragmentary PG on line 2, completed by the predicate baim “come” in PG 3.

A count has been made for three texts, all recorded by a single informant, a 26 years old male with high-school education, who works in a high-tech company, and he alone was aware of the recording (Izre’el and Rahav 2004). The three datasets are samples from recordings in three different situations:
(1) A conversation in a car during a drive back home from a wedding. The interlocutors of our informant in this case are two colleagues from work, both women about the same age as our informant. The topics of discussion are personal, issues related to personal relations at work, and driving matters. (Referred to as ‘Conversation 1’.)

(2) A conversation between the informant and his 51-year-old father, who has an academic education. The topic of discussion is our informant’s visit to China and Mongolia, and the conversation consists mainly of descriptions of this trip. (Referred to as ‘Conversation 2’.)

(3) A meeting regarding human resources at the high-tech company. The interlocutors are four colleagues, two males and two females, with high-school or academic education, all four in their late twenties or thirties. (Referred to as ‘Conversation 3’.)

All recorded people are native speakers of Hebrew. The recordings took place between September and December 2000.

The counts have been designed to suggest the validity of the PG as a basic structural unit of spontaneous spoken Hebrew. In this case, there was no attempt to suggest the mapping of clauses onto PGs, but rather, the goal was to study the nature of occurring PGs in terms of clausal components. Therefore, a PG consisting of an embedded clause is counted as clausal, although for the mapping task such clauses would be regarded as NPs (Tao 1996; Wouk 2008). Note that this latter procedure suggests a higher number of clauses than the alternative one. Furthermore, the counts take a simplified approach in comparing the data, e.g., they do not distinguish (the few cases of) PGs consisting of two clauses from those consisting of only one.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Fragmentary</th>
<th>Non-fragmentary</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Substantive</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>780</td>
<td>32 (4.1%)</td>
<td>688 (88.2%)</td>
<td>748</td>
</tr>
<tr>
<td>Non-clausal</td>
<td></td>
<td></td>
<td>47 (78.3%)</td>
<td>428</td>
</tr>
<tr>
<td>Total clausal</td>
<td></td>
<td></td>
<td>13 (21.7%)</td>
<td>320</td>
</tr>
<tr>
<td>Clausal verbal</td>
<td></td>
<td></td>
<td>6 (46.2%)</td>
<td>175</td>
</tr>
<tr>
<td>Clausal non-Veral</td>
<td></td>
<td></td>
<td>7 (53.8%)</td>
<td>145</td>
</tr>
</tbody>
</table>

|                  |       |             | Regulatory      |       |
|                  |       |             |                 |       |
|                  |       |             | 138 (45.0%)     | 145   |

*Table 1: Distribution of PG types: Conversation 1*
The numbers speak for themselves, and show small percentages of clausal PGs, especially when compared to figures for other languages, notably English. A comparison between the three tables suggests differences in scope of clausal use between the three types of speech represented by the respective three datasets, notably Conversation 3 (meeting). An even more interesting observation is the significantly higher number of verbs attested in Conversation 1 (car drive). Both observations suggest interesting different linguistic behavior in different contextual settings, which certainly deserves a thorough investigation. One may also note the higher number of regulatory PGs in Conversation 3 (meeting) and the high number of fragmentary PGs in Conversation 2 (conversation between a son and his father, which is narrative-descriptive in nature).

In addition to the quantitative observations presented above, I would like to add to the example already given above (taken from Conversation 1), a few more examples of the nature of the data at hand, exemplifying substantive non-clausal PGs in the three conversations. The PGs in question,
marked in boldface characters, may perhaps better described in terms of information structure rather than in terms of predication:

\[(2.) \quad 1s \quad \text{etmol} \quad \text{asi-ti} \quad \text{tipul} \quad l-a-oto | \]
\[
yesterday \; \text{did-1SG \; treatment \; to-the-car} \]
\[
\text{‘Yesterday \; I \; serviced \; the \; car,’} \]

\[(2s) \quad \text{elef} \quad \text{flof} \quad me-ot \quad fekel || \]
\[
thousand \; \text{three \; hunderd-PL \; Shekel} \]
\[
\text{‘(it \; cost) \; 1300 \; shekels.’ (Conversation \; 1, \; 34-35)} \]

\[(3.) \quad 1s \quad \text{yef} \quad \text{famc} \quad \text{pask} | \]
\[
\text{EXT \; there \; park} \]
\[
\text{‘There \; is \; a \; park \; over \; there,’} \]

\[(2r) \quad < \; \text{creak} > \quad \text{lo} \quad \text{yodea} \quad \text{ma} \quad || \]
\[
\text{NEG \; know \; what} \]
\[
\text{‘I’m \; not \; sure.’} \]

\[(3s) \quad \text{kama} \quad \text{dunam-im} \quad \text{tov-im} | \]
\[
\text{some \; acres-PL \; \; good-PL} \]
\[
\text{‘(The \; size \; of \; it \; is) \; a \; good \; number \; of \; acres,’} \]

\[(4s) \quad \text{male} \quad \text{male} \quad \text{gumx-ot} | \]
\[
\text{full \; full \; alcove-PL} \]
\[
\text{‘(it \; has) \; many \; many \; alcoves,’} \]

