

Phonology of

Masoretic
Hebrew

II

Accents
As Prosody

Jiří Hedánek

Phonology of
Masoretic Hebrew
II
Accents As Prosody

Prosodie akcentů
ve fonologii masoretské hebrejštiny

by

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Accepted by _____

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To my wife

Thus it is written,

ויקראו בספר בתורת האלהים מפרש
ושום שכל ויבינו במקרא

And they read in the book, in the Law of God, distinctly;
and they gave the sense,
and caused them to understand the reading.

(Nehemiah 8:8)

'And they gave the sense' – [this refers to] the punctuation accents.
(Bereshith Rabbah 36.8)

R' Ika b. Abin said in the name of R' Hananel in Rab's name:
'so that they understood the reading,' [it refers] to the accentuation [פיסוק טעמים];
others say, *to the masoretic notes.*
(b. Ned. 37b)

דברה תורה כלשון בני אדם

The Torah speaks in the language of men.

(b. Meg. 3a; also Sifre, Num. 112)

Acknowledgments

τί δὲ ἔχεις ὃ οὐκ ἔλαβες;

There are questions that beg answers. Those are close companions to every researcher. Some questions seem more important than answers. Formally, they are asked. Actually, they ask. They are admitted, not answered. One of those is the question posed above: “What do you have that you did not receive?”

I have taken it from a continuation of Hebrew Scriptures. They are a relay and have continuations, in many books, many languages and many lives. This particular question was raised in Greek (1Cor. 4:7), but it could be any language as we all know the answer already: Nobody can boast of having anything genuinely of their own. We get indebted the moment we enter this world.

Symbolically, I have actually quoted the question from Acknowledgments of my previous dissertation as it also has a continuation, in this one. Between the two dissertations, my indebtedness turned only greater, the list of persons to whom I am thankful grew longer. That old question can only be repeated.

I am grateful to so many people who provided me their baton and had me participate on their quest. Whoever I could name, I did so inside, realizing simultaneously they also took the baton from so many that went before them, and were indebted to countless others that made their achievements possible. Who could name them all? What I can do in here is appreciate at least a few at my end of the road.

I am obliged to my tutor Petr Zemánek for his endless patience he had with this project that must have so long appeared endless to him. It did draw to a close, thanks be to God. I am filled with gratitude also to Halvor and Mirja Ronning who made me feel at home at Jerusalem Center for Bible Translators when the work culminated and provided me their scholarly resources. Thank you, Richard Wheeler, for technical assistance, and all of you there for patient support. Indeed, patience and support is what I was privileged to receive from around, and most of all, from my wife. So much so that in a way this book has become her book. Thank you, Eva. As always and this time again, I knew I could rely on you.

Abstract

The dissertation *Phonology of Masoretic Hebrew: Accents as Prosody* (2017) interprets Tiberian ‘accents’ as speech prosody marking. Traditionally, they are explained as signs for accenting, singing or syntax. But only some were placed on accents. They do not map well to music which was shaped by local traditions more than the mark-up. Syntactic interpretation is based on dividing marks but many diverse marks link, no links lead outside of verses, some words have two different marks and simple verses often miss stronger dividers. Interpreting them as prosody explains why they gravitated to accent positions; why different musical renditions developed; why they often agree with syntax and sometimes they do not.

First a general concept of prosody units is put forward. This is applied to Masoretic Hebrew and the focus turns to intonation. The previous dissertation *Phonology of Masoretic Hebrew* (2011) analyzed *siluq*, *atnach*, *segolta*, *zaqeph*, *revia* (also *mugrash*, and establishing *garsha* as a unit), *geresh*, *gershayim*, *tevir*, *mercha* (also *kphula*), *tiphcha*, *tarcha* and *dechi*. The 2017 dissertation analyzed (from printed editions, manuscripts and software made by the author) *ole veYored*, *darga*, *pazer*, *qadma*, *pashta*, *mayela*, *mahpach*, *jetiv*, *shalsholet*, *munach*, *iluy*, *galgal*, *atnach haphuch*, *zarqa* (*tsinor*), *tsinorit* (and *metsunar* versions), *telisha* (including *qarne fara*) and all *legarme* versions including coincidences. Aiming at intonations, the 2011 treatment called ‘accents’ *melodemes* and distinguished phrasal melodemes that conclude and may change intonation, and intonational melodemes that fill the phrases with pieces of intonation. The 2017 dissertation takes that concept up and tests if the melodemes connect to meaningful intonation contours. It sets up a five-degree stave that is non-linear (sensitive to extremes) and assigns pieces of contour to each melodeme. Phrasal melodemes obtain usual pitch position and movement. Some melodemes distinguish rhythm or length but so far it is mostly intonation what defines.

Selected excerpts are analyzed as melodeme configurations to see if they affect meaning and how. Three doubly marked passages (two Decalogues) are analyzed graphically to see how one set of contours differ from the other one. Another text, recorded in the marking subsystem used in Psalms, Proverbs and Job (as Psalm 18) and also in the majority marking subsystem (in 2 Samuel 22) is analyzed for differences in the markings. The contours, though not alike, are visibly similar enough to support the concept of melodemes having their own intonations, only used differently in the two subsystems. The values being symbolic degrees of increase can calculate mean. Another software by the author analyzed the participants of the Book of Job for mean values, standard deviations and variation coefficients. Each of the nine speakers show slightly distinct characteristics. The same program applied on Jonah showed not so significant differences between poetry (Jon. 2) and prose. It is also less probable that recommended prosody would distinguish genres even if it cared to make difference between speakers or emotions.

The research demonstrated ‘accent’ marks interpreted as melodemes join in long contours visually appearing compatible with meaning or emotions. Additional tests should be acoustical and statistical.

Keywords

Tiberian Hebrew, Accents, Teamim, Pointing, Cantillation, Intonation, Prosody,
Prosodic Interpretation of Hebrew Accents, Masoretic Hebrew

Český abstrakt

Disertace *Phonology of Masoretic Hebrew: Accents as Prosody* (2017) [Prosodie akcentů ve fonologii masoretské hebrejštiny] vykládá tzv. akcenty tiberiadského zápisu jako vyznačování řečové prosodie. Tradičně se vysvětlují jako značky přízvukové, zpěvní nebo syntaktické. Jenže na přízvuky se kladou jen některé. Neodpovídají přesně ani hudebním realizacím, které více odrážejí místní tradice než zápis. Syntaktické výklady vycházejí z dělicích značek, ale mnoho různých značek jsou pojiče, žádné spoje nepřekračují hranice veršů, některá slova mají dvě různé značky a jednoduchým veršům často chybějí silnější děliče. Prosodický výklad vysvětluje jak tendenci klást značky na přízvuky, tak i proč vzniklo mnoho hudebních tradic, tak také proč značky často odpovídají syntaxi, ale někdy tomu tak není.

Vychází se z obecné koncepce prosodických jednotek. Po jejich vztahování k masoretské hebrejštině se zřetel obrací k intonaci. Předchozí disertace *Phonology of Masoretic Hebrew* (2011) analyzovala siluk, atnach, segolta, zakef, reviu (i mugraš a rozlišila zvláštní značku garša), gereš, geršajim, tevir, merchu (i kfulu), tifchu, tarchu a dechi. Disertace 2017 analyzovala (z tištěných vydání, rukopisů i autorovým programem) ole veJored, dargu, pazer, kadmu, paštu, majelu, mahpach, jetiv, šalšelet, munach, iluj, galgal, atnach hafuch, zarku (cinor), cinorit (včetně mecunarů), telišy (i karne fara) a všechny možné legarme (i neuznané). Koncepce intonací z r. 2011 nazvala „akcenty“ *melodémy* a rozlišila melodémy frazální, které jsou kadenční a intonaci mohou obměnit, a melodémy intonační, které vyplňují fráze vlastními intonacemi. Disertace z r. 2017 na tuto koncepci navázala a ověřuje, zda se melodémy spojují do kontur, které dávají smysl. Vytvořila pětistupňovou osnovu, a to nelineární (citlivější na okrajích), a každému melodému přiřadila konturu, melodémům frazálním spíše obvyklou výšku a směr. Některé melodémy se liší rytmem či délkou, ale většinou je práce určuje intonacemi.

Souvislé konfigurace melodémů se analyzují na excerpčních vybraných se zřetelem k možnému vlivu na význam. Poté se na třech dvojmo značených pasážích (dvě jsou Dekalogy) graficky zjišťuje, jak se jedna kontura liší od druhé. U dalšího textu, značeného jednak subsystémem Žalmů, Prísloví a Jóba (jakožto žalm 18), jednak většinovým subsystémem (ve 2S 22), se zkoumá, jak vycházejí rozdíly obou značení. Kontury nejsou totožné, ale viditelně podobné natolik, aby bylo možné chápat melodémy jako svébytné nositele intonace, pouze užívané v obou subsystémech jinak. Z hodnot jakožto symbolických stupňů zvýšení lze počítat průměr. Jiný autorův program účastníkům knihy Jób spočítal průměry, směrodatné odchylky a variační koeficienty. Každá z devíti postav vykazuje charakteristiky lehce odlišné. Týž program na knize Jonáš neshledal mezi poezií (Jon 2) a prózou rozdíly, jaké by byly významné. Je též méně pravděpodobné, že doporučená prosodie by rozlišovala žánry, byť by se snažila odlišovat mluvčí nebo emoce.

Výzkum ukázal, že „akcenty“ chápané jako melodémy tvoří dlouhé kontury, viditelně sluchitelné s významy a emocemi. Další prověřování by se mělo konat akusticky a statisticky.

Arrangement

A	Anterior Matter	
	Acknowledgments	
	Arrangement	
	Acronyms and Symbols	15
	Generally Used	15
	Transcriptions and transliterations	17
	AH#—a Hebrew transcription	17
	AH#—a list of Hebrew melodemes	18
	AH#—a list of Hebrew intonation contour <i>analytic marking</i>	20
	AH#—a list of Hebrew intonation contour <i>simple marking</i>	20
	Glossa—General Language of Speech Sound Analysis	21
	Approach	23
	A1 Accents Introduced	24
	A2 Applying Concepts and Methods	30

B	Between Accents and Melodemes	34
B1	From Syllable to Prosody	35
B1a	Phonological Background	35
B1a1	Beyond a Syllable	39
B1a1.1	Diplosyllabism	40
B1a1.2	Higher Units	43
B1b	Segments and Sequences	43
B1b1	Syllable	55
B1b1.1	A Basis of Rhythm and Intonation	55
B1b1.2	Segmental Structure	55
B1b2	Foot	57
B1c	Suprasegments	62
B1c1	&oolae w:Jooraedh	68
B1c2	Meer:khaa L:gharmee	70
B1c2.1	L:gharmee Paasaeq	70
B1c2.2	Meer:khaa L:gharmee vs Paasaeq	71
B1c3	Dargaa	72
B1c4	Dargaa L:gharmee	72
B1c5	Paazeer	73
B1c6	Qadhmaa (%azlaa)	76
B1c7	%azlaa L:gharmee	77
B1c8	Pash7aa	78
B1c9	Maaj:laa	79
B1c10	Mahpaakh	80
B1c11	M:huppakh L:gharmee	82
B1c12	J:thiiv	83
B1c13	Shalshaelaeth q:7annaa	84
B1c14	Shalshaelaeth	85
B1c15	Muunax	86
B1c16	Muunax L:gharmee	88
B1c17	&illuuj	89
B1c18	&illuuj L:gharmee	89

	B1c19	Galgal	90
	B1c20	%athnaax Haaphuukh+&oolae	90
	B1c21	Zarqaa / Cinnoor	91
	B1c22	Cinnooriith	93
	B1c22.1	Meer:khaa M:cunnaeraeth	94
	B1c22.2	Mahpaakh M:cunnar	94
	B1c23	T:liishaa G:dhoolaa	95
	B1c24	T:liishaa Q:7annaa	97
	B1c25	Qarnee Phaaraa	97
B2	Combinations		98
	B2a	Initial Value Estimate of the Melodemes	99
	B2b	Combination Examples	100
	B2b1	Where Melodemes Seem to Affect Meaning	108
	B2c	Decalogue's Double Pointing	110
	B2c1	1M 35:22	110
	B2c2	2M 20:2-15	111
	B2c2.1	The Shabbath/Shavuoth Melodemes	
	B2c2.2	The Private Reading Melodemes	114
	B2c3	5M 5:6-21	116
	B2d	The Two Markings Compared	120
	B2e	More Opportunities for Application	130
	B2e1	Do Msh Melodemes Differentiate the Speakers?	132
	B2e2	Do Msh Melodemes Differentiate Genres?	133
<hr/>			
C	Conclusion		135
	C1	Discussion	135
	C1a	Syllable Structure	136
	C1b	Melodemes and Contours	137
	C1c	Tools and Methods	140
	C2	To Do	143
<hr/>			
R	References		150
	List	resources used and/or referred to	150
	Ambisyllabicity	a bibliography with a commentary	157

Phonology of Masoretic Hebrew II: Accents as Prosody is a follow-up of the *Phonology of Masoretic Hebrew I*, which has done some groundwork for the present dissertation. That antecedent dissertation is at times referred to for particular sections and articles. These also start with A, B, C, D, E, F, G, H, I, J and R. *PMH II* used to have more mnemonic divisions, so references such as D2.2.1 have got a prefix iD2.2.1 in distinction from iiD2b1 to make clear the former points to *PMH I*, the latter to *PMH II*.

The present dissertation can be read with no supplemental resources and limited knowledge of Hebrew, seeing that the topic might be of some interest to non-specialists in Hebrew scholarship. The transliteration used consistently throughout the text could make it more accessible to them. Some acquaintance with the script is expected to be able to appreciate details of transcription (though it should be readable without that knowledge, too) and a few special terms that are well known to students of Hebrew. An interested reader may refer to the CD or *PMH I* for details not covered next in Acronyms. However, the benefit if there can be any at all could be much greater when studied along with a Hebrew TaNaKh (the Hebrew Bible). This is also the quickest way to make oneself familiar with the transcription. The kind reader is encouraged to use transliterated words along with references as pointers to the original. Following the TaNaKh and this *PMH II* side by side and viewing the Hebrew lines in broader context, not transliterated in full, will make much easier to follow the author's points. The readership actively comparing the data with the author's claims about the data is what this dissertation targeted primarily. Since the transliteration is also data format, getting acquainted with it may be handy for those who are interested in the data and programs provided with *PMH II*.

As the present dissertation links to phonology and computing, good deal of work has been done outside of these printed pages, dealing with data and programming. That is why a CD has been enclosed with several copies of the dissertation. The purpose is twofold: **(1)** For those interested in the programs, to provide the source codes, the input data, the output results, as well as software needed to run the programs so as to verify all the procedure. The third parties' software might not be available on the web for download anymore, and while the exact OS version and configuration need not be simulated to finest details, running the exact version of the interpreting software is essential. Data may be found useful for even wider readership. **(2)** The PDF version of the present dissertation is to make up for the missing indices. The dissertation is expected to be downloadable soon after having been defended. But given that the absence of any index (unlike *PMH I*) was intentional, the author feels obliged to supply a means to find out terms and names. Electronic searches are efficient and technology seems ubiquitous.

The dissertation has been streamlined to follow the main topic which is Masoretic Hebrew Tiberian accents as prosody. The background in phonology and a conspectus of *PMH I* as well as data formats used consistently or occasionally throughout *PMH II* and the corpus architecture remarked on in the end of *PMH II* have been removed from the printed pages to be available on the CD along with data and software that was used to obtain the results. The composition of the CD is as follows (please allow for some last minute changes if needed):

\	root (identification, a what-is-here text file)
\PDF	this dissertation (and possibly more stuff related to it)
\PDF\1a	data format of the Hebrew record (the AH# format used in <i>PMH II</i> to transliterate Hebrew; the pages are referred to occasionally as CD1a in <i>PMH II</i>)
\PDF\1b	data format of the sound research (the Glossa transcription and programming metalanguage; the pages are referred to occasionally as CD1b in <i>PMH II</i>)
\PDF\2a	an English commentary to the BnaA program in PDF (please note the programs with internal Czech comments can be found under \software\programs, not here in CD2a)
\PDF\2b	the corpus architecture as suggested in <i>PMH II</i> (the pages are referred to occasionally as CD2b in <i>PMH II</i>)
\PDF\phonology	the nascent Pattern Phonology as a framework (only few selective concepts have been included in <i>PMH II</i>)
\PDF\PMH_I	the conspectus of <i>PMH I</i> that opened the research line (the full text can be searched out on the web)
\data	
\data\input	the CCAT file of the whole TaNaKh in ASCII (and whatever documentation was available to it)
\data\output	the AH# file of the whole TaNaKh output by BnaA (the full version as well as the version reduced to tags)
\data\research	data generated by applying the programs and methods (results, tables, graphs, two versions of a list of all syllables, whatever was relevant but burdensome for the book)
\software	
\software\programs	the BnaA and kolika program codes in Perl (two programs made by the author, non-trivial enough to be included for possible future development; please note English summary of BnaA in PDF\2a; other pieces of code were too trivial or single-purpose)
\software\programs\documentation	whatever can be helpful to run the software
\software\third_parties	specific software used for programming and research

Acronyms and Symbols

Generally Used

A. b. A.	Aharon ben Asher, the pointing scholar of #A
AH#	a transcription of Hebrew used in <i>PMH II</i> , see CD1a (AH# means ‘ASCII Hebrew format’)
AE	American English
aH	Ancient Hebrew (for more, please see iB3)
AQ	accentual queue (a function rhythm unit)
ATR	advanced tongue root
b. A.	ben Asher, a family of Tiberian Masorettes (#C, #A)
BFK	<i>Binární fonetické kódování</i> [Binary Phonetic Coding] Jiří Hedánek (1995)
BLK	<i>Binární lingvistické kódování</i> [Binary Linguistic Coding] Jiří Hedánek (less developed)
bis	twice (this is no acronym, it is a Latin word)
BH	Biblical Hebrew (for more, please see iB3)
BHS	<i>Biblia hebraica stuttgartensia</i>
BH3	<i>Biblia hebraica</i> , 3rd ed.
BHK	<i>Biblia hebraica</i> , 7th ed. (Kittel, Kahle, Alt, Eissfeldt eds.)
BHL	<i>Biblia hebraica leningradensia</i> (2001) ed. Aron Dotan
b. N.	ben Naphtali, a scholar, a school and/or a family of (probably Tiberian) Masorettes
bT	Babylonian Talmud, <i>Talmud Bavli</i> (or: “b.” followed by the name of a tractate)
C	a programming language (also: C++ an object-oriented development of C)
CCAT	Center for the Computer Analysis of Texts, University of Pennsylvania, ASCII format
CRLF	carriage return, line feed (hex 0D 0A—but meant as a system-unspecific newline signal)
Cz.	Czech
db	database (<i>either</i> retrieval data system, <i>or</i> , if qualified in text, a data set in a file collection)
df	descriptive features (a PP/Glossa concept)
dtf	distinctive features (commonplace)
DBA	database administrator
DM	Data Mining (a group of techniques/tools to get unobvious information out of a data set)
DW	Data Warehouse (a data storage and retrieval concept)
E-R	Entity–Relationship
F1, F2, ...	formant No. 1, 2, ... (characteristic strong resonances above the voice frequency, F0)
F#	a programming language (read: F sharp)
GTh	Generative Theories (many, so rather ‘Generative Approach’ would be more appropriate)
HbA	Hebrew of the ben Asher family (for more, please see iB3)
I/O	input/output
ID	identifier
IQ	intonational queue (a function intonation unit)
IRI	International Resource Identifier (an international format of addressing over internet)
IT, ITC	information technology, information technology and communications
°jh	Jiří Hedánek
k#	kethib, the consonantal text of the TN"K
LXX	the Septuagint, the first ancient translation of the TN"K into Greek
LXX ^{Luc}	Lucianic recension of LXX
LXX ^{Orig}	Origenic recension of LXX
LXX ^{RA}	Veronensis and Alexandrinus mss of LXX
L1, L2	first language (mother tongue), second language (any additional tongue, all of them)
MdH	Mediaeval Hebrew (for more, please see iB3)
MGK	Mikraot Gedolot ha’Keter’ v. 2.0.1.0, Bar-Ilan University
Mm	<i>masora magna</i> , the masorah notes in the horizontal margins of the codices (also Weil)
ModH	Modern Hebrew

Mp	<i>masora parva</i> , the masorah notes in vertical margins / inter-column spaces of the codices
ms, mss	manuscript, manuscripts (ms is also milliseconds in an engineering context)
Ms	Masoretic
MSB	most significant bit (analogically also: most significant byte)
MsH	Masoretic Hebrew (for more, please see iB3)
MšH	Mishnaic Hebrew (for more, please see iB3)
MT	Masoretic Text (also TM)
NF	Normal Form (a data condition resulting from a data normalization stage)
NT	New Testament
n. v.	<i>non vidi</i> (Lat.: I have not seen)
oH	Old Hebrew (for more, please see iB3)
OT _h	Optimality Theory (usually OT, but this is Old Testament for many possible readers)
<i>PMH I</i>	Jiří Hedánek (2011) <i>Phonology of Masoretic Hebrew I</i> (the antecedent dissertation)
<i>PMH II</i>	Jiří Hedánek (2017) <i>Phonology of Masoretic Hebrew II</i> (the present dissertation)
PP	Pattern Phonology (a makeshift label infrequently used for the theory in the background)
PQ	pausal queue (a form intonation unit)
q#	qere, the Masoretic pointing over the text of the TN"K
q. v.	<i>quod vide</i> (Lat.: which see)
RegEx	regular expressions
RMS	root mean square, a quadratic mean, see μ here below
RP	Received Pronunciation (a prestige variety of British English)
RTR	retracted tongue root
s/he	she or he (sometimes, I failed to use the general 'they' and felt I should use singular)
tg, Tg	targum
tgJon	targum Jonathan
tgXxx	targum Xxx (where Xxx stands for a self-explanatory acronym of a specific targum)
TN"K	TaNaKh, the Hebrew Bible (Old Testament)
TM	textus masoreticus (Masoretic Text, also MT)
ToBI	Tone and Break Indices (a prosody marking system)
TTS	Text-to-Speech, artificially generated speech, synthetic speech
URL	Uniform Resource Locator (simplistically a path and file, with option to upscale to IRI)
UTF	UCS Transformation Format (UCS = Universal Coded Character Set)
U+	Unicode codepoint (which a hexa value follows)
VOT	voice onset time
vss.	verses
w/	with
Xii	Tre Asar, 12 Minor Prophets, from Hos. to Mal. (as an acronym for <i>a book of the Bible</i>)
#	: (see AH#) <i>in citations</i> : issue, #issue:page, #issue'volume:page
#A	Aleppo Codex
#C	<i>Codex cairensis</i>
#L	<i>Codex leningradensis</i> , the base of BH3 and BHS
#H	Codex Hillely, 1241 Toledo, Spain
#R	Rabbinic Bible as in traditional Jewish editions (its Venice ed. was consulted separately)
#S1	Sassoon ms, 1053 CE
&	∫ (see AH#); <i>in citations</i> : co-publisher
*	reconstructed language data; <i>in citations</i> : proceedings
**	hypothesized language data
+	a word or form not extant (overstrike also serves to mark the same)
/	or; <i>in citations</i> : separates a subtitle unless separated by an established convention already
/ /	slanted lines enclose a phoneme (<i>Glossa</i> does not use this convention and ../x is different)
5#	the Torah
21'b	the melodeme (sub)system of 21 books, the simpler and more regular, majority system
3'b	the melodeme (sub)system of 3 books (Psalms, Proverbs, most of Job), a less regular one
::	<i>in citations</i> : journal; <i>in text</i> : joins the opposites
\	versus, contra, as opposed to; <i>in citations</i> : separates series

< >	<i>AH#</i> : encloses an abbreviated name of a melodeme (an ‘accent’ mark), also separately
< >	encloses graphics (graphic symbols or strings of symbols, not in <i>AH#</i> nor <i>Glossa</i>)
@	_τ (see <i>AH#</i>); <i>in citations</i> : publisher
[]	a sound (<i>IPA</i> may include a string of transliteration symbols, <i>Glossa</i> only a single sound)
^	<i>AH#</i> : stress; <i>in citations</i> : place of publishing
'	<i>AH#</i> : secondary melodeme; <i>in citations</i> : volume (year)
>	whence, came to
{ }	<i>AH#</i> : unusual letters, shapes or signs (for more, see CD1a); <i>Glossa</i> : syllable; <i>cit.:</i> a note
	<i>AH#</i> : raphe in words, <i>paasaeq</i> following words, <i>in citations</i> : co-author
	<i>in citations</i> : introduces author(s) and the whole citation
~	<i>AH#</i> : unspecified strings (“...”) whereas “-” borders morphs; <i>in citations</i> : where inside
°	<i>in citations</i> : (co)editor
< >	encloses graphics (to avoid < > which has a special function in <i>AH#</i> as well as <i>Glossa</i>)
λ	lambda (it marks a bound variable in Lambda Calculus, possibly? Greek λαμβάνω, ‘take’)
μ	arithmetic mean, $(\sum x_n)/n$ and $(\sum wx_n)/\sum w_n$ if weighted
qμ	quadratic mean, $\sqrt{(\sum x_n^2)/n}$ and $\sqrt{(\sum wx_n^2)/\sum w_n}$ if weighted
hμ	harmonic mean, $n/(\sum (1/x_n))$ and $\sum w_n/(\sum (w_n/x_n))$ if weighted
⊕ ⊖	a positive point, a negative point

Regular symbols and frequent acronyms (such as Eng. for English, MIT for the school, & for ‘and’) need no explanation. Infrequently, an ad hoc symbol might have been used where the meaning follows clearly from the text. In a similar vein, domain-specific symbols have occasionally been used, such as 4QSam^a for a Dead Sea scroll label, ID for ‘identifier’, UTF-8 for a coding, with local or no explanation.

Citations in *PMH II* are standardized. Special symbol sigils may appear, however, in CD. That is why the symbols are included above. Please note occasional collections of upper case letters need not be acronyms at all but transliterated root letters from Hebrew vocabulary. Please check the context if in doubt. [š] and <Š> are considered equivalent to [j] and <Sh> as is known in the US.

Transcriptions and transliterations

AH#—a Hebrew transcription

This list, compiled for quick reference, is no substitute for the systematic treatment in *PMH I*, chap. H, p:274–289, version c7.6, or as input data format for *PMH II* version c8.15. Please check the CD.

!	<i>word</i> : uninterpreted dagesh, <i>intonation</i> : stress/emphasis
"	<i>word</i> : melodeme position
#	<i>space</i> : <i>sooph paasuq</i> (consequently, # initial word), <i>acronym</i> : mss prefix: #A, type of text suffix: q#
\$	uninterpreted Ψ (interpreted is either Sh, or 5)
%	<i>word/tag</i> : ⚡
&	<i>word/tag</i> : ⚡ <i>search</i> : <{ ... <&> ... }> logical AND
'	<i>word</i> : prepositive melodeme, generally another melodeme mark
()	<i>word/tag</i> : only graphical letter(s), also <i>mater</i> if needed, <i>note</i> : name of the note’s author
*	<i>word/tag</i> : position of note, <i>space</i> : adds rabbinical or ** other note, <i>intonation</i> : stress
+	<i>anywhere</i> : concatenation (suffixes if - marks prefixes), <i>intonation</i> : smooth link
,	<i>word</i> : <i>meteg</i> , <i>tag</i> : conjunctive melodemes if needed, <i>intonation</i> : low
-	<i>word</i> : 1-phone substitute (unlike ~, a string substitute), or prefix separator, <i>intonation</i> : mid-level
.	<i>word</i> : uninterpreted shwa, note that shwa <i>nax</i> is (.) if needed, <i>tag</i> : divides melodemes in a word
/	<i>intonation/tag/possible in words</i> : rise (usually doubled, also / slow rise, /// steep rise)
0	<i>word/tag</i> : circellus
5	<i>word/tag</i> : ⚡ (also Ss or Ś if all digits are needed)
7	<i>word/tag</i> : ⚡ (also Tf or V if all digits are needed)

MsH melodeme symbols sorted by acronyms, with full names and comments appended:

	7f	7ifxaa
	7r	7arxaa
^	ahOl	%athnaax haaphuukh+&oolae (the first component of olJr follows ah and detached from Jr)
	at	%athnaax
	az (qd)	%azlaa (also qadhmaa if with gaeraesh)
	azLg	%azlaa l:gharmee
2	cn	cinnoor
	ct	cinnooriith
Xx	cnXx	cinnooriith+Xx in case the combination is found meaningful and is missing
s	dr	dargaa
s	drLg	dargaa l:gharmee (1Sam. 20:21)
	dx	d:xii
	,	ga&ja (i.e. maethaegh)—not a melodeme, but certainly a prosody mark
	ga	garsha
v	gl	galgal (j:rax baen joomoo; e.g. in front of pz which is not a king)
z	gm	gaershajim
r	gr	gaeraesh
┘	il	&illuuq
	ilLg	&illuuq l:gharmee
<	jt	j:thiiv
	,	maethaegh (i.e. ga&ja)—not a melodeme, but certainly a prosody mark
^	mh	mahpaakh
	mhLg	mahpaakh l:gharmee
^	mhMc	mahpaakh m:cunnar (in an open syllable in front of ct)
	mj	maaj:laa
Xx	mjXx	maaj:laa+Xx in case the combination is found meaningful and is missing
	mk	meer:khaa k:fulaa
	mn	muunax
	mnLg	muunax l:gharmee
	mr	meer:khaa
	mrLg	meer:khaa l:gharmee
	mrMc	meer:khaa m:cunnaeraeth (in an open syllable in front of ct)
	olJr	&oolae w:jooreedh
~	p\$	pash7aa (copied on the accented syllable if paenultimate)
F	pz	paazeer
	qd	qadhmaa (in %azlaa + qadhmaa, see above)
g	qp	qarnee phaaraa
*	Rv rv	r:via& gaadhool, qaa7aan
*	rvMg	r:via& mugrash
∴	sg	s:ghooltaa
#	sh	shalshaelaeth q:7annaa
	Sh	shalshaelaeth (g:dhoolaa)
	sq	silluuq
2	tl	t:liishaa q:7annaa
2	Tl	t:liishaa g:dhoolaa
3	tv	t:viir
∴	zq	zaaqeeph qaa7aan
F	Zq	zaaqeeph gaadhool
2	zr	zarqaa

These are not melodemes proper but possibly the earliest prosody marking:

-	_	maqqeef
		paasaeeq

AH#—a list of Hebrew intonation contour *analytic marking*

This is an extension of AH# to interpret melodemes inside <i[]i> in transliterated texts as smooth stretches, or between : and ; with : separating each melodeme equivalent. The symbols are iconic, and as free from clashing with AH# as possible. For more detail, please refer to the CD, version c8.14.