\[(5s) \quad \text{im} \quad \text{male} \quad \text{psal-im} \quad \text{ktan-im} \quad \text{be-alaf-im} | \]
\[
\text{with \; full \; \text{statue-PL \; small-PL \; in-thousand-PL}} \]
\[
\text{‘with \; many \; \; small \; statues \; by \; the \; thousand,’} \]

\[(6s) \quad \text{pesel} \quad \text{exad} \quad \text{anak} | \]
\[
\text{statue \; one \; \; huge} \]
\[
\text{‘(there \; was) \; one \; huge \; statue,’} \]

\[(7f) \quad \text{tsiv} \quad — \]
\[
\text{col(orful)} \]
\[
\text{‘(there \; was \; another \; one) \; col’} \]

\[(8s) \quad \text{tsavua} | \]
\[
\text{‘colored,’} \]

\[(9s) \quad \text{lo} \quad \text{tsavua} | \]
\[
\text{NEG \; colored} \]
\[
\text{‘(still \; another) \; not \; colored,’} \]

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1 For each PG, its basic type is marked: substantive (s); regulatory (r); fragmentary (f).
hakol bud-
the-all Budha-PL
‘all (these are) Budha(-statue)s,’ (Conversation 2, 716-725)

atem hay sots-im la-daat bsiut isgunit ||
2PL today want-PL to-know health organizational
‘Today you want to become informed about organizational health.’

naχon /
right
‘Right?’

ze ma fe-atem mexaps-im ||
this what NOMINALIZER-2PL search-PL
L‘This is what you are looking for.’

naχon /
right
‘Right?’

bsiut fel ha |
health of the
‘(You are after the) health of the ...’

fel ha-sviut = satson fel-i ||
of the-satisfaction of-me
‘of my satisfaction.’

beto oved ||
as worker
‘As a worker.’

naχon /
right
‘Right?’ (Conversation 3, 130-138)

All marked PGs are rhemes (or, in a different terminology, ‘comment’, ‘new’), presenting new information, where no thematic elements are explicitly referred to. In ex. 2, the price of the service is presented without any formal reference to the mentioning of the service in the preceding PG. In ex. 3, the marked PGs also present new information, one at a time. Thematic anchors exist only indirectly in units 3 (the park), 5 (alcoves), 7-9 (various statues), whereas the units 4 and 6 only new information exists with no thematic (‘given’) anchors present (except for the very idea of the location, viz., the park). In ex. 4, units 5 and 6 together form a rheme, the new information. Its thematic anchor can be found in unit 3, and can even be syntactically related to the cataphoric pronoun ze “this”, which in itself is an anaphora to ‘organizational health’ in unit 1. However, the syntactic gap between unit 3 and units 5-6, the resumptive function of the phrasal complex in these two units (5-6), and as well as the prosodic structure of the entire
passage, prefers a non-syntactic analysis. As for the rhematic unit 7, it can be regarded an afterthought, as suggested by the terminal tone of the preceding PG.

The Structure of Hebrew as a Semitic Language and the Question of Predication

Introduction

Most studies dealing with the interface between prosodic and segmental structures tend to distinguish between different levels of reference to the segmental stretch, where syntax and information structure, or syntax and pragmatics are not being looked at using the same terms. In what follows, I will try to lay some foundations to bringing the two points of view as closely related as possible at this time, with the hope that future research will shed more light on the interrelatedness of these two apparently different domains, perhaps to the point of integrating the two into a single, coherent theoretical construct. Of course, I will be dealing only with the case of spoken Israeli Hebrew, with only a brief look at other languages.

However, before getting into details, I should put forth some common assumptions about sentence structure. While some of these assumptions or tenets are almost universal, others tend to be spread in some theoretical points of view, among them ones that have a strong foothold in the Hebrew grammatical tradition. The main points relevant to our discussion here are the following:

— Clause is a simple sentence.
— The clause, the sentence likewise, consists of both subject and predicate.
— The subject is the component upon which the sentence is constructed. I.e., the subject is the basis of the clause, upon which predication is held.
— Where there are exceptions (cf. ‘It’s raining’), they are left out of the analysis (as is usually the case with speaking about the whether without doing anything about it…)

In the Hebrew grammatical tradition, which stems in the studies of the medieval Hebrew grammarians, the terms for ‘subject’ and ‘predicate’ are interesting in that they carry the very notions of grammatical dependence of the predicate on the subject:

The term for ‘subject’ is נושא (nosé), which is the active participle (SGM) of the root nš? “carry”, with the literal meaning “(the one that) carries”.

The term for ‘predicate’ is נושוא (nasú), which is the passive participle (SGM) of the same root nš? “carry”, with the literal meaning “(the one being) carried”.

Jonah Ibn Janaː (ca. 990-1050), Kitab al-Lumaʕ (“The Book of Variegated Flower-beds”; translated into Hebrew by Yehuda Ibn Tibbon [1171 C.E.] and known as Sefer haRiqma), describes the relationship between the two thus:
It has already been clarified ... that there is nothing ... but Substance and Event. And it
has been known that Substance is self-contained, carrying (נְכַּה naseh) the events, and
Event is carried (נִשָּׁע nasu) by Substance, and cannot stand in itself.