!	an optional stress (!! an emphasis) attached to a melodic step
„	low level
--	mid level
//	rise (/ slow rise, /// steep rise)
^	high rise (starting above bottom, e.g. ^//)
:	melodeme separator (to keep individual melodeme stretches distinct)
;	end of a melodeme-separated string
\\	fall (\ slow fall, \\ \\ steep fall)
v	low fall (starting below top, e.g. v\\)
``	high level (expects no ` wildcard is doubled)
	conclusion regardless of rising or falling (also mild, and abrupt)
+	linking (esp. in contour; in effect, it can make falls low, +\\, \\+, and rises high, +//, //+)
=	appends a comment or a melodeme symbol to a section of contour
< >	if < >> >> > are put around sections of contour, no : and ; separators are needed
*	stress if both ! and " are found clashing with regular AH#

AH#—a list of Hebrew intonation contour *simple marking*

This is a makeshift extension of AH# to interpret melodemes inside <melodeme tags> or in free text. It is to be simple, not comprehensive, so it does not compete with the contour marking above (though it certainly may replace it if it does well). That is why the core are the Roman numerals, the other symbols are auxiliary and should be used only if necessary. (They were added one by one during the usage.) One of the reasons the ‘simple marking’ was made is the Word Processor was incapable to keep in place melody contours drawn as lines throughout text. Contours became inaccessible if put behind the text, no setting could change these bugs and, to top it off, a contour could disappear any time after. Another reason was contours are not ideal for approximate pitch categories as they are too specific. Due to this and also due to intensive usage of the highest and lowest levels, this marking is not directly translatable to Glossa description unlike the analytic marking above that should make no such pitch distortion.

=i	low level, the bottom on the imaginary scale of MsH intonation contours (a Glossa zone: 1)
=ii	mid-low, the higher position of the low band sublinear melodemes (Glossa zones: 2..3)
=iii	middle level, a band many melodeme contours need to pass through (Glossa zones: 4..6)
=iv	mid-high, the lower position of the high band supralinear melodemes (Glossa zones: 7..8)
=v	high level, the top reach any MsH melodeme contour can rise to (a Glossa zone: 9)
/	a rising link between two points, such as =i/iii for a low-to-mid rise
\	a falling link between two points, such as =v\i for a top-to-bottom fall
_	a level suffix for a point that keeps the level on, such as =ii_ for mid-low to go on (distinct from ..)
..	lengthening (dots appended can be iconic, ... or etc.), not necessarily keeping the level (see _)
~	irrelevant portion of the contours or free to supply, such as =ii/iii~ for mild rise with open end
-	minus for half-level lowering, such as =-iv for a lower iv
+	plus for half-level rising, such as =+iv for a higher iv
	concluding nucleus, unspecified for direction, also for a stronger conclusion
;	a juncture (a potential break whether or not materialized, also other means of phonetic division)
!	emphasis (again, a shorthand for more complex phonetic phenomena)

Glossa—General Language of Speech Sound Analysis

This is a short list of a few symbols that may seem somewhat arcane for a reader who has not studied the description of the sound metalanguage in the enclosed CD. The brief explanations provided to each entry are not intended to replace the syntax and semantics of the data format.

Glossa as language about language keeps keywords at minimum and tries to do most of the duty with combinations of non-language symbols. Consequently, letter strings are mostly placeholders. It is quite obvious with ubiquitous *xy*. Also English words rarely represent themselves. At times, italic or another font enhances their symbolic nature, that is, *key* insted of *key* is to suggest any *key* can be put there.

"	phonology (lasts until switched over by ' phonetics) Often /classic/ is used as " is too unobtrusive by design.
'	phonetics (lasts until switched over by " phonology)
()	a descriptor following a transcriptor, a specifier preceding a higher unit,
	a <i>type-of</i> transcriptor that is not a regular transcriptor nor a formal category of segments
..#x	a missing segment x, absent from the position where ..x might be expected
+	joins two components of a coarticulated segment, also ..x+{} if a syllabic break is inside ..x
-x	a phthong, a component of a segment (s can be a segment ..s, or a phthong -s in ..ts)
--x ----x	duration of a segment x (can be used for a non-phonological or any type of length)
..x ...x	length of segment x (can be used for a phonological or any type of duration)
..x \	an intensional ..x phasing out of the preceding segment (which it closes) and x sets on
./x ..x/	a detensional ..x recedes and is closing while the following segment phases in (CD1b2.1.4.4)
„x	explicitly voiceless (, ; : can be declared for various meanings; this one is implicit)
=	moraic length (used as a prefix, such as in==a)
{ }	a syllable boundary
{{ }}	an expression (it calculates a number so it can stand where a number can stand)
[]	a sound (a single sound in <i>Glossa</i> , while <i>IPA</i> may include a string of sounds)
[(x y z)]	a list of transcriptor alternatives represented in a single transcriptor
[{ }]	transliteration of graphics (in code; often it is easier and neater to use < > in a regular text)
..x[y]	a y allophone of an x phoneme
^x	an abstractor, e.g. to broaden categories (^A stands for all kinds of a-sounds)
^()	a categorizer (to mark up a few special categories of marginal interest in phonology)
~	fluctuation; ~~~ (i.e. 3 ~'s) mark an unspecified text / an unclear record; \~/ is either \, or /
C V	symbols for any consonant and any vowel are traditional, and not a part of Glossa
N _q	a number; a meta-character had to be resorted to; it is not a part of Glossa
N _o ..N _o	an interval of two numbers (., ., .. can indicate close/open)
N _o x _y N _o	xy is a vowel (any script can be used, also : is a letter) defined in the Glossaic 9×9 grid Please note Glossa tries to get by with ASCII only. Hence any non-ASCII character was not meant as a part of Glossa in this description. But any character can be integrated.

Transcriptions of sound are enclosed either in [] if phonetic values of symbols are unequivocal.

Qualified brackets ^{IPA}[]_{IPA} are used if specific values of IPA transcription apply. (They do inside / ./)

Glossa is used if IPA failed to offer the level of detail or generalization (at all, or easy to typeset).

Glossa needs no specific brackets. [] or "[] used inside Glossa enclose a single sound only, unlike IPA.

Figures are put next to the text they relate to, anchored by ►, ▼, ◀ or ▲ to point in the direction of the figure. Exceptionally, a leader line — has been used to link a detail in the figure. Rarely, none of the means has been used due to technical constraints but only where the relationship was unambiguous (as when set inside a line of text that introduces the figure and takes the topic up again).

Approach

The dissertation *Phonology of Masoretic Hebrew II: Accents as Prosody (PMH II)* can be approached in two ways. Directly, it is a graphemic research dealing with Tiberian accent system. It picks up a topic already opened in my previous dissertation *Phonology of Masoretic Hebrew I (PMH I)* defended at the Hussite School of Theology of the University of Charles on 2013-09-11. Back then, it was a sideline that could not have been developed for capacity limits though the idea, excerpts and basic preliminary conjectures were ready. The present dissertation attempts to follow this line, using new excerpts as well as those earlier ones that were not included in *PMH I*. Occasionally, *PMH II* refers to the earlier text so as to avoid unnecessary repetition, but given that conclusions in *PMH I* had to be partially adjusted, the key points in *PMH I* have been rehearsed in *PMH II*, which makes the book relatively self-contained.

Tiberian accents, however, make part of a planned four-stage project to research linguistically rich information in the record of the Masoretic redaction of the Hebrew text in the set of writings known among Christians as the Old Testament and, in Jewry, as TaNaKh (the Torah, Prophets and Writings). The intended project is philological and linguistic rather than historical, which means phonology and engineering concerns are put before other legitimate questions of Hebrew scholarship in the whole project as it is an attempt to gradually diverge from the traditional method of basing solely on selective excerpts, while turning to and considering statistically significant quantities of occurrences (which, for TaNaKh, means all the available quantity, the whole of TaNaKh). *PMH I* was still based entirely on excerpts so as to illustrate questions the projects intends to target, and to explain motivations, reasons, possibilities and purposes. This *PMH II* sticks to the traditional method partially, only insofar as it can show the need for a more thorough, technology-supported approach. In dealing with sound where no native speakers nor recordings are available, the need for enhanced gleaning of information appears especially pressing. With that purpose in mind, a few methods have already been suggested, and some used, to help develop the research toward a corpus and, finally, a phonology of Masoretic Hebrew.

Other approaches instrumental to reach the wider aims of the project (such as examining secondary historical resources, applications in various traditions and communities, theological as well as musical interpretations) are left to specialists. Sound synthesis technology engineers, experts in computing and mathematicians are welcome and needed in the next two stages of the planned project (*PMH I* p:303).

Hence, the present *PMH II* can also be approached in the framework where the earlier *PMH I* makes a background. That is why *PMH I* is frequently referred to and its detailed summary was included in the accompanying CD (though *PMH I* should be accessible for download, too) beginning from a general phonology outline since the distant purpose of the project is to arrive at a phonology of the Masoretic Hebrew. The concept of phonology that began to emerge in *PMH I* has been developed further while the work on *PMH II* went on. Still, no general phonological theory is offered in *PMH II* so far in order to keep the theory open to further discoveries, and for capacity reasons as the emergent non-procedural structuralist concept of phonology would add fifty more pages to *PMH II*. A few terms, however, have been used throughout *PMH II*, so to explain them a few brief passages on phonology are included, too.

Methodology and interpretation principles are concerns in the *PMH* project. Some of the methods have been used in *PMH II* to get results (a data format and programs). A sound transcription has been developed but used little. It is intended for the corpus whose design is enclosed in the CD. For data processing methods, mentioned if used, or implied if intended, the enclosed CD can be referred to.

A1 Accents Introduced

Prior to dealing with the main topic, which are marks known as *accents* and how to interpret them, a few words should be mentioned concerning the language that used the marks and left them recorded.

Masoretic Hebrew is a language or dialects defined by who used it, the Masorete scholars. *‘Tiberian’* Hebrew is a language defined by the specific set of auxiliary marks to conserve its pronunciation (or a manner of delivery in congregation). Graphics need interpretation and need not imply a specific dialect. There were more manners of marking. The present dissertation has concentrated on the interpretation of the most developed, consistent, stable since it has emerged, well attested and presently de facto standard Tiberian system.¹ It is convenient to start a research from it. The project plans to include more systems of record step by step. The degree to which those systems represent phonologies of different dialects has not been satisfactorily concluded. Local dialects seem probable but it cannot be assumed in advance that each system always marked only its own dialect. This project at its current stage does not aim at mapping relationships between systems of graphics and possible dialect phonologies, it moves the task to a later stage. Now it focuses on a specific issue inside the Tiberian system. The issue seems somewhat neglected by the majority of Hebrew scholars though it might be of phonological relevance.

Before the issue can be explained, it should be specified what elements the text of a Masoretic Bible consists of (apart from the margins, introductory and closing pages which could be quite many). Texts in rows and columns marked up with that system consisted of several types of letters and markings.

Letters are sometimes called a *consonantal* text (though it did contain vocalic hints, but no explicit vowels). It was the text inherited from ancient times and was treated as sacred already in the times of the Masoretes. They were over a dozen generations of scholars who cared for that literary heritage in late Antiquity and early Middle Ages with the intention of making sure the heritage was properly conserved for future generations of Jewry dispersed for centuries already throughout the known world.²

The text also contained *editors’ markings*, of which only references to marginal notes are clear today.

Unlike the letters, most of the marks come in all probability from early Middle Ages. The scarcity of manuscript witnesses does not allow us to see today how the system of marking grew. Still, it is fairly certain to claim it originated after the two Talmuds have been closed and prior to the emergence of the mature Tiberian system in the first manuscript known to us, in 896 CE. The earliest witnesses of similar systems appeared soon after. Apparently, they were still somewhat experimental, mostly independent of, later partially inspired by or combined with the Tiberian system until that one finally prevailed.

Vocalization is another kind of marking. Consonant letters utilized to suggest vowels have been used almost since Hebrew was put to writing until today but the inherited text used them sparingly and to insert new ones into the rows of text later was not an option. Vowels or consonant refinements needed to be written close to the consonants or vocalic hints in the row. In Tiberian notation, most of them got in the line below or just above the letters. Often, they correspond well to the vowels hinted at by the letters in the inherited text. It should be put clearly, however, the two types of vowels, the ones implied in the text, and the ones spelt out in the marking attached to the text, are two different sets of vowels distant by many centuries from each other. If the same, it only testifies to the stability of the language.

The inherited consonantal record (the type known today as *abjad* traditionally used in other Semitic languages, too) puts down onsets obligatorily present in any syllable, and codas in closed syllables or some of a narrow set of consonants that can suggest the type of vowel in an open syllable if needed. It is the onset that is certain to be there. Hence, a vowel mark attaches to this consonant, typically below or above. Next to it below or above if appropriate, another type of mark is appended provided the mark applies to the syllable. Some of the marks do not attach to syllables but the beginning or end of a word.

¹ The oldest ms is #C (*Codex cairensis*, Cairo Codex) of +895, the only one explicitly from Tiberias. It is attributed to Moshe ben Asher, though the text appears to be closer to the ben Naphtali family. It is incomplete. The one nearly complete (though most of Torah is missing) is #A (Aleppo Codex) of +925. A century later, a colophon was added to attribute the ms to Aharon b. Asher and dedicate it to the Karaite community in Jerusalem. A.b.A.’s Tiberian base is only assumed. At the beginning of this later century, the most complete of mss was finished, #L (*Leningradensis*) of +1008. The writer of its colophon lived in an Islamic country. Apart from #C, the few oldest mss come from +10th cent.: +916 #P, Petrograd Codex (Babylonian pointing, Tiberian tradition, several pages in Tiberian pointing); +925 #B (British Museum Or4445), less close to #A than #L (#A was and still is, for different reasons, considered a model); then also #S (Sassoon 507 a.k.a. Jerusalem Heb. 24° 5702, #J), a mix of b.A. and b.N. type, perhaps closer to b.N. but corrected to b.A.; and #S1 (Sassoon 1053), the least meticulous one.

² For more on the Masoretes and their responsibility, please refer to *Phonology of Masoretic Hebrew I:58nn*.

These marks in the line above or below the row of letters are called *accents*. The European term for this kind of marking is an unfortunate mistranslation (or rather, not a translation at all) of the Hebrew term for them, טעמים, *teamim* (in sg. טעם, *ta'am*, lit. ‘taste’), which means rather ‘a shade’ of meaning.

The common explanation, virtually unchallenged, is the accents marked positions of stress, musical motives for ritual chant, and syntactic segmentation, simultaneously. It does not seem satisfactory:

(1) Would *ta'am* be a real accent mark, one or two shapes would do (save for tonal languages, which was hardly the case of Hebrew). They, however, count several dozens. Some of them were not placed on accented syllables. Similarly, Palestinian systems and the simpler Babylonian one did not place their analogous marks on stress at all, and the more complicated Babylonian one did so partially, only in its later stage, especially when it combined with the Tiberian one. Tiberian marks were put on enclitics, the Babylonians in later stage left them on the main word. It does not have to mean the Tiberian system stressed enclitics.³ Also in main words, marks were infrequently put on unaccented syllables and many marks attached to the first or the last letter of the word (as mentioned). Phonetically, words do not have to be stressed. It is language-related but often words in context are unstressed, which may mean they have no accent (dependent on definitions of the terms). Tiberian-pointed Masoretic Hebrew marked a word explicitly accentless if it was linked with *maqeph* to the following word, possibly in a chain of more words of which only the last one was accented. Unaccented words are frequent but words are ‘accented’ so often that almost every word in text carries an ‘accent’. Two ‘accents’ on a word are not rare.⁴ Usually they sit on syllables that (supposedly) carry a primary stress and, in many instances, a secondary stress. However, two ‘accents’ side by side do not support the idea the two are both stresses.⁵

(2) Ritual chant melodies differ in communities. They often relate to marks freely, somewhere more melodies are available to a mark and often the same tune is sung to more marks. Some texts are not read nor sung in synagogues in virtually any rite. Still, they are marked throughout as all other texts. Deviations from syntactic regularity (see 3 below) are usually explained, if at all, with musical reasons, but explicit, documented accounts are hard to find. Modern syntactic explanations are often content with this vague reason. As far as known to me, it was only Wickes 1881:98ff⁶ who devoted chap. XVII to it. Though he furnished examples of alleged musically motivated transformations, he provided no explanation. They are “mere musical embellishment” (p:70) “that it gave variety to the melody” (p:98 etc.) or at most, he speaks of “rules of melody” (p:34). What musical version of an accent he had in mind in which case, he failed to show (apart from a few not very specific remarks in 1881 chap. II).⁷

(3) Syntactic marking meets the data better,⁸ but its modern development is very complex. Moreover, the Tiberian system has quite a few marks that do not segment but join. It is hard to think such fairly many kinds of tight joins were usable in practice. Prepositions and construct forms (i.e. annexed

³ I do not deal with alternative systems at this stage, so conclusions from comparison are to be deferred.

⁴ Rarely, three accent marks can be met on a word, usually made of two accents of which one is a two-part mark.

⁵ Price (2010) *The Syntax of Masoretic Accents in the Hebrew Bible* (2nd ed., rev., corr., PDF; 1st ed. New York: Edwin Mellen Press) p:3 ft:8 listed words that are marked with ‘accents’ simultaneously on the penult and ultima.

⁶ William Wickes (1881) *A Treatise on the Accentuation of the So-called Poetical Books of the Old Testament, Psalms, Proverbs, and Job* (Oxford: Clarendon Press). In 1970, New York: Ktav published his 1881 & 1887 in one.

⁷ It should be noted, however, some Wickes’s reasons, viz. concerning low syllable counts working a change or perhaps also smooth linking of some accents better than others fit well to the prosody explanation offered later on here. Still, with no particulars of musical reasons, it was not possible to make a systematic confrontation, though comparing all available musical versions exceeds the capacity of *PMH II* and my qualifications. Noteworthy is a remark by Wickes at the very end of the body of his book (1881:101): “For the discovery of these remarkable laws of transformation [due to musical reasons] we are mainly indebted to Christian accentuologists of the seventeenth century. They are almost all found in Wasmuth’s *Institutio methodica accentuationis Hebrææ* (Rostock 1664). Rabbinical writers on the accents had not the slightest idea of them.” One can ask why the Rabbis who musically performed the marks had no idea of them, and Christian accentuologists who did not perform them were aware of them. Apart from syntactic theories that welcome some accent transformations as they regularize the record, new checking of how accents affect each other in music would be apt to confront also with the prosody theory offered here that needs no accent transformations, at least at this stage, and is happy with irregular diversity. In fact, also Wickes mentioned prosody: a “rhythmical effect” and “an emphasis (of melody and sense)” (1881:p32, also 31).

⁸ Unsurprisingly, given the data-set the model derives from (training data) includes all the data. Models created this way apply to the same data without errors. But the error-free operation does not tell if the model correctly generalizes, or only raised the found instances (including wrong ones) to ‘rules’. Where no independent testing data are available, methods can be used to simulate independence for testing. (See a few simple ones, the CD2b2.1 ft:23.)

nominals) should have no accent, still they carry some of the marks in the Tiberian system and enclitics are marked regularly. This system assigned almost every word in text a mark, sometimes two. It is too much and two marks on a word cannot be explained by syntax at all,⁹ let alone two consecutive syllables within a single word. Price 2010:3 wrote: “When used to mark secondary stress, such an accent should be interpreted as a substitute for *Metheg*,¹⁰ with no conjunctive or disjunctive function in cantillation.” One may ask why different marks were used for that function, and not only *Metheg*?¹¹ Syntactic links in regular texts exist also between verses. If melodemes marked syntax, they should also cover these dependencies. Still, nothing like that happens. Every verse is self-contained in the Masoretic concept, each one can be intoned independently regardless of the syntax around. If the principle were binary halving, such as modern syntactic trees assume, each verse would contain the strongest disjunctives while the weaker disjunctives would be the less the farther they are from the root. However, this is not the case; some shorter verses have only weaker disjunctives and lack the stronger ones.¹²

It should also be noted the Tiberian system in accents (not in vowels) was used differently in three books, Psalms, Proverbs and Job, than the manner utilized in the rest of the books of TaNaKh (TN"K). Some of the marks are the same, a few marks are different, and apparently, what was different, was the logic from the one applied in the other 21 books of TN"K. Labelling the 21-book (21'b) system as ‘prosaic’ and the 3-book (3'b) system as ‘poetic’ is inappropriate since many passages in the 21 books are poetical in nature and the short prosaic texts in Job (1 five-verse, 1 two-verse and 25 single-verse stretches) are marked up the same as the majority of the book whereas the 35 opening and 11 closing verses are marked up with the 21'b system. The one responsible for the final form of Job probably knew what he was doing in letting the two markings side by side. Small opening and closing prosaic lines are also met in Psalms and Proverbs, marked up ‘poetically’. A typical love poetry as in Song of Songs was in turn marked up in a ‘prosaic’ manner. Genres do not seem to correlate with the type of marking, at least as such—unless they reflect a need specific for a genre (which begs a further research).

The fundamental proposition of this (and previous) dissertation is that about forty auxiliary marks of that system which are quite obviously not meant as vowels mark speech prosody. The proposition meets the fact that some marked stress, others marked whole words; the fact that different melodies are found in different countries, possibly developed out of melodies of speech; the fact that prosody complies with syntactic divisions. (Correct prosody should reflect syntax, but does not coincide with it and does not have it as its only purpose.) The proposition also explains why other systems filled unmarked positions step by step due to its own development and the effect the Tiberian system had on them. It also explains why the marks could have been earlier employed also in texts that were not Biblical, not even liturgical, but in fact entirely secular.¹³ It was only in the course of time that the marking started to be reserved for Biblical texts (but never for use in liturgy). Prosodic interpretations of the marks, unlike syntactic ones, are capable to accommodate discrepancies in different manuscripts and do not depend on a single particular version of the marking. In fact, different systems and usages only increase the richness of description. A theory of their interpretation should be able to cope with variability and differences, and not exclude the rest as wrong or mistaken if it fails to fit a ‘grammar’.

On the other hand, a sentence grammar, unlike an accent phrase structure grammar, appears to be relevant. Verses are divided by means of disjunctive marks (apart from conjunctives that do not divide but link) into meaningful units: clauses, phrases such as a subject phrase and the predicate or an object phrase, an adverbial, a vocative (cf Price 2010:34) etc. Stronger accents mark up the conclusions of the stretches. Placing prominence at the ends is typical of the two systems (21'b and 3'b). Even sequences of more accents of approximately equal level need a special accent before their consecution arrives at an accent of a higher level. Price 2010 calls such concluding accents “near” and the regular ones “remote” disjunctives. But nearness and remoteness do not seem to relate well to some instances so I

⁹ See later on in iiB2c for three special passages of double marking in TaNaKh dealt with in detail.

¹⁰ Assumedly, a secondary stress mark. Possibly with more functions, which the quotation is not concerned with.

¹¹ It is interesting, however, Price counts *munach*, *azla*, *tiphcha*, *merkha* and *mahpakh* (sorted by frequency) as the most usual accent substitutes for *metheg* in the Pentateuch. These are different shapes each (see iiB1c for shape types). It could be possibly worth examining if this is significant. This *PMH II* attempts to do exactly that.

¹² Particular examples of the melodemes not following syntax were offered by Wickes 1881 (a binary splitting advocate) cf e.g. p:49–50. I do not need binary splitting and have offered my own examples in *PMH I* e.g. p:223–226 and *passim*. I am going to point out specific instances of syntax disagreement on the fly also herein, cf iiB1c.

¹³ For details please see *PMH I*:213–214 (and footnotes). Such documents if available could broaden the research.

Tiphcha _˘ or *tiphcha* _˘ –*merkha* _˘ or *tiphcha* _˘ –*darga* _˘ –*merkha* _˘ or *tiphcha* _˘ –*merkha* _˘ –*darga* _˘ is as if a prolonged *tiphcha*. (A strong form of *merkha* _˘ is *merkha kphula* _˘.) *Pashta* _˘ or *pashta* _˘ –*mahpakh* _˘ or *pashta* _˘ –*merkha* _˘ possibly also preceded by *munach* _˘ or *qadma* _˘ fit into the same patterns. More such sequences are *tevir* _˘ preceded by *darga* _˘ or *merkha* _˘, preceded in turn by *munach* _˘ or *qadma* _˘; *geresh* _˘ pairs frequently with *qadma* _˘; a rare ^{α,σ} *qarne phara* (probably more appropriately called *pazer gadol*) is typically preceded by a _˘ *galgal*; *merkha* _˘ or *mahpakh* _˘ or *darga* _˘ can be preceded by a *qadma* _˘ while a *qadma* itself can be introduced by a ^α *telisha qtanna*. Consonants reflect such linking.

These have been sequences met frequently, not exceptionally or at least well possibly in the 21 books including the introductory and closing verses of Job. They represent the majority marking in TN"K.

The system in Psalms, Proverbs and the body of Job appears to be less schematic and more flexible. The flexibility manifests especially in that the pattern of consecutions culminating in a cadence or a precursor does not seem so essential than in 21'b. Conclusions can be developed more, which may mean precursors may be two and different (cf e.g. *revia* _˘ –*munach* _˘ *Legarme* –*geresh* in 21'b) or even none at all. Accents combine more freely. Also, the *athnach* _˘ appears weaker and has more alternatives so a cesura can be removed. Typical are short terminations of the verses in 3'b (verses tend to be shorter, anyway). Consequently, combined with more varied sequences, it leaves less space for portioning. The 3'b system as if dropped one tier of hierarchy (the one with *zaqeph*s in 21'b) and finely developed its fewer tiers (e.g. there are more types of *revia* _˘). In prosodic view, contours are preferred to phrasing. It can also be seen in the refined pitch marking: Some melodemes obtained higher-pitch counterparts and the distinction spread to phrasal melodemes in offering a choice of pitch sensitive splitter marks.

For 3'b, the general structure is as follows:¹⁵

(the Hebrew writing order is followed)

end : _˘ pc cs cs cs cs ... _˘ pc cs cs cs cs ... , [<] pc cs cs cs cs ... ⇐beginning
with *silluq* *athnach* and *ole we-yored* as the three main divisions in

the verse. Price 2010:149–161 devoted a detailed discussion to prove Wickes was misled by his rule of continuous dichotomy into believing , [<] *ole we-yored* was a stronger basic disjunctive than _˘ *athnach*, a conclusion that has reverberated in textbooks well over a century. I find Price's points convincing in that *athnach* and *ole we-yored* are accents of the same strength. A cesura can be captured with either. This triplet structure, however, is inefficient in polystichous verses.¹⁶ Alternatives increase flexibility:

: _˘ [˘] pc cs cs cs ... _˘ pc cs cs cs ... , [<] pc cs cs cs ... This tier can be developed
revia _˘ *mugrash* (or *revia* _˘) this or *pazer* this or *azla legarme* ↓ with a *revia* _˘ *gadol* tier and
or *shalsholet gdola* if 1-word if 1-word if 1-word that in turn with a *pazer* tier.

So [˘] pc₁ cs₁ cs₁ cs₁ ... _˘ pc₁ cs₁ cs₁ cs₁ ... , [<] pc₁ cs₁ cs₁ cs₁ ... and for each of these
are *dechi revia* _˘ *gadol* ... *dechi revia* _˘ *gadol* ... *šinnor revia* _˘ *gadol* ...
the next tier: or *mahpakh legarme* ↑ and/or *revia* _˘ *qatan* here

for all pc₁ and cs₁ (*dechi* or *šinnor* or *revia* _˘ *gadol* and *qatan*) pc₂ –|*azla* _˘ *legarme* cs₂ –[˘]*pazer* cs₂ –[˘]*pazer* ...
while *mahpakh legarme* | [<] can also follow *revia* _˘ *mugrash*, this way: : _˘ | [<]

and also may replace pc₁ *dechi* and pc₂ *azla legarme* (above) in a short word.

Conjunctives link to the disjunctives in these (and many other) typical sequences: pc₂ *azla legarme* can be extended with *mahpakh mešunneret* (i.e. *mahpakh* –*šinnorit* combination on a word) or a *mahpakh*. *Pazer* is preceded with *galgal*; *dechi* comes after *munach* following *mahpakh*. All three types of *revia* _˘ can be preceded by *merkha* (and *revia* _˘ *gadol* by *mahpakh*). *Ole we-yored* follows *athnach haphuch*. *Silluq* can be ushered in with a variety of links: *merkha mešunneret* or *mahpakh* or *merkha* or *munach* after *tarcha*. Where *mahpakh* can appear, *illuy* (a sort of a supralinear *munach*) can appear, too.

This is only a selection of the variability the 3'b system offers. Regularizing it into rules can be done by help of virtual accents (i.e. visibly absent), substitutes (i.e. an accent, unexpected by a rule if present, is taken to be another) and conjecturing errors in manuscripts and editions (certainly not perfect).