... Since Substance is previous to Event by nature, because it carries it or renews it, we
have preceded (our discussion of) Substance, although the concept “noun” is the same
for both Substance and Event.

For a brief illustration of the commonly held approaches in the study of Hebrew also to these
days, note the definitions of the relevant terms in Schwarzwald and Sokoloff’s A Dictionary of
Linguistic and Grammatical Terms (1992):

Sentence: A complete notional unit that includes a subject and a predicate.

Clause: (1) A syntactical structure that includes a subject and a predicate; a complete
notional unit that ends with a pause. (2) A syntactical structure that includes a subject
and a predicate, coordinate or subordinate, that does not hold the top position of the
derivational tree. (This latter definition is drawn from the approach of generative
grammar, of course; S.I.)

More recently, Coffin and Bolozky (2004) define the notion of sentence in similar terms:

The sentence is the maximal unit of syntax ... The major constituents of sentences are
the subject and predicate phrases that join to construct a sentence.

As against these common assumptions, one can raise the some reservations as follows:

—Is the distinction between Clause and Sentence needed for the understanding of sentence
structure?
—Is the tenet that the sentence (or clause) must consist of both subject and predicate is a
valid one?
—Is the tenet that the subject is the more basic element of the sentence and predication is
carried upon it a valid one?
—Should exceptions be hold as such?

At this point, let me refer my loyal reader to the examples given above, where only some of the
linguistic material fits the definitions of a clause or a sentence.

However, criticism has been expressed against the Western (European) grammatical tradition that
stems from the Aristotelian tradition – as is, in fact, the Hebrew grammatical tradition, through
some mediators. The Indo-Europeanist Konrad Ehlich has expressed his criticism as follows:

—[La linguistique] dispose d’un système d’analyse à base de catégories constituées au
tout début de son histoire, entre 400 av. J. C. et 600 apr. J.-C. Ce système a été
transposé dans la système épistémologique général, le savoir collectif, dans presque toutes les cultures européennes.
—Les activités grammaticales reposaient sur le seul langage considéré comme tel, c’est-à-dire sur le grec et, le cas échéant, sur le latin.
—L’histoire de la linguistique depuis le début du XVIe siècle pourrait être écrite comme une histoire de rejet et de refoulement de tous les phénomènes langagiers qui ne sont pas en accord avec le système de présuppositions de la linguistique européenne. (Ehlich 2005)

In this paper Ehlich finds it necessary to state this severe criticism on the Western Grammatical tradition to show how preconceptions can bring about misunderstanding of linguistic structure, only to go back to the study of Semitic languages to show that the so-called nominal (or non-verbal) clause makes a provocation to these preconceptions. While Ehlich does well to draw from the medieval Arabic grammatical tradition to analyze sentence structure in Arabic (and by implication in Semitic languages in general), I cannot deal in any detail with his study, but only ask: Is the Semitic “nominal” clause a provocation indeed?

Types of predicates

To answer this question let us look briefly at the type of clauses one usually thinks of when studying Hebrew, viz., the “verbal” clause (no. 5) and the “nominal” or “verbless/non-verbal” clause (no. 6):

(5.) \( jael \ te-kabel \ |
Yael 3SGF-will get
‘Yael will get’

(6.) \( jael \ jehudi-ja \ |
Yael Jew-F
‘Yael is a Jew’

Looking at this classification, as well as looking at the two typical examples given above as if equated, there are two problems involved: a terminological problem and a conceptual problem.

As for the terminological problem, one must note that the terms “verbless” or “non-verbal” mean that a verb is missing in the discussed structure. However, there is no need for a verb in this type of clause, neither a copula is needed nor a copula deleted.

Furthermore, “nominal” means that the predicate is a noun. However, not only nouns can occupy the predicate slot in any of the clause types that are termed “nominal”. In fact, one finds in this position any part of speech. Example (6) above is of a nominal predicate of the substantive class. Let us see examples for other parts of speech:

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71

(7.) \textit{jael χαχαm-a || }
\textit{Yael wise-F}

‘Yael is wise.’ (Adjective)

(8.) \textit{jael χοfεv-et || }
\textit{Yael think.APTC-F}

‘Yael thinks.’ (Active participle)

(9.) \textit{jael  χαfυv-a || }
\textit{Yael think.PPTC-F}

‘Yael is important.’ (Passive participle)

(10.) \textit{ma  fe = haja-Ø  baΧυς |}
\textit{what NOMINALIZER = was-3SGM clear}

\textit{ze  fe = jihje et fne ele ||}
\textit{DEM.SGM NOMINALIZER = 3SGM-will_be ACC two these}

‘What was clear was that these two will be available.’ (Nominalized clause)

(11.) \textit{ze  hu}
\textit{DEM.SGM 3SGM}

‘It’s him.’ (Personal pronoun)

(12.) \textit{ani maamin fe = hajom  ze ze}
\textit{I believe that = today DEM.SGM DEM.SGM}

‘I believe that today it’s the same.’ (Interrogative pronoun)

(13.) \textit{ma  ze ||}
\textit{what DEM.SGM}

‘What is it?’ / ‘What is this? (Demonstrative pronoun)