The topic of accents seems to be pushed away almost to triviality in Hebrew grammars.¹⁷ Due to it, prior to mentioning basic references, I am going to provide for an introductory awareness or reviewing, and mention two or three easily available resources, with different strengths each.

¹⁵ Where the mark is not shown please refer to lists of accents/melodemes earlier in Acronyms or later in iiB1c.

¹⁶ Price 2010:157 admits it explicitly. This also might confirm prosody rather than phrasing was the purpose.

¹⁷ For example, the two-volume Paul Joüon | Takamitsu Muraoka (2003) *A Grammar of Biblical Hebrew* (Rome: Pontifical Biblical Institute Press), whose term 'precursor' I found inspiring, devoted it six pages, just as much as over a century ago an abridged Heinrich Ewald (1870) *Ewald's Introductory Hebrew Grammar* (transl. J. Frederick Smith, London: Asher & Co.; Germ. orig. 1828, *Grammatik der hebräischen Sprache des A. T. in vollständiger*

Helmut Richter's website,¹⁸ where it concerns the syntax of accents, is a re-arranged graphical digest of Mordechai Breuer 1981,¹⁹ whose exceptions and complexities excluded, the web resulted in a format easy to grasp. A reader can expect to understand and remember the 21'b system and comprehend 3'b.

Price 2010 simplifies just as Richter does (which Richter admits explicitly) but where he goes beyond Richter is in exemplifying his claims by counts and lists, and on rare phenomena, complete lists or such ones complete in Torah as he draws from a corpus of which he selects three books for the 3'b system and five books for the one of 21'b. He, however, fails to go into manuscripts; if he doubts conditions, he makes a remark in footnotes.²⁰ (I do try to check out a few crucial mss in *PMH II* as I did in *PMH I*.) Unlike Richter, he expects a generative grammar logic behind the accents, which he keeps exact also by means of substitutions (a present but unfit accent in place of an absent but logically suitable accent is a disguise of the right one).²¹ I cannot recommend a substitution logic. On the other hand, the effort to regularize accents into as precise rules as possible so as to capture the corpus, it results in having emerge the drawbacks of the syntactic approach clearer than in other methods of presentation.

Another initial entry can be Aron Dotan 2007 in *EJ*,²² notably for his survey on Masoretic markings in context. The next *EJ* entry is *Masoretic Accents (Musical Rendition)* by Avigdor Herzog, p:656–664. For musical interpretation briefly, one can refer also to Joshua R. Jacobson (2013:275–283).²³

Basic references are not very many.

William Wickes 1881 and 1887, mentioned above, though 130 years old, keeps to be still a work that has determined accentuologic research for many decades until today (mostly for his logic of binary halving²⁴ that suits so well to modern binary trees). Thanks to the two-in-one re-edition of the books by

Kürze, Leipzig: Hahnschen Verlag) who, however, devoted a 23-page treatment (p:77-99) to them in his full 1836 edition, *A Grammar of the Hebrew Language* (transl. John Nicholson, London: Whittaker and Co.; Germ. orig. 1827, *Kritische Grammatik der hebräischen Sprache*, Leipzig: Hahnschen). Exceptional is also Bauer | Leander (1922₁) *Historische Grammatik der hebräischen Sprache des A. T.* (Halle: Niemeyer) with 18 pages (136–154) as e.g. *Gesenius' Hebrew Grammar* (1909₂₈₋₂; transl. A. E. Cowley, Oxford: Clarendon Press; 1813₁) offered only five pages, one page more than Johannis Buxtorfii [filii] (1705₄) *Epitome grammaticæ Hebrææ...* (Bernæ: Johanne Leusden) p:18–21, and one less than his (1669₈) *Epitome grammaticæ Hebrææ...* (Basileæ: Johan. Jacobi Deckeri) p:11–16. The form has seen little change. They are usually shape and name lists, brief comments appended at best. It is often, however, displaced at the end of the book such as the classical A. B. Davidson (1874₁, 1934₂₄–1956) *An Introductory Hebrew Grammar* (1923₂₂ rev. by John Edgar McFayden, Edinburgh: T&T Clark) p:230–231 though § 10 inside (p:38-42) is entitled “The Accents.” Including it in a body is more felicitous, such as in Arthur Walker-Jones (2003) *Hebrew for Biblical Interpretation* (Atlanta: Society for Biblical Literature) where p:69–72 provides a neatly structured seemingly selective list that is surprisingly informative. This is probably a proper format if 2–3 pages are earmarked and later reading experience is relied on. Mainstream student grammars leave this topic out entirely and, more regrettably, syntax grammars ignore it, too, exemplifying from the mentioned A. B. Davidson (1924₃, 1894₁) *Hebrew Syntax* (Edinburgh: T.&T. Clark) to the widely available Bruce K. Waltke | M. O'Connor (1990) *An Introduction to Biblical Hebrew Syntax* (Winona Lake, Indiana: Eisenbrauns) to Bill T. Arnold | John H. Choi (2003) *A Guide to Biblical Hebrew Syntax* (Cambridge: University Press). Where else to fit in than syntax?

¹⁸ Helmut Richter (1999-2004) <http://www.mechon-mamre.org/c/hr/> (access 2017-05-09).

¹⁹ Mordechai Breuer (1981) מִנְחֵם הַמִּקְרָא בְּכֹחַ סְפָרִים וּבְכַפְרֵי אִמְרוֹת [Taamey hamMiqra be-21 Sfarim uveSifrey EME"t] (Jerusalem).

²⁰ Despite that he could have found he *was right*, such as p:50 ft:8, #L has *tiphcha* as supposed and BHS is wrong; or *probably right* (p:81 ft:21), e.g. 5M 12:30, where #L's *cholem* on ך may be longish whereas revia' is a clear dot.

²¹ It challenges me also to take a corpus approach as this way adequacy can be checked. Concerning substitutions they apparently were established by Wickes 1881. But cf ft:7 & 24 herein where he credited his predecessors for it.

²² Aron Dotan (2007) Masorah (in *Encyclopedia Judaica*, 2nd ed., vol. 13, Thomson Gale / Jerusalem: Keter Publishing House Ltd.) 5.3.3 The Accentuation Signs p:637-642. “Easily available” means for Richter to be found on the web, for Price to be downloadable in PDF from his personal pages, for Dotan in *EJ* to get from Hebrew interest shelves.

²³ Biblical Accents: Cantillation (in *Encyclopedia of Hebrew Language and Linguistics*, vol. 1, ed. Geoffrey Khan, Leiden: Brill). Please note more entries in *EHL* concern the topic, such as B. Elan Dresher (2013:288-296) Biblical Accents: Prosody (entirely on the positions of syntactic binary division). Dividing in more subtopics at the same time makes references under entries sorted out, which is practical, cf e.g. those on p:303–304, 603–604.

²⁴ Wickes himself credited the Law of Continuous Dichotomy (1881:32nn), quoting Spitzner, to C. Florinus (1667) *Doctrina de Accentuatione divina*, whose idea, reportedly, was developed by J. Francke (1710) *Diacritica Sacra*, and A. B. Spitzner (1786) *Institutiones ad analyticam sacram textus Hebraei ex accentibus*, of which Wickes had only Spitzner available, who he claimed had concerned only “prose accents”, cf (1881:38 ft:1). Price 2010:32nn explains the Law as resulting from length limits in accent domains. Where a disjunctive may have just a single conjunctive, which applies more in 3'b than 21'b, verses fall in two parts always whereas it does not have

Wickes with a preface by Aron Dotan (1970), they are easy to reach. Other researchers include Price 2010 as mentioned, and Yeivin 1980 (often referred to in Price 2010).²⁵ Yeivin provided what the title promised: an introduction to all the masorah where the accents are treated in a part of it, in which a lot of space is devoted also to auxiliary marks, especially *metheg* (“*ga’ya*”). Learning about the functions of that mark is vital for a student of masorah. Price 2010 in his Introduction chapter (p:4–6) lists more resources concerning the topic, which might be found helpful.²⁶ For a fuller list, see Waldman 1989.

A2 Applying Concepts and Methods

The version of the TN[”]K text in both the varieties of the Tiberian marking of Masoretic Hebrew is richly marked up with a pointing system that apparently went into great lengths to specify pronunciation. It is clear and undisputed that the pointing concerned the vowels and consonants. The proposition that also the prosody was concerned is to be demonstrated. Apart from ‘accents’ possibly describing the melody and perhaps also rhythm and other prosodic facets of Masoretic Hebrew, the text contains quite a number of ‘pausals’ i.e. forms that seem to differ in segmental configuration from context forms of the same words. The difference appears to be in vowels, stress placements and possibly emphases in text. These forms partially correlate with stronger ‘accents’ but disturbing exceptions²⁷ seem to suggest they were actually independent markers of higher level stresses. *PMH II* leaves the question of ‘pausal’ and context forms aside but, obviously, it needs to be confronted with the present theory at a later stage. A system offering such detail, and in a context of competing systems at that, it provides a unique store of information. If the proposition that the marking is prosodic confirms (or at least can be upheld as an acceptable alternative), it reaches beyond mere graphemics toward phonology which it can stimulate to revise its methods and search for an adequate theory that would pay equal attention to segments (be they phones or syllables) and higher units. This is what *PMH II* has in view. It considers the corpus of texts marked up throughout with categories of sound which apparently the reciters of the sacred text considered crucial, and takes it as an opportunity to search for methods and create tools to process combinations that, despite being very many when pronounced, reduce to a few dozens in a sound system that is autonomous (and not conforming only to the needs of morphology as lists of phonemes).

In order to make this phonological ambition clearer, an explanatory digression is due: No sooner had linguistics understood that sound means of a natural language make a system and phonology emerged, than the domain rightly concentrated on examining differences in meaning. It was entirely natural that it turned to the domain of the linguistically meaningful and produced a concept of the phoneme that is an interface between units of sound and units of meaning. Considering technical capacities of the day, it was again entirely natural that it began by examining units that could be found in manageable or easily calculable numbers. That way, the phoneme, interfacing sounds and morphs, could be handled by mental analysis and simple searches. Definitions restricting the phoneme only or almost exclusively to the segmental level are bound to stick to it. The semantics of language, however, does not use up by morphs and morphemes (whose phonological interface is the morphoneme), the meaning in language is richer though meanings of a kind in the sound system are non-referential. This abstract domain of

to be so in some 21'b instances. My prosodic explanation adjusts the intonation contour properties and needs no halving. Musical interpretations can do the same, I suppose. Concededly, some philologically-minded supporters of nested dichotomy admit at least its main drawback: weakening mechanically the strength of nested same-value accents even if unnecessary (and unrealistic). Price 2010:35 calls it “inadequate,” with ref. to Yeivin, Wickes *ibid.*

²⁵ Israel Yeivin (1980) *Introduction to the Tiberian Masorah* [מבוא למסורה הטיברית] (transl., ed. E.J. Revell, Scholars Press).

²⁶ Many items have not been available to me but obviously, not all appear equally important. I can point out Max L. Margolis (1971) *Accents in Hebrew* (in *The Jewish Encyclopedia*); Mordecai Brewer (1958) *The Biblical Accents as Punctuation* (Jerusalem: haMador haDati); Miles B. Cohen (1969) *The System of Accentuation in the Hebrew Bible* (Minneapolis: Milco Press); Gérard E. Weil | Pierre Rivière | Michel Serfaty (1978) *Concordance de la cantillation du Pentateuque et des cinq Megillot* (Paris/Nancy: Centre Nationale de la Recherche Scientifique); (1981) *Les cantilations des Premiers Prophètes, Josué, Juges, Samuel et Rois*; (1982) *Les cantilations des Livres Poétique*; (1982) *Les cantilations des Derniers Prophètes*; (1983) *La cantillation des ouvrages bibliques en araméen*; 5 vol.; n. v.

²⁷ James Price (2006) *Exegesis and Pausal Forms with Non-Pausal Accents in the Hebrew Bible: A Paper for Presentation at the Southeastern Regional Meeting of The Evangelical Theological Society, March 18, 2006* (www.jamesdprice.com/images/Pausal_Forms_ETS_paper.pdf accessed 2014-08-22).

meanings has remained aside for long decades in which phonology after having discovered phoneme concentrated on methods of composition. Whether those decades marked by mechanical procedures and formal validities gave fruits adequate to the time and effort, it is a question which researchers can estimate differently. (In my view, benefits have been small.) Currently, however, it is hard NOT to get the impression that the potential of phonological procedures and their evaluations runs slowly down, and that methods cannot reduce to mechanical assembling and evaluations of correctness just as the sound system of a language cannot be reduced to an interface to morphs and morphemes. In dealing with Masoretic Hebrew accents, grammars such as Price 2010 seem to indicate clearly the accented record resists the effort of being transformed into a set of mechanical rules, unless we are willing to interpret as errors all disagreements of rules with reality.²⁸ Perhaps, phonologies of linear rules should be left for phonologies of semantic units in multiple layers, combining means of semantic expression in prosody. Admittedly, complex relationships may arise in layers of intonation over layers of rhythm over segmental layers. But the times have brought about, even worked out, technical capacities that make possible to overcome the limits of mental analyses and searches by small units in small numbers. There is no reason to be scared of large numbers, broad units and labyrinthine relationships. Researchers can admit to themselves the sound system is richly structured and creates non-referential meanings in multiple layers. These can be processed by the technical tools available today. Phonology does not have to, nor ought to, reduce itself only to segments and putting together phonemes or distinctive features.

For phonology to be able to process the sound as a system, not just a single layer linking morphology, it needs an adequate theory and technical means. These are used in the world of commerce for decades. Also the linguistics of words, clauses and texts has created corpus linguistics with the means, adapting them for its own needs and capacities. Phonology that deals with meanings and systems of a different kind (differing syntactically, by the character of government as well as the nature of the units) is able to employ linguistic corpora in a limited way. Most queries phonology would care to run can hardly be formulated by means of these corpora. Phonology needs its own corpus architecture based on values, relationships and making possible to work also with spreads of values and conflicting resources.

The *PMH* project aspires to bring forward the two means of a complex approach to sound systems: a technique and a theory. And because it is primarily concerned with methodology—it is an attempt to replace or reinforce the method of selective excerpts with methods of processing whole texts—it proceeds from data rather than theory. It needs to process a particular array of texts (a “corpus” in the original, classical sense) and focus, in *PMH II*, on particular questions: a set of marks by the last pre-modern editors of the Hebrew Bible. But the sound system had still to be considered as a whole. Little is known about interconnections of all the parts of the system, especially the impacts of prosody, so the project has to narrow its prosody focus in steps. Also, *PMH I* had first to deal with shortcomings of current phonological concepts, both generally, and relating to the Masoretic marking which they read as immediately syntactic and worked them out by means of a Generative Phonology or the Optimality Theory. *PMH I* then treated briefly the history and purposes of the Masoretic redaction, discussed related engineering concepts and set forth evaluative criteria. Simultaneously, excerpts on segmental and (partially also) suprasegmental parts of the Masoretic sound system were collected so as to gain grounds to form hypotheses on Masoretic Hebrew phonology including possible theoretical impacts.

Having established that, the present work has devoted to prosody as data, deferring the theory. A difference between Tiberian Hebrew phonologies of my predecessors and mine is that whereas they took the Hebrew record at a face value, I consider it important to try first to interpret the sound of the graphic record. Graphemic analyses need to be detailed. Manuscripts, marking systems and available historical records need to be examined, which is not a single step research and exceeds the scope of a single dissertation as it is not an introduction to a phonology exposition, rather a first stage of a multi-stage phonological research. Still, phonology needs to be developed in parallel. Given the absence of native speakers and sound recordings, the interpretive framework of a general theory is crucial. Since the background theory is syllable-based, prior to treating excerpts, it had first to tackle a few vocalic issues that had to be brought up anew, then proceeding from syllable to foot, it could take up the topic of ‘accents’ (called melodemes in this project). As it is well known to Hebraists, the ‘accents’ are arranged in two different systems which, however, both are interpreted in these two dissertations as a single set of marks, differing mainly in how they phonotactically apply on text, rather than in their

²⁸ I am unwilling to admit so many ‘errors’ also as I expect for error rates to increase as more systems are added.

prosodic substance. Differences between these two systems are not ignored, but it seemed more useful already in *PMH I* for the initial assesment of prosodic values to describe melodemes first as a single list without differentiating if a particular melodeme appears in one, the other, or both systems and how. I had no choice here but to uphold that early decision (or throw all the *PMH I* away, for which there was no other reason).²⁹ As further research refines the meanings, more phonosyntactic differences need be considered. Following the completion of the list of melodemes (B1c) that began in *PMH I*, it has been suggested how contours can be composed out of melodemes (B2).³⁰ Granted, *PMH I* and *II* discuss each its own portion of the total melodeme set. Still, the arrangement distributed in two books appears sufficient for the goal. The purpose was (a) to show an alternative concept of melodemes, which both the *PMH I* and *II* achieve. Also, (b) *PMH II* at the close of its discussion recapitulates and refines the prosodic content of all the melodemes. Realistically, a preliminary grapheme interpretation was what could have been achieved before corpus methods and synthetic sound testing can be applied.

The theoretic background referred to occasionally in *PMH II* is treated more in the enclosed CD as the phonology has used concepts incompatible with both Generative and Optimality type theories. Due to it, some of them had to be presented. A general theory is planned to derive from a Hebraistic one at the final stage. The reverse order (the theory first, the application later) would also be possible now but I believe it is a healthy concept to present data first, then a generalization. Methodologically, a theory makes up for missing speakers by an accumulated and generalized experience, and also makes explicit the logic behind by defining concepts, explaining why and on what grounds the logic can be accepted and how to discern the irregular from the expected, so as to let a general theory emerge later. In applied phonology, such an approach reduces to no less than either referring to an established phonological theory or—as here—developing a theory in parallel. At this stage it is relatively complete unlike in *PMH I*. Suprasegment starts from syllables, into which it incorporates lower elements (phones and features) as properties, not units. Syllables and higher units can compile working concordances, which is a corpus method, and in Hebrew studies, it is a traditional tool.³¹ The plurisegmental level in this language offers rich material of foot and stress prominence alternations (B1b2), making the segmental level intertwined with prosody. With that in mind, the outcomes of graphemics and melodeme research are discussed, strong and weak points evaluated, considering possible eliminations or compensations.

Theories need adequate recording means. Linguistics overlaps with technology there. Technical portions have been put aside on the CD due to their volume and versatility. As the phonological reasoning is structuralist, no system of record used currently could be adopted; a new one had to be devised (CD1b). Data in the present project, however, need to be described in two tiers. The first is a graphics interpretation format (CD1a), which is vital for languages with no sound recordings. Data in the second tier interpret sound (CD1b). Close ties of this theory to computational tools manifested also in the fact it is not just another transcription (more precisely: a transcription syntax), but it was also designed as a non-procedural (declarative and functional) programming language. It can be utilized informally for descriptive and creative work, or formally inside a corpus and for sound simulations if implemented. It can make possible for more interpretations as well as methods and tests to compete. It is vital for the follow-up research to find feasible and affordable ways to check out if melodemes of this concept can be connected to continuous, naturally sounding melodic contours and cadences with no need to edit them across seams so much as it would entail cancelling melodic meanings of individual symbols. This can be best achieved by transforming all the TN"K text to synthetic speech. Subsequently in listening but also as early as in transforming, it should be possible to monitor if the text contains too many melodic breaks that cannot be smoothed out and keep the present theory as it is. The ability of researchers to do it mentally cannot be the only means how to find out. Generating artificial speech assumes a range of technical means the present dissertation was not able to collect, nevertheless this sort of application is expected so that competing hypotheses of sounding a preformatted text could be tested by listening at a follow-up stage. This way, applied and theoretical phonologies would turn into an experimental phonology. For this dissertation, I have made a single program converting mechanical

²⁹ It should be pointed out the *PMH II* is built out of original material. If the same point, infrequently, was to be illustrated or supported again, different data were used. Rarely, *PMH I* was quoted explicitly as any resource.

³⁰ Considering the volume of the dissertation, to add more was hardly possible, though such a portion should be the focus in an unlimited work. What I could use was a small part of my excerpts, and using all was not a purpose anyway, as I expect from the suggested methods to incrementally do the task in higher quality and the full scope.

³¹ On the contrary, a segment concordance is hard to imagine and a “feature” concordance even less so.

transliteration of the Hebrew Bible into a Tiberian reading transcription (CD2a). The output data are still a special record of the text, not a general phonological transcription (CD1a), but as they are much closer to the sound than letters and signs, such a record is capable of producing phonological data, which mechanical transliteration can do only negligibly. Evaluations of listening tests are to make part of the planned corpus, and results, whether formulated continually in sound transcription, or as partial data, are to be processed with the same tools as the original corpus. Searching through such volumes of divergent and not infrequently conflicting data as well as compare working concordances is out of reach of an individual's mental analysis, yet this is exactly a strength of computing where it can give a boost (CD2b). That is why the base text, the theoretical concept and the processing of hypotheses can connect in a research spiral where sound interpretation of a specific text is to be debugged in cycles and understanding of a sound system of a particular language is to develop. This dissertation is able only to sketch the contour of the spiral, but partial resources—an initial resolution of issues of the text, two transcriptions (CD1a, CD1b), two programs (CD2a), a sketch of the corpus (CD2b)—are ready to use.

Resources are specific (one of the transcriptions, two programs) and general (another transcription, the concept of a phonological corpus), intentionally: The leading idea of this work is that a phonology of a language is not a task to arrange a few dozens or hundreds of elements into a tidy system. Firstly, thousands or tens of thousands of elements linked by relationships is a research programme. Dozens of phones or dozens of their properties (features) used to be possible to arrange by intellectual effort, introspection and searching out illustrative examples. Thousands of syllables types,³² also an a priori unlimited number of properties (features defined differently from distinctive features), with prosody included as an integral portion of phonology that takes into account sentence sections and wider text elements considering them regular units, all that entails that phonology of a particular language can hardly spring up by an author's decision to write a book "Phonology of that language" simply because it exceeds by orders of magnitude the capacity of a short term research of an individual. Such a quantitative research demands computing tools for description and arrangement. No sooner they are available, however, than more and more texts can be added as well as tested and phonology refined on them. Exactly this manner of processing makes a good sense in Masoretic Hebrew research as it was preserved in graphically and apparently also phonologically non-homogeneous manuscripts.

Still, the cycles of incremental examining should characterize a research of this type also generally, i.e. initial hypotheses ought to be understood as research track starters. A dissertation's advantage over a book (apart from many disadvantages) is it can be an establishing outline of a research programme. Unlike a commercial publication (paying readership must not be disappointed by failing to provide a ready phonology), a dissertation may consider itself a research report, and that is valid even if conclusions provided inside expect further development. A dissertation may be a stage of a research programme explicitly whereas a book, even if authors and colleagues admit inconclusiveness of scientific knowledge, has to appear as a final product. *PMH II* aims to establish a particular phonology as a research programme and demonstrate Masoretic Hebrew qualifies to become an object of such a programme, by virtue of so many prosodic elements mutually combining on the background of syllabic and semantic structure of texts that let emerge relationships many times more complex than in a phonology of non-prosodic units. The proposed interpretation of Tiberian 'accents' in *PMH II* is later to be checked and confirmed, or otherwise, by aural and statistic testing. Provided they pass or results more adequate are gained that way, it will be possible to evaluate assets for understanding the Biblical text (more precisely, early medieval exposition of the ancient text). Especially if it were successful in identifying topic-focus articulation (theme-rheme) based on speech prosody as a few of the samples in *PMH II* already try to demonstrate, it would be significant also for modern versions and commentaries.

The two dissertations take in consideration a few fundamental oldest manuscripts (and occasionally other sources). If later stages of the project cover more manuscripts, particularly ones with alternative marking, and if also their differences are mapped (a necessary condition for manuscript variances not to devalue the results), then it might be realistic to try to follow development of dialects of Masoretic Hebrew in Middle Ages. It depends if the earlier stages of the project had been theoretically conceived and technically implemented in sufficient generality so as to make such enlargement of the scope feasible. This intended future need has also been kept in mind throughout the present research.

³² The enclosed CD lists over 4,000 Masoretic Hebrew syllables, and over 12,000 with an onset *shwa* or *chateph*. Such lists are experimental and more are expected to compete as the MsH syllable structure is gradually tuned in.

Between Accents and Melodemes

The topic of the present dissertation are Tiberian ‘accents’ interpreted as prosody of speech rather than music or syntactic marking. The method is collecting and interpreting excerpts. Their collection has started during my work on a previous dissertation with a broader scope where the present topic was not covered adequately. The excerpts that were not used there and many more collected later have been processed with occasional reference to the oldest MsH mss (#L, #A and a few others where applicable), and interpreted. The aim has been to find such phonological values that can make together a smooth, meaningful contour of speech intonation compatible with the manner the marks are used in the text of TaNaKh (TN"K). Sharp breaks, discontinuities and improbable twists and turns just as well as manners that would not make sense in the Tiberian usage of the marks would disqualify the hypothesis. If this is not the case, the prosodic hypothesis will make a topic of further research to confirm the theory of the recorded *speech* prosody whose musical properties enabled or also stimulated the *musical* development of the marks and whose meaning-related properties made possible to find *syntactical* clues in them.

To make the present observations possible and turn them into a theory, more evidence and thorough verification have to be obtained. As native speakers’ recordings are unavailable, graphical record data have to be examined more systematically and as much information has to be extracted as possible. Due to it, *PMH II* has enclosed a CD dealing with methods used and to be used. One utilized extensively in *PMH II* text, data and programs is a grapheme transcription. In it, the *PMH* research has got a flexible tool able to keep details that would be difficult to maintain in between Hebrew fonts. Hebrew scholars may find it a bit annoying to get used to a weird Latin and think of Hebrew behind. But for a phonology research, this has been the most direct route to take (please refer to *PMH I*:81–87 for discussion). Concerning the main topic, the patient reader is encouraged to get well acquainted with accent acronyms in <tags> (in Acronyms above, or B1c below) as this way accents are going to be referred to throughout. Sound transcriptions are used in pragmatic combinations. When needed, a specific sound transcription that was developed for the phonology research was also used. Due to it, its description has been included in the CD (Glossa) but referring simply to *PMH II* Acronyms should be sufficient. The other methods are corpus, data mining and speech synthesis. The former two are also covered in the CD, the latter is not. Phonology was also finally removed from print and reduced to explanations as needed so as not to overload the text with conceptual issues that may distract from the main topic. The structure of *PMH II* appears then quite simple: A–approach; the core is B–body; and C–conclusion.

In **B1**, segments, syllables and rhythm are treated briefly, accents follow. Phonologically, *syllable* as the basic segmental unit is dealt with in **B1a** with higher units mentioned, then turning to the Tiberian record, consonants and vowels as componential properties of the syllable are paid attention to. The rhythm units proceed from the syllable in **B1b1** to the *foot* in **B1b2**. The focus is intonation: The **B1c** chapter, after rehearsing what MsH accents (melodemes) have in common, treats them one by one in 25 sections, leaving out those *PMH I* processed already and taking up where it left off. How they work together and can affect meaning, is found in **B2**, Combinations. Attention was paid to double pointing (**B2c**), the two systems (**B2d**) and accents in the books of Job and Jonah were analyzed statistically (**B2e**).

The topic (covering also *PMH I*) is evaluated in **C1** while **C2** suggests methods of a research to come.

B1 From Syllable to Prosody

B1a Phonological Background

Tiberian ‘accents’ as prosody carriers depend on a few concepts of which the crucial one is the syllable. *PMH II* focuses on intonation keeping regard to rhythm and a (phonological) accent. In order to keep fundamental concepts distinguished, a phonologically employed stress is called *accent*, a graphic mark and especially its phonological content is called a *melodeme*. Phones and features are not recognized as self-standing units. They are viewed as properties of a syllable. Consequently, they can be treated from different angles, contexts and granularity. The syllable is also the basic physiological unit.¹

(i) A syllable (or, in some languages, a mora as a temporal or rhythmical aspect of the syllable) is intuitive regardless of literacy or script type, unlike a phoneme. (When a syllable is considered as a unit, simultaneously the option is considered to gauge it moraicly where justifiable.)² An intuitive mora seems to suggest the mind codes in syllables. It is everybody’s experience we remember words by their number of syllables, their general structure and, in languages with variable stress, a rhythmical pattern³ whereas, concerning phones, hardly a single one or two initial ones get recalled. Syllables in turn are searchable equally well from the beginning and reverse from the end. If moreover the search is restricted to a particular range of concepts or experiences, the search gets a boost, which seems to indicate that the primary storage is semantic and only secondarily by syllables and feet. Phonemes that link morphs with syllables probably help make syllables specified and do not represent self-standing units (they are never ‘self-standing’, anyway).⁴ A syllable in turn is a fundamental element of rhythmical segmentation in feet and also the basic carrier element of prosody. Prosody even if operating in larger scopes, finally it has no other material on which to modulate itself than syllables.

(ii) We better hear vowels than consonants. It applies to Semitic languages, too. Though a stock of consonants regularly is wider in languages and their combination capacity is richer, some consonants can be heard mainly thanks to the surrounding vowels, hence after having been integrated into a syllable, so even a phoneme is usually and regularly recognizable only in a syllable. Syllables in turn are well recognizable as they are, also in speedy and slightly blurred speech (that is, in a common condition of communication). It is the number of syllables, not phonemes, that in recognition helps us guess the length of the word either heard (in perception) or searched for in memory (for production).