(14.) \textit{ze  mafehu  αχες}
\textit{DEM.3SGM something other}

‘This is another matter.’ (Indefinite pronoun)

(15.) \textit{ha=mifal  fam ||}
\textit{DEF = plant  there}

‘The plant is over there.’ (Plain adverb)

(16.) \textit{ze  me = ha = miftala po /}
\textit{3SGM from = DEF = nursery here}

‘Is he from the nursery here?’ (Adverbial phrase)
The question is what to do with it later and what to do with this.’ (Other complexes)

We have seen, then, that all word types can occupy the predicate slot in a clause: nominal (substantives, adjectives), participles, pronominal (personal pronouns, demonstratives, interrogatives and other pronouns), adverbs and adverbial phrases. Also, clauses and other complex phrases can be found as predicates as well.

What about verbal predicates, then?

The Hebrew verb

A verb, it must be noted, occupies a special position in Hebrew, as it does in other Semitic and Afroasiatic languages. In fact, the Hebrew verb can be defined both morphologically and, especially syntactically, as a full clause. As such, the verb consists of a subject, a predicate, and holds the nexus between the two components (Goldenberg 1998). Let us first observe the morphological components of the Hebrew verb, and then their syntactic capacities. We shall compare these structures to those of the nominal and participial forms, and see that participles, although they are usually seen as enabling paradigmatic change with verbs in a sentence, in fact they must be regarded as different in structure and capacities. We shall use derivatives of the root \( gdl \), which carries the basic meaning of “bigness” for our analysis.

Verbs

<table>
<thead>
<tr>
<th></th>
<th>2SGM</th>
<th>3SGF</th>
<th>3PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix conjugation</td>
<td>t-igdal</td>
<td>t-igdal</td>
<td>y-igdel-u</td>
</tr>
<tr>
<td>Suffix conjugation</td>
<td>gadal-ta</td>
<td>gadl-a</td>
<td>gadl-u</td>
</tr>
</tbody>
</table>

Participles and adjectives

<table>
<thead>
<tr>
<th></th>
<th>SGM</th>
<th>SGF</th>
<th>PLM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participle</td>
<td>gadel</td>
<td>gdel-a</td>
<td>gdel-im</td>
</tr>
<tr>
<td>Adjective</td>
<td>gadol</td>
<td>gdol-a</td>
<td>gdol-im</td>
</tr>
</tbody>
</table>

As can be seen in the forms in the table, verbs differ from nouns in their marking of person – which includes indication of gender and number – whereas nouns, including adjectives and participles,
have marking only for gender and number. Person markers do not form part of the nominal phrase, as they do in the verb. Thus – from the syntactic point of view – a clause consisting of a nominal form (as is the case for any other predicate excluding, of course, verbs) needs an additional marker of person – or any other form of a subject – in order to convey predication, as can be seen in the following comparative table:

Verbs

<table>
<thead>
<tr>
<th>SGM</th>
<th>Prefix conjugation</th>
<th>Suffix conjugation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2SGM</td>
<td>\textit{t-igdal}</td>
<td>\textit{gadal-ta}</td>
</tr>
</tbody>
</table>

“you will grow”  “you grew”

Participles and adjectives

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<th>SGM</th>
<th>Participle</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>\textit{gadel}</td>
<td>\textit{gadol}</td>
</tr>
</tbody>
</table>

“grow(s); “growing” “big”

A verb, then, is a morphological manifestation of a predicative complex, i.e., a clause. It includes, minimally, a predicate with its main argument (subject), with nexus, i.e., predication. Therefore, the verb is not a predicate per se. With respect to all other clauses, the verb makes an exception in that it is a synthetic rather than an analytic unit. So, coming back to the question put forth by Ehlich, we can now ask in return: Is the nominal clause indeed a provocation? Or, perhaps, it is the verbal clause – or, rather, a clause that is a verb – that makes one?

**Hebrew clause structure**

**Preliminaries**

Let us return now to the set of premises that have guided us to this point, repeat it here, with one other premise not presented yet, and now added to the end of the list:

—The primary, and by far the most frequent use of language is communication.
—The linguistic systems employed in the spoken medium, notably the language of everyday conversation, are the most frequent of all linguistic systems in use.
—Therefore, proper linguistic attention must be drawn to the spoken language.
—Spoken language must be analyzed according to its own properties. We must detach ourselves from any pre-conceptions about the structure of language based on its written forms.
— Prosody is a formal feature of spoken language no less than segmental features.
— An entity in the world is not part of the linguistic structure; it may or may not have a representation in the discourse at any time. In other words, an entity in the world upon which the discourse is about, does not necessarily have an overt representation in the discourse.

From this set of premises I should like to step further into a set of hypotheses regarding clause structure in spoken Hebrew, with possible implications to written Hebrew and beyond:

— A clause is defined as a stretch consisting minimally of a predicate.
— A predicate is defined as the “new” element in a clause.
— There are two main clause types: with and without predication, i.e., bipartite and unipartite clauses respectively.
— A subject is defined vis-à-vis the predicate.
— Where predication is present, clause structure is hierarchical, consisting – in its minimal manifestation – a subject and a predicate. This basic structure will be regarded as first-rank predication.
— Clauses with higher rank predication consist of predicates that are clauses in themselves.
— A prosodic group (intonation unit) is the basic structural unit of spoken language.
— At its simplex, a clause complex (= ‘utterance’) consists of one or more prosodic units of which the final one ends with a tone marking terminality (a falling tone as its default or a tone of appeal, in the Chafe / Du Bois terminology; see above).

Unipartite clauses

Clauses can be classified into two major groups: unipartite and bipartite. Unipartite clauses have only a predicate. A predicate in this framework can be defined as the new element of the discourse. It is here where the term rhyme, used above to refer to PGs where no subjects are present, and therefore cannot – traditionally – be called ‘clauses’ (see the discussion following ex. 4). It is suggested that rhemes and predicate are equal, or at least be suggested to be equal as a working hypothesis that will strive at bringing as closer as possible syntax and information structure, as mentioned above. Therefore, all PGs marked by boldface characters in these three examples are to be regarded as clauses under the framework suggested in these pages, clauses that contain only predicates without a subject present or even needed. The question whether a single word or phrase within this rhematic string is to be regarded as the nucleus, or the genuine predicate, cannot be dealt here.

A qualitative and quantitative analyses of unipartite clauses have been given above, with the hope that they should suffice at this stage of research to support the necessity of this framework. Examples of unipartite clauses are exx. 1-4 already mentioned. The following, supplemented one, show some other, including the clause gadol “great!” at its very end, thus playing with the
possibility that this nominal derivative of √gdl can indeed come by itself in a self-contained clause. This examples is an immediate continuation of the text of ex. (1) above.

(18.) [1] B: omer | Omer,
[2] beelohim || by God!
[3] hu omer li | He says to me:
[4] majsav | Meirav,
[5] ani omed lejadam beḫedēš oxeľ | I stand by them at the dining room,
[6] at masixča et haseaxon fel hafampe || one can smell the Shampoo
[7] mifnehem || from both of them.
[8] paam exad | Once
[9] hem haju fnehem | they were both...
[10] xașlu jeuzim jeuzim mi mi | they returned well tanned from from ...
[12] B: ma ata tsōxek | Why are you laughing?
[13] mimismeset | from a shift,

All non-predicative PGs are marked by boldface characters. Ll. 1 and 4 are vocatives, and are usually excluded from analysis in traditional grammars, or included as parentheses within the clause or sentence-frame. While ll. 7 and 13 can be seen as part of multi-PG clauses, still one should note that the phrase mifnehem (l. 7), usually termed an after-thought, still comes after what we called above a terminal tone, which in the prosodic structure marks an end of an utterance. I would therefore take this PG as consisting of an independent clause, although definitely related to the previous one in its function. In any case, l. 14, being a complete turn consisting a single PG of a single word, will be regarded as a clause in the framework suggested here. While this is a special use of the adjective gadol functioning as an interjection, one can also think of its use as a substantivized adjective (ex. 19) or even used genuinely an adjective (ex. 20, as is the adjective katan “small”) in contexts like the following:

(19.) A: ze haben feli || This is my son.
B: gadol || (He is) big!
(20.) A: effaš kafe bevakaʃa / Can I get some coffee please?
B: katan / Small?
A: lo || No.
gadol || Big.

Before we continue with bipartite clauses, let me draw attention ot some comparative materials, which will show that similar constructions are not uniquely attested in spoken Israeli Hebrew.
First, they occur also in the Hebrew Bible, although not frequently or prominently. One noted example is the following:

\[(21.) \text{ydehem wlo ymi\text{"un ra\text{"lehem wlo yhalleku}}}
\]

Hands-their and-not feel feet-their and-not walk

‘They have hands – but they cannot feel; they have feet – but they cannot walk.’

(Psalms 115: 7)

Other examples include the presentational particle (or adverb) \textit{hinne:}

\[(22.) \text{wayyomru 'el\text{"aw 'ayye s\text{"ar\text{"a 'i\text{"tek\text{"a}}}

wayyomer hinne b\text{"o\text{"ehl}}}

here in-the-tent}

‘They said to him, “Where is your wife Sarah?”

‘And he said: “There, in the tent.”’ (Genesis 18: 9)

(Cf. Joüon-Muraoka 2006: 527n2, 542 [§154o]).

Another ancient Semitic language where one finds unipartite clauses is Akkadian. The following example is known to all first year Akkadian student who start their learning with the Code of Hammurabi. The example given opens CH §24, where it draws from the previously stated law as follows:

‘If a man committed robbery and has been caught, that man will be put to death. If the robber has not been caught, the robbed man shall set forth the particulars regarding his lost property in the presence of god, and the city and governor, in whose territory and district the robbery was committed, shall make good to him his lost property.’ (CH §22-3)

\[(23.) \text{šumma napi\text{"ustum}}
\]

If lifeNOM

‘In case of loss of life:

the city and governor shall pay one mina of silver to his people.’ (CH §24)

(For a full analysis of unipartite clauses in Old Babylonian see Cohen 2005.)