¹ The theory developed in the background and not included uses a recording tool (in the CD) that unlike general phonetic transcriptions enables generalizations, details and alternatives phonology needs. It is used at times in *PMH II* (frequently in this chapter) if common transcription were awkward or fail. Please refer to Glossa in CD1b for a systematic description or to Acronyms for specific constructions used in *PMH II*. Glossa has more tools to express a syllable as a unit beside marking a nucleus or alternatively borders. One is temporal microsegmentation (neglected by abecedary transcriptions) and the option to be explicit on voiced or voiceless condition (and more voicing options) by prefixes. The option has to be declared in Glossa since if not needed, discriminating each syllable component (‘segment’) for voice would be annoying. A segment simply transcribed ..x is enough for regular use. If a syllable is to be explicitly transcribed as a unit, no need is to use syllable boundary mark-up that sometimes can be disputable or even as much as indefinite. Alternative Glossa devices designed for it can be used.

² Glossa knows a special mora unit prefix = which, combined with syllabic phase =\ and =|, corresponds to the traditional morae of Japanese phonology. See CD1b2.1.5.1 (including a reference, Kubozono 2015). See (v) below.

³ Joana Cholin (2008) Do syllables exist? Psycholinguistic evidence for the retrieval of syllabic units in speech production (in *CUNY Conference on the Syllable, 17-19 January 2008*, Cholinhandout.pdf, Cholin.pdf) points out to experiments with Dutch and English logatoms showing Dutch speakers seem to do motoric planning in syllables while English speakers may rather have a foot as their psychomotoric unit. In any case it appears brain contains syllabaries. The difference found between Dutch and English is explained by a clearer syllable boundary in Dutch.

⁴ Research results can of course be provided. Since 1960s, a plethora of studies have been published (to cite an early one for many, Roger Brown | David McNeil (1966) The “tip of the tongue” phenomenon (*Journal of Verbal Learning and Verbal Behavior*, 5:325-337, New York, also pantherfile.uwm.edu/suelima/labreport2/brownmcneill 1966.pdf, access 5. 4. 2016), but conclusions seem to depend much on assumptions, aims and methods.

(iii) Individual elements in a syllable are knit together so closely that they make one distinctive whole of which no subparts are really possible to cut out. As pointed out by Hála⁵ (in Czech): ‘Even in the maximum slow-down of speech, it never disintegrates to individual phones, only syllables that keep firmly their being.’ My assumption is that syllables in the brain are coded (/) as a single neuromotoric act. It is obvious in speech synthesis (TTS): It cannot be concatenated out of speech phones (speech versions of phonemes), only out of their unions. Ideally, utterances would be built out of syllables. That, however, would be practical only when syllables in the language are a small number. But in fact, syllable composition is generally independent on morphemic segmentation: While it coincides with word or morpheme boundaries in some languages, in other ones it crosses them, yet in other ones it can keep morpheme boundaries within words. Coding phonemes in syllables has its own rules.⁶

(iv) A syllable component is **prosody**. Always. Unlike a phoneme which can have prosodic features optionally, depending on the type of language. The phoneme is a pattern, and the phoneme prosody is also a pattern. It is only in a phoneme put at a particular position that the phoneme prosody obtains a configurational shape which is to succeed, more or less, in particular samples.⁷ It is especially the syllable which is the stress carrier, and that, in some languages, depends even on properties of the syllable rather than the word. There, the composition of the syllable is not mechanic (merely phonetic), but phonologically relevant. It is a temporal or melodic component of prosody that is phonologically valid in some systems. As a vehicle of specific prosodic properties, a syllable is a unit of phonology.⁸

(v) A **mora** is an elementary unit of length for syllables in some languages. It is a theoretical unit of measure or classification derived from a syllable, not an independent physiological unit. It is a property of a syllable which, however, considers only the nucleus and the coda. Though it determines a stress placement in some languages (by distinguishing light, heavy or possibly superheavy syllables) and it seems more intuitive somewhere than the syllable itself, it is unfit for a basic general unit of phonology.

The syllable in turn (moraic or otherwise) is the minimum unit of quantizing. A moraic syllable has more values, a compact syllable is unitary, but both can be considered the smallest sound quantum. Next units in the quantizing plan are a foot, a pausal queue and an intonational queue.

⁵ Bohuslav Hála (1962) *Uvedení do fonetiky češtiny* [Introduction to the Phonetics of Czech] (Praha: ČSAV, p:274). In claiming that, he referred to his earlier (1956) *Slabika, její podstata a vývoj* [Syllable, Its Essence and Development] (Praha: ČSAV) and a French abridgement (1961) *La syllabe, sa nature, son origine et ses transformations* (in *Orbis / Bulletin international de Documentation linguistique* 10, no.1 p:69–143).

⁶ Some researchers and experimenters even find out the syllable is an advantageous unit for automatic speech recognition and synthesis (rather than shorter technical units, diphones, or units cut differently, triphones). Ivan Kopeček (1998) *Speech Synthesis Based on the Composed Syllable Segments* (in *Text, Speech, Dialogue / Proceedings of the First Workshop on Text, Speech, Dialogue—TSD'98, Brno, Czech Republic, September 1998*, eds. Petr Sojka Václav Matoušek Karel Pala Ivan Kopeček, Brno: Masaryk University p:247–250), confirms at p:249 that “the idea of parsing the syllables into relatively independent constituents comes from the observation of the coarticulation inside syllables. Strong coarticulation appears between the vocalic nucleus and [the] preceding consonant. Also the coarticulation between the vocalic nucleus and [the] succeeding sonorant [...] is not negligible.” He explains what coarticulation can be omitted so as to reduce the number of segments to produce and store. Robert Batůšek (*op. cit.*, p:153–157) adds (in what appears to report on the same research) a syllable segment synthesis “displays in comparison with other concatenative methods, e.g. diphone-based synthesis, the following advantages [...]— [...] more coarticulation when compared to diphones—main prosodic parameters [...] are closely connected to syllables” (p:153). As to computational efficiency, approaches can be considered to combine. R. A. Varley | S. P. Whiteside (1998) *Dual-route phonetic encoding: evidence of apraxia of speech* (*The Phonetician / A Publication of the International Society of Phonetic Sciences, Fall 1998* p:28) point out testing speech disorder patients with apraxia seems to show the brain employs two routes: a direct one with syllabic units, likely to be used with high frequency words, and an indirect route, a less efficient one, assembling low frequency or novel words out of sub-syllabic units. For recognition, D. Stewart | J. Ming | F. J. Smith (1998) *Automatic syllabification with application to continuous speech recognition* (*The Phonetician / A Publication of the International Society of Phonetic Sciences, Fall 1998* p:25–26, at An International Conference Sponsored by the International Society of Phonetic Sciences (IPS-98) at Western Washington University, Bellingham, Washington, USA, June 27–30, 1998) described a concept of syllable/demi-syllable-based recognition, which they consider more efficient than phoneme/phoneme-like units-based models. High number of possible syllables, which originally used to be a technical obstacle for the concept, is easy to overcome with IT development. A challenge was a small number of training data labelled syllabically. Their syllabification method includes ‘ambisyllabicity’ and syllables that cross word boundaries. (Please see iiR for ambisyllabicity references.)

⁷ Please note the *pattern > configuration > sample* triad for the Czech *vzorec > vzor > vzorek*. No good equivalent.

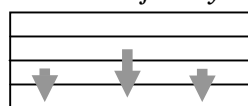
⁸ Prosodic and other shared properties of a syllable are put in syllable heading, consisting of specifiers in Glossa.

Apart from that, there is a modifying plan which provides elements to modify the quanta: phones are modifiers to syllables. Some suprasegmentals affect (modify) feet, some suprasegmentals exercise such an effect on intonational queues. The elements that do modifications cannot exist as stand-alone units as they need a carrier (the modified unit) to be perceivable. For example a difference between stressed and unstressed syllables can well be heard within a foot by means of contrast between syllables near to each other (it is hard to compare syllables distant in utterance). Other speech perceptions process well from pause to pause, including e.g. elementary intonation differences though a complete contour of intonation that makes a meaningful sense can be obtained only after a closing cadence has come and closed the unit of intonation. Units are defined by contrast. A contrast has to be found for morae, too.

(vi) Speech needs resonance which amplifies articulation, makes it distinct and also bears prosody. Resonance can go on if a resonator is excited by a tone, noise or pulse (in this order of efficiency). Virtually all consonants can integrate resonance in its spectrum of sound. While it is acoustically expedient that the tone component of the sound signal rang out also without modulation (so as for consonantal transitions to be heard as they are decisive for their identification, and of course for speech to be clearly modulated by prosody), it is not so indispensable that vowels (or generally: resonance) were sounded bare. While vowels deliver undamped resonance, sonorous consonants damp it or mix it, other types of consonants send in more non-periodical noise (such as voiceless fricatives). Resonance or resonances and noise can be variably combined. Consonants can modulate the resonance substrate all throughout resounding since the effect mostly is usable (sound is heard) though the resonator (oral cavity, head and bones) respond variably. Acoustically the least efficient but still possible is to excite the oral cavity i.e. a resonator by a pulse (a bang or a strong short noise) whose effect is comparably low in voiced and voiceless plosives. That, however, needs a carrier signal to be heard, that is a vowel. These just as sonorants can be voiced or voiceless. A noise vowel without prevailing periodic component can still preserve its energy maxims (its timbre, ‘colour’), that is, being recognizable. Only its audibility is worse as it is a whisper.⁹ A syllable nucleus can be a voiceless fricative acoustically carried by a voiceless neutral vowel (unless the fricative has a frequency characteristics of its own such as [s]). It can even be a voiceless plosive, also carried on a voiceless neutral vowel though the characteristics for identification is the attached plosive in spite that it could not be heard without the vowel or continued excitation of the resonator. Hence, I conclude that languages purportedly ‘with no syllables’ (having no chance to examine anyone of them myself) can let a syllable be covered by consonants throughout (so that where a bare nucleus might have been, e.g. (in Glossa) ..e], there is only e.g. ..f+e]). This deduction makes possible for me to go on considering a syllable the general and basic unit of phonetics and phonologies of the languages of the world (*PMH I*:45–47) and need no exceptions.

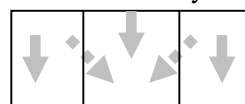
That is why I consider more advantageous to slice the syllable in layers (as if ‘horizontally’, see the picture below) rather than in phases (as if ‘vertically’). The fundamental layer is *resonance* which is constitutive and carrying. This is modified from other layers. The *consonantal* layer modifies (brings changes into) the resonance usually at its beginning and the end of the syllable, though theoretically it could do it anywhere. *Prosodic* layer(s) modulates (adjust(s) or ‘edit(s)’) the carrier layer theoretically wherever, too, though in practice it is most efficient in the middle (on the nucleus) where the resonance is modified from the consonant layer the least.¹⁰

The *layered model of the syllable* is as follows:



Classic models slice the syllable like this:

↓ modulation



The classic model invites for a tree hierarchy known from linguistics to project also into the structure of sound. This is perhaps an idle temptation. Let me offer a modulatory view of the syllable: It is made of a compact layer of the carrier medium (which is resonance in overwhelming majority of instances, though peripherally, the role can be fulfilled by non-periodic noise). This is the vocalic base. It is a layer running throughout and is modulated by consonants (typically on the margins, possibly in the middle).

⁹ Nevertheless, stage whisper uses resonance well supportive for a theatre, and whisper is faked by a noise-like timbre i.e. an effect of the non-periodical component of sound; also by gestures and/or facial expressions.

¹⁰ Please note that ‘layers’ is a theoretical abstraction. In reality, at least the acoustic one, no ‘layering’ exists. Alternatively, we could think of ‘sources of behaviour’ or ‘levels of action’; but these would be less graphic.

If they contain themselves a resonance of their own, they may affect or replace the basal resonance (or the basal noise), while the onsets and retreats may be and often are vital for recognition.

Marginal consonants in a syllable have a function more over the nucleic consonants. These modulate resonance or replace it with their own resonance or noise. Marginal consonants can also modulate the resonance (in the nucleus, too). Additionally, however, they make syllables more easily recognizable units. With no margins, the resonance would tend to fuse readily with a resonance of the next syllable. It happens at times, providing the resonance-to-resonance transitions a space from nucleus to nucleus and makes the vowels fuse. Even a new, transitional vowel may come up in the middle of a transition, as resonance is made with the whole body of the tongue, which moves relatively slowly and besides it may sometimes demand re-setting the whole oral or nasopharyngeal space. Restricting the transition only to a brief interlude of the hiatus requires attention. If a consonant or a cluster is found in place of a hiatus, the tongue re-setting is naturally made on the backdrop of the articulation, allowing for the two vowels to stand out more clearly.¹¹ This demarcating purpose does not demand for the consonants to belong fully to the preceding or following syllable as they make a backdrop for a transition which is a period, not a boundary. Perhaps due to the manner the articulation control centre works, anticipating is found easier than persevering, so CV seems more natural than VC.¹² But evaluation is made only by phonology, both the mental one, and possibly the theory. Consonant clusters sort effortlessly, VC-CV etc. Again, the final ‘reading’ that is interpreting will be provided by phonology. Consequently, a single consonant may well belong to the two syllables equally at the same time (I call it diplosyllabism), and only phonology can decide to either identify it (as ambisyllabicity), or ignore it.¹³ More to it at iiB1a1.1.

The layered syllable model includes the concept of vowels separated by consonants only apparently, whereas in reality, they link since they are the fundamental layer of the adjacent syllables. Consequently the vowel distribution also in Semitic consonantal constructions is not discontinuous, but continuous. For example, the vowels in the a–o or a–i patterns are contiguous structures regardless of the number of consonants in between. A marginal consonant may be a component of such a resonance morpheme as it enhances the clarity of some syllables but what prevails and lets the grammar be heard are vowels.

According to the nascent phonology in the background, no discontinuous morphemes interleave in Semitic languages, rather it is contiguous morphemes what is modulated by root consonants. The manner of joining, overlay, is what creates the impression two discontinuous morphemes intersperse each other. Such a view, however, is not necessary or at least not the only possible view, and perhaps it would not have to have emerged lest we perceived the syllable affected by abecedary scripts. (It is only appropriate to realize it before one starts to rely heavily on Latin transliteration of Hebrew script.)

Interpreting the prosody of Masoretic Hebrew is influenced by the way segments are interpreted.

¹¹ Such demarcating can be likened to changing props between acts. It can be done in light (resonance) or in dark (noise) but reserving a set time to change props is theatrically beneficial. Theoretically (rarely in practice) props can be changed stepwise. But blurring the boundary denies the dramatic arc of the act which is as if a small play.

¹² MsH makes onsets resonant by epenthetic vowels, CəCVC (or əCCVC in Babylonian pointing). Epenthetics get diverse colours from neighbours, etymology or due to consonants. Cataloguing MsH syllables is needed; see CD.

¹³ Glossa has means to mark up the individual elements that were mentioned (including advances and retreats, diplosyllabism and ambisyllabicity) as well as detailed analyses of particular layers’ behaviour and synchronizing them. Any transcription can certainly break the record down in layers. But Glossa’s obligatory prefix system enables different layers stay separate in a single line or an electronic file (that is a one-dimensional sequence) so an overlay stays an overlay even if imbedded in a row. Though it is not very graphical and, given our reading education, possibly not intuitive, too, it is a crucial option to express aptly elements if they are phonologically valid. At least it is vital to capture the essence of syllable should it be prevented from disintegrating to independent segments. Regular records do not need it as transcription characters on transcriber positions (Glossa can fill the positions with arbitrary characters) usually themselves inform well on resonance and voice, either by convention (IPA symbols or national transcriptions), or by definition (formally in the record, or informally in accompanied text). It can hardly be expected ..[a] is something else than [a], and whether ..[b] is voiced or another contrast against ..[p] will easily follow from the usage in the vernacular. Authors can consider best themselves if misunderstanding threatens. If the meaning of transcribers is clear, no need is to split the record in resonating and modulating layers. As the syllable is determined by its nucleus rather than margins, syllables need no formal demarcation. The interpretation of transcribers can sometimes be made more precise by introducing a phase, so a detensional ..[b/] stands probably in an onset while a ..[b\] is met in a coda. As one cannot rely on it always, Glossa provides an option to insert precise confines, also if they run inside a segment (which is more regular than rare, but being so specific is rarely needed).

(a) The present model of phonology considers the syllable a basic unit. (That is why no need is felt to segment elementary transcription into syllables explicitly. Even if it concatenates phones, they are syllables as the syllable and not the phones is the lowest complete unit.) The syllable is the lowest unit that shows a systematic syntagmatic structure both segmental and suprasegmental—in other words: it contains systemic units (phonemes or phonemic clusters), prosody and structure. Analogues of the composition repeats also in higher system units, rhythmical and intonational ones. They contain both prosody and structure. In it, the foot is composed of syllables, the accentual queue of feet, the pausal queue out of accentual queues and the intonational queue out of pausal ones; always into higher units.

(b) Part of the structure, beside lower units, are also processes (applying patterns and auxiliary operations) in the structure. The task is to select acceptable combinations of lower units, hence clusters in a syllable (and derive what is unacceptable) as clusters in syllables appear to be units. Auxiliary operations come into account if their dynamism simplifies the overall picture.¹⁴ In case a static image appears better comprehensible, only applying configurations is reasonable to prefer in processes.

(c) Prosody consists of rhythm, rate and intonation. Its relation to syllable is as follows:

(c1) The syllable contains elements that make possible to compose syllables in *rhythmical* groups i.e. feet and accentual queues (syllable groups with a contrastive stress). These elements can be marked explicitly in Glossa (including properties that belong to the units and not any of their components).

(c2) The syllable contains elements that make possible to compose syllables in *intonational* groups i.e. pausal and intonational queues (syllable groups unified by intonation and accent; apart from that also rate and amplitude share in making an intonation group coherent; these belong to characteristics outside of the structure though in fact the rate could perhaps be considered part of time segmentation, jointly with pauses which is a characteristic of pausal units).

B1a1 Beyond a Syllable

The cohesion of onset, nucleus and coda is language-dependent. The nascent phonology considers the three portions generally coordinate and uses the ternary division in the syllable unless/until a particular language manifests its own preferences and a binary division.¹⁵ Some coordinate nuclei and codas with onsets and prefer open syllables. Other ones coordinate onsets and nuclei with codas and prefer closed syllables. Consequences of these different hierarchies are more an inclination than exceptionless types. Essentially, in my theory, there are two different layers: fundamental and modulatory, not any phases, two or three. So the ternary division is practical to point into the syllable, not to reveal its essence.

A drawback of an imposed hierarchy, binary or (indeed) ternary, is that it mechanistically enforces to project confines where there are possibly none in reality. It is usually the climaxes, nuclei, that are of a real prominence in a syllable. Marginal consonants bind to one or another in line with various criteria (phonetic ones are esp. the articulation basis and the degree of assimilation; phonological criteria are possible activated models), bind stronger or weaker, and one of the marginal consonants can even bind to the both sides, ..\C/. Vocalic (generally: resonance) nuclei change fluently (corresponding to fluently changing the articulation basis) so it is often impossible to determine clearly which resonance (that is, a formant value distribution) still belongs to the preceding syllable and which to the following one (*PMH I*:48). (This supposedly applies also in those rarest instances of the alleged ‘syllable-less’ languages.)¹⁶

¹⁴ The processes as attributes are reflected in Glossa being a programming language beside being a transcription.

¹⁵ Glossa generally tries not to prefer (and does not need to) any segmentation but rather to enable different ones.

¹⁶ Those who believe syllable is dispensable usually think of sonority concerning ‘syllable-less languages’. While a simple theory of sonority can be rejected simply, there is an interesting development. John Goldsmith | Gary Larson (1990) *Local modeling and syllabification* (Chicago: Chicago Linguistics Society p:129–142), John Goldsmith | Gary Larson (1993) *Using networks in a harmonic phonology* (v:2 p:94–125), Gary Larson (1993) *Dynamic computational models and the representation of phonological information* (PhD thesis, The University of Chicago), Bernard Laks (1995) A connectionist account of French syllabification (*Lingua* '95 p:56–75), Atanas Tchobanov (2002) *Représentations et apprentissage des primitives phonologiques : approche neuromimétique* (PhD thesis, Univ. de Paris X)—suggest the following numerical 9-degree model: $\{sonority(i) \text{ in time } t_{+1}\} = \{inherent\ sonority(i)\} + \{position(i) \text{ if margin}\} + \{right\ segm(t+1) \text{ weighted product}\} + \{left\ segm(i-1) \text{ weighted product}\}$ where weighted products are multiplications with the degree of neighbour affecting neighbour i.e. α or β) and t is a number of computations, i.e. $A(i)(t+1) = inherent(i) + position(i) + \alpha \times A(i+1)(t) + \beta \times A(i+1)(t)$, and by adding element’s sonority+position’s sonority+already known right neighbour’s factor (usually negative)+already known

This way, the basic resonance act as the control principle, the nucleus as the controlling element and the onset and the coda as controlled elements. The controlling element is obligatory, controlled ones are facultative. As the nature of the control is not their direct contrast, the facultative elements can be missing both simultaneously; nucleus is capable to create syllabicity also when alone.

B1a1.1 Diplosyllabism

The phonetic fact that vocalic articulation base changes continuously implies that sort of imaginary division point can sit (with not much exaggeration) almost anywhere in the time domain of the sound signal, and independently on consonant confines, often likewise imaginary. This way, it is quite normal that vocalic base changes somewhere amid a consonant; in fact, it is natural, given that a consonantal articulation is a short and swift move whose making offers long vocalic transfers a natural space to turn direction. Provided the essence of gemination is adding detension, -b/, to an intension phase, ..\b (so it simultaneously closes the preceding syllable and opens the following one), then prolonging its duration\bb/ is only a concomitant, not compulsory manifestation of gemination. The two phases, intension and detension, may be present also with a phonologically short consonant ..\b/ with no substantial phonetic lengthening. Such a consonant still closes and opens syllables as if it were geminated. Its articulatory substance does not change, the duration is unsubstantial: ..\b/, ...\b/,\b/. It can be even assumed that when the consonant articulation makes it impossible to distinguish intension from detension and its vocalic base changes during its articulation, the consonant can be diplosyllabic, anyway. Let us take a simple example from Czech (the word “asi” is so elemental that an English reader may come up with an equivalent; but I can make safer claims concerning Czech): Even if ..s is nos, “asi” can be said as ..a| ..\s+a-s+i/ ..i, or perhaps better arranged, ..a| ..[\s+a -s+i/] ..i (the ..\s/ phone consists of two portions, ‘phthongs’; the first one, -s, is still based on -a, which writes -[s+a]; the other phthong -s is already based on -i, so -[s+i], hence even within a short ..s one can discern ..\s and ..s/ despite that its articulation seems more tensional, ..s|, to wit, based on a change in the vocalic base from -s+a towards -s+i, though the change will not be very conspicuous (*PMH I*:299–300).¹⁷

It should be stressed that diplosyllabism is primarily a phonetic phenomenon which phonology may employ, or leave unnoticed. The present phonology uses it to demarcate syllables independently of any phonemes (as the syllable is defined by its nucleus and resonance¹⁸). Diplosyllabism manifests natural independence of segmentation into syllables, which is physiological and probably neurophysiological,¹⁹ on segmentation into phonemes, which is systemic and theoretical. Diplosyllabism is by nature always present, expectedly so if the syllable as the lowest whole sequential unit is really independent. On the other hand, *ambisyllabicity* seems to be rather controversial phonological construct (though it might seem it is being rehabilitated nowadays) which is closely linked to an approach to phonology of English from its inception.²⁰ If ambisyllabicity is a manifestation of diplosyllabism (as it was probably meant

left neighbour’s factor (usually negative), competition between elements is supported. Calculating sonority needs commonly to go several times through, ($t, t+1, \dots$). The model is compatible with my theory and is an example of ‘programming’ phonology of text in stand-alone operations in a similar way as Glossa provides for them.

¹⁷ Examples abound in textbooks. I find interesting what Hála 1962 wrote, p:287: “Combining syllables in higher units is often so close that a phone where one syllable ends and one where the other starts is very hard to find.” (Examples follow, *op. cit.*) He obviously had no ambisyllabicity in mind when he admitted such condition was real.

¹⁸ Marie Héline Côté (2008) Syllabification, variation and perception (in *CUNY Conference on the Syllable*, 17–19 January 2008, Cotehandout.pdf, Cote.pdf) points out phonetic borders of syllables fail to comply with constructs of phonology as syllable border consonant clusters are perceived variably, and recommends to notice a character of the nucleus vowel than constructions linking the phone to the syllable before or after. Examples from Québécois.

¹⁹ The two claims apparently are supported in research, **both** that a neuromotoric coding unit is the syllable: as early as by V. A. Fromkin (1968) Speculations on performance models (*Journal of Linguistics Association of Great Britain*, London #4:47–68); **and** that the unit is the phoneme: e.g. A. M. Liberman | F. S. Cooper | K. S. Harris | P. F. MacNeilage | M. Studdert-Kennedy (1964) Some observations on a model of speech perception (ed. W. Wathen-Dunn, in *Models for the Perception of Speech and Visual Form* Cambridge, Mass.: MIT Press) etc. It can be expected similar articulations code similarly. Still, indications that a position in a syllable makes a difference, more usual coarticulations are anticipatory, not perseverative, and slips of the tongue reflect syllable structures, these testify, more persuasively in my view, for the syllabic level as the basis on which phonemes project.

²⁰ George L. Trager | Bernard Bloch (1941) The Syllabic Phonemes of English (*Language* '17#3:223–246). For a bibliography to the issue (fairly richer than is usually met when the issue is discussed) see iiR, Ambisyllabicity. (Mainly phonology interest has been followed in compiling the list, so it cannot be exhaustive.)

so) or not is a question to deal with by phonologists of particular languages. Some deny it, some defend it and furnish reasons (testifying to the closeness of seemingly open syllables by a quality of the vowel or a place of stress). Nevertheless, phonological reasons should be disengaged from phonetics. That is why I call the natural property a diplosyllabism, not ambisyllabicity (which I reserve for constructs). It is vital to be aware of it as the preceding syllable may be phonologically shaped as closed (e.g. by having a short vowel though it should be long in an apparently open syllable; or—as in English—the vowel comes from a closed syllable set while one of the other set might have been expected). A phonologist needs to invent no convoluted explanations, being aware of the phonetic nature of the phenomenon: a portion of the onset is used to close the preceding syllable, which is an operation not only phonetic but also phonological.

The generally phonological consequence of diplosyllabism is that the first element in an onset or the last one in a coda can be controlled from two sides. Then the diplosyllabism is phonological and *de facto* identical with ambisyllabicity (provided we can abstract from associated theories). In other instances, a diplosyllabism only causes that ‘control’ in the syllable structure is less similar to the ‘control’ in higher suprasegmental unit structures as the phonemic chain units do not align on syllable boundaries. Then a diplosyllabism only overlaps in to phonology. The diplosyllabism is a question ‘how much’ (even if denied), while the ambisyllabicity is a question if so, or not. A phone can be more or less diplosyllabic; whereas ambisyllabicity of phonemes either is recognized, or not; a phoneme either straddles across a syllable boundary, or sits safely on just one side—regardless of the real condition in the sound signal. Most importantly, however: While ambisyllabicity may be felt (by some scholars) as a makeshift or a stopgap to be overcome with a more inventive theory, diplosyllabism simply describes a segment with no regard to syllable boundaries. These are no real milestones at all. A syllable boundary is a transition time, so a bordering segment can extend more to one or the other side or be almost all within the transition, it can affect articulation more in one or the other syllable, or need not affect articulation in either, it can even have resonance of its own. It explains resyllabification XYZ to XY ZA if a border in Z shifts from away from Y toward closer to Y (or else complicated rules would be needed), cf iC3.2.3:47–48.

Moreover, it seems that the presence of two adjacent consonants at the end and the beginning of the syllable is felt by language as excessive for syllable recognition, though it may welcome it to diversify. The consonant opening the syllable may be felt the more essential one (as the articulatory control is probably more efficient anticipator than perseverator), which may explain the well-known greater tolerance to neutralizations in coda, known from languages of the world. John Goldsmith²¹ furnishes an example of another kind: Geminations such as Italian *detto* introduce in the language such syllables that are otherwise unacceptable, as *det-* (which happens, as he says, “in many languages”). The cause is indeed the coda, but in my view, since the geminate\t/ could physically stand both in the coda and in the onset as the transition from ..e to ..o goes on throughout the time oft (silent most of the time). Due to historical reasons (as it is orig. Lat. *dictum* or *dictus*, hence *-kt-*) and possibly also due to the clipping of the preceding ..e (if it is ..e....t.--o, which I don’t know), the geminate splits in two syllables {~.e....\t}{t/..o~} and the phonological theory has a problem. Another example of a similar cause by Goldsmith follows: Especially in Lat.Am. Spanish {~..s} tends to cease to be apical in coda and the non-specific noise that remains comes out as a voiceless [h]. Though he does not mention explicitly, it can be concluded such a coda occurs if the next onset is filled. Then it carries the main load of identity and {~..s} only occupies a position, as seen in his *esta*^{IPA}[ehta]_{IPA} example. Still, an occupied position in the explicit syllable closure makes sense as languages often distinguish opened syllables (with an unoccupied coda) and closed one (the coda is occupied). They do it e.g. by having two different sets of vowels for the two types of syllables (as in Eng. and Fr.). A coda may protect a syllable from expanding a vowel if emphatically articulated into the next syllable. That is why AmEng ..t tends or has to change (into ..t[’r] i.e. flap) if a stressed syllable is followed by a completely unstressed one (while unstressed, the change is optional and elsewhere unacceptable). Similarly it adds (meant is phonological ‘reading’, not a physical course) to the next syllable if the following word starts with no onset regardless a stress. Characteristic is that Goldsmith²² infers two runs through syllabification, verbal and phrasal runs. A

²¹ John Goldsmith (2011) *The Syllable* (in *The Handbook of Phonological Theory*, eds. John Goldsmith, Jason