My last comparative material comes from Japanese. Of course, I am not in the capacity to teach my Japanese audience anything in their language. I will leave the ground to the Japanese scholar Kazuko Matsumoto, starting with one of her examples (taken from (Matsumoto 2003) and continuing with some of her definitions relating to the prosody-syntax interface, and leave the rest to my audience for their judgment.
(24.)

a. Y: SU-gōi yokeina mono mo motte icchatte.  
very unnecessary thing even have-and go-PAST-and  
[ ID ]  
'(I mistakenly) took even unnecessary things (with me).'</a>

b. M: anmari motte ikanai koto ni suru.  
not many have-and go-NEG thing on decide  
[ ID ]  
'(I will) decide not to take many (with me this time).'</b>

c. +fuku toka.  
clothes and  
[ ID ]  
'clothes and so on'

d. onaji mono kireba ii ya to omotte.@@@#  
same thing wear-CON OK FP QT think-and  
[ ID ]  
'(I think that (it'll be) OK if (I) wear the same clothes.'

e. Y: kono mae ne,  
this before FP  
[ ID ] [IT]  
'the other day'

f. ->san diego animaru paaku ni itte kita n da  
San Diego Animal Park ALL go-and come-PAST NML COP  
[ ID ]  
- -->yo.  
FP  
[IT]  
'(I) went to the San Diego Animal Park'

g. ++hajimete.  
first time  
[ ID ]  
'for the first time'

h. M: =animaru paaku~  
animal park  
[ ID ]  
'(Is it) the Animal Park?'
A clause is “a unit of discourse which consists of a predicate and its associated core arguments (i.e., a subject and an object, which may or may not be overtly expressed) and adjuncts (…)”.  
Further, a clause is “a propositionally complete discourse unit which codes some state or event.”  
“A full clause is defined to consist of an overtly expressed subject plus a predicate, whereas a semi-clause consists of a predicate only without an explicit subject.”  
Where there is no integration between a complete prosodic group (Intonation unit) consisting of only a noun phrase, it is considered as an extra-clausal, independent phrasal unit. (Matsumoto 2003)

To end the discussion on unipartite clauses, I should only give a last example from spoken Israeli Hebrew, and extract of a conversation with only unipartite clauses are employed:

(25.)  
A: mosuf | Morush,  
B: ma motek || ‘What, sweetie?’  
A: asea’a jamm | ‘Four days –’  
    fva meot fekel lezeg || ‘seven hundred shekels for two.’  
B: bli keseft || ‘(This is) very cheep.’ (lit. ‘no money’)  
A: nayon / ‘Isn’t that so?’ (lit. ‘right?’)  
B: ejfo / ‘Were?’  
A: beholidej in haxadaf || ‘At the new Holiday Inn.’  
B  daft || ‘Great!’ (lit. ‘Enough!’)

Bipartite clauses

Bipartite clauses include both subject and predicate, and therefore – in contrast to unipartite clauses – they also show predication, or nexus, between these two primary components. One can further classify bipartite clauses, where several hierarchical levels can be discerned according to the number of predications included in them. Hitherto I have been able distinguish clearly between three levels of predication: primary, or first-rank predication, second-rank predication, and third-rank predication.
Primary (first-rank) predication

In our earlier discussion on predicative constructions we have already seen many examples of clauses with primary predication, viz., clauses where only one predication is at play. Going back to our root *gdl*, the following basic constructions are the simplest among bipartite clauses will be as follows:

\[
\begin{align*}
david & \text{ gadol} & \text{‘David (is) big.’} \\
hu & \text{ gadol} & \text{‘He/it is big.}
\end{align*}
\]

Where a noun (in this case, a personal name) or a pronoun will be the subject (indicated by underlining) and the adjective *gadol* ‘big’ will be the predicate (indicated by boldface characters). As we have seen, the basic element will be the predicate, as it can occur by itself to full a complete clause. Therefore, the subject will be added to the predicate where it becomes communicatively necessary to specify a subject.

Further examples are:

\[(26.)\] \text{nu az } \text{jael jehudija ||} \text{‘So then Yael is a Jew.’}

\[(27.)\] \text{ve=hawof felo beemet kaze anak} / \text{‘and his head is really that big?’}

\[(28.)\] \text{ma at sotsa fehu jagid la}ˈχ ˈfiri χ�awa at sababa / \text{‘What do you want him to tell you: Shiri (is) shit – you (are) OK?’}

We have also seen above that any Hebrew verb is, in fact, a clause of its own. All verbs include a subject and a predicate and manifest by their very essence the nexus between the two components. As such, every Hebrew verb is a bipartite clause with first-rank predication. Keeping track with our √*gdl* forms, one will recall the comparison made above between adjectival and participial forms on one side and verbs on the other side, where – compared with verbs – adjectival and participial forms do not include a pronominal subject in them. Therefore, in order to produce predication, an overt pronoun or another form of subject must be present as follows:

\[
\begin{align*}
hu & \text{ gadol} & \text{‘He/it is big.} \\
y-\text{igdal} & & \text{‘He will grow’} \\
t-\text{igdal} & & \text{‘You will grow’} \\
gadal-Ø & & \text{‘He grew.’} \\
gadal-tu & & \text{‘You grew.’}
\end{align*}
\]

Where – again – the subject is indicated by underlining and the predicate by boldface characters.

Examples:

\[(29.)\] \text{t-amfixa ||} \text{2SGM-continue} \text{‘Continue!’}
As can be seen from this example, no previous mentioning of the subject referent of the verb is mentioned; still there is no external pronoun, noun or a personal name specified. The active person is known to the participants in the conversation, of course, but – as stated among the premises above, a referent in the world is not part of the linguistic structure; it may or may not have a representation in the discourse at any time.

Internal subject in verbs may not have a referent at all. This is the case with impersonal constructions (ex. 31), as well as with apparent cases of lack of agreement between the subject and the predicate. In fact, as has been shown by Goldenberg (forthcoming) for similar cases in Arabic and other languages, the pronominal subject within the verb complex is not related to the topic but has an independent status. As already mentioned above, such cases need further research for spoken Hebrew.

(31.) `ma `ze ||
what this
`fin-u po et ha=`kvif ||
changed-3PL here ACC DEF = road
‘What’s going on? The road has been changed.’

(32.) `haja-Ø tmuna `fel |
was-3SGM picture(F) of
e `nu |
uh well
`amesika=`im |
American

---

2 Clause-final topicalization needs further research. We shall see below some other cases of fronting and backing, which will not be treated in this paper.
Second-rank predication

Second rank predication is the case where an overt subject is added to a basic construction with primary, first-rank predication. This basic construction, viz. a clause in itself, thus becomes the predicate of the additional subject. Such structures are very frequent, and occur with all types of predicative constructions, where the subject is pronominal, be it independent or affixed. The added subject can be of any type, pronominal or other, with some constraints.

\[ \text{david} \quad \text{hu} \quad \text{gadol} \quad ^3 \]
david 3SGM big 'David is big.

\[ \text{david} \quad \text{y} \quad \text{-igdal} \]
david 3SGM-will_grow 'David will grow'

\[ \text{hu} \quad \text{y} \quad \text{-igdal} \]
3SGM 3SGM-will_grow 'He will grow'

\[ \text{ata} \quad \text{t} \quad \text{-igdal} \]
2SGM 2SGM-will_grow 'You will grow'

\[ \text{david} \quad \text{gadal-Ø} \]
david grew-3SGM 'David grew.'

\[ \text{hu} \quad \text{gadal-Ø} \]
3SGM grew-3SGM 'He grew.'

\[ \text{ata} \quad \text{gadal-ta} \]
2SGM grew-2SGM 'You grew.'

Examples:

(33.) \[ \text{be} = \text{ena-j} \quad \text{ha} = \text{so} \quad \text{hu} \quad \text{kli} \quad |\]
in = eyes-1SGM DEF = SOH 3SGM tool
'For me, SOH\(^4\) is a tool.'

\(^3\) It will be recalled that subjects are indicated by underlining and predicates by boldface characters. Where a subject is included in the newly-formed predicate, it is indicated by underlining for its function as subject of the inner predicate, and with boldface characters to indicated its status as part of the predicate complex with the added subject.

\(^4\) SOH = Survey of Organizational Health.
(34.) aval  aʁafat =  hu  |
    but  Arafat =  3SGM
    ha = tɛsɔrist ḥaxi  gadol b = a = mdina  ||
    DEF = terrorist  most big  in = DEF = state
    ‘But Arafat is the biggest terrorist in the country.’

(35.) ve =  xaʁjav-im  ʐiskɔʁ  
    and = must-PL  to-remember  NOMINALIZER =  DEF = SOH
    ze  lo  |
    DEM.SGM NEG
    input le = menahal-im  ||
    input to = manager-PL
    ha = so  ze  kli  |
    DEF = SOH DEM.3SGM tool
    ‘And one must remember, that SOH is not an input for managers; SOH is a tool (…)’

The last example presents two second-rank predications. The first one is haso ze lo input le menahalim, where haso is the subject and the rest is the predicate, which in itself is a clause with primary predication: ze, a demonstrative pronoun functions as a resumptive pronoun to the external subject, and the rest (lo input le menahalim) being its predicate.

A special case is presented by the following example:

(36.) japanim  hem  tajalim  ||
    Japanese  3PLM travelers
    ‘Japanese are travelers.’

Prima facie, one would tend to mark Whereas in all other cases, the prosodic structure was at its simplex form, viz., it coincided with the segmental string in that the prosodic accent, which points at the focalic kernel of the clause, was always on the grammatical predicate, which by default comes after the subject. However, in this case the accent falls not on the final word but on the first one. The reason for that prosodic marking is clear when one looks at the context, where nationalities of people who tend to travel more is discussed, and the new element in this clause is ‘Japanese’ and not ‘travelers’. Therefore, in the framework suggested here, the preferred analysis will take japanim as the predicate and hem tajalim as the subject of this second-rank predication.

The relationship of the 3PLM pronoun hem to either japanim and tajalim is still to be studied.

(37.) japanim  hem  tajalim  ||
    Japanese  3PLM travelers
    ‘Japanese are travelers.’
Third-rank predication

As is the case with second-rank predication, an overt subject is added to a complete construction, now not including a primary predication but one that includes a second-rank predication. Again, this clause of second-rank predication thus becomes the predicate of the additional subject. Such structures seem to be rare in the language, and probably occur under further constraints than can be assessed at this moment. As will be seen below, the only verbal example brought here includes the verb haja “he was”. Therefore, whether a verb like our exemplary gadal can come in a similar position is still to be sought. The following constructions will be discussed:5

\[ \text{david hu gadal-Ø} \]
\[ \text{david 3SGM grew-3SGM} \quad \text{‘David (he) grew’} \]

\[ *\text{david hu hu gadol} \]
\[ \text{david 3SGM 3SGM big} \quad \text{‘David (he) is big.} \]

In the example (38), the covert zero morpheme of the verb haja is the subject of the first rank predication manifested in this verb, with what follows being its complement.6 The 3SGM pronoun following ‘Arafat’ is the subject of the predicate in this first rank predication clause, and “Arafat” will thus become the subject of the second-rank predication.

\[ (38.) \text{ʃason amax} | \text{ʃe fe- < creak> awafat hu} | \text{Arafat 3SGM} \]
\[ \text{haja-Ø ben hasifonim j'l hatehos} | \text{was among the first terrorists,} \]
\[ \text{ʃexataf metosim | who hijacked planes} \]
\[ \text{vehavag e} | \text{and killed uh} \]
\[ \text{sp hypert i salemi} \quad | \text{Israeli sportsmen.’} \]

Example (39) apparently shows a construction with a (proper) noun and two following 3rd person independent pronouns:

\[ (39.) \text{aval gam jael hi hi nihala oti} | \text{but also Yael 3SGF 3SGF managed-3SGF me} \]
\[ \text{‘But Yael was my Boss too.’} \]

However, a prosodic analysis of this string, notably of the intensity curve, has shown that the repeated pronoun is not structural, but accidental, the first one being a false start:

\[ \]

5 Double underlining indicates a subject of the second-rank predication.

6 An alternative analysis may regard haja as a genuine copula for marking the tense, with the rest being the actual predicate.
Therefore, the actual construction of this string is of a second-rank predication, where jael is the subject of the primary predication of the second PG, being a continuation of an unsuccessful PG started and aborted at the end of the first pronominal form:

\[(40.)\text{ aval gam jael hi} \quad -\quad \text{ hi nihala oti} \]

‘But Yael too, she was my Boss.’

**Towards a unified theory of clause structure in spoken Hebrew**

In this paper, I have tried to lay some foundations for a unified theory of clause structure in spoken Israeli Hebrew. While there is a lot of research still to be done, I hope to have shown that some premises and working hypotheses do have some support in finds from occurring structures of spoken Hebrew. The following may be of help to summaries these hypotheses:

—The prosodic group is the basic structural unit of the spoken language. The next unit in hierarchy is the prosodic complex, or the utterance. An utterance can include a single prosodic group or more.
—An utterance includes at least one clause.
—A clause is defined as a unit consisting minimally of a predicate.
—A predicate is defined as the “new” element in the discourse
—Clause has two basic structures: unipartite, consisting of only a predicate, and bipartite, consisting – in its minimal structure – of a subject and a predicate.
—Accordingly, a subject is defined vis-à-vis the predicate.
—Clause structure is hierarchical in that the basic clause unit (subject + predicate) can become the predicate of a higher rank clause
—A binary classification of predicate types in Hebrew as verbal vs. nominal should be avoided. Any POS can become a predicate, as well as multi-word constructions. The verb,

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\(7\) The hyphen indicates a truncated word, the dash – a truncated PG.
inherently consisting of both the subject and the predicate (in a synthetic structure), can become the predicate of a higher-rank clause (in an analytical construction).
—Subjects can be nominal or pronominal as well as consisting of nominalized structures.
—The subject of the verb is pronominal, and is structurally required, being part of the morphological complex that constitutes a verb.
—Pronominal subjects may or may not have referents.
—The subject of reference in the extra-linguistic domain is not part of the linguistic system; this subject of reference may or may not be represented in the discourse ("referent").

In guise of conclusion: something to think about

It is interesting to observe that formal linguists who are concerned with the very medium of spoken language, sound, have come to recognize the phenomenon of intonational phrasing (or prosodic constituency), which promises to remedy the lack of explanatory power of actual language production of formal syntactic analyses. (Tao 1996)

To me a corpus of any size signals a flashing neon sign “Think again”, and I find it extremely difficult to fit corpus evidence into received receptacles... the language obstinately refuses to divide itself into the categories prepared in advance for it ... (Sinclair 2001)

... It is not about using spoken French to illustrate a theory, but to find a theory that allows us to approach spoken French data. (Blanche-Benveniste and Jeanjean 1987)

I firmly convinced that many of the shortcomings of current grammatical theory are due to the fact that grammar has been chiefly studied in connection with ancient languages known only through the medium of writing, and that a correct apprehension of the essential nature of language can only be obtained when the study is based in the first place on direct observation of living speech and only secondarily on written and printed documents. In more than one sense a modern grammarian should be novarum rerum studiosus. (Jespersen 1924).

References


CoSIH: <http://www.tau.ac.il/humanities/semitic/cosih.html>


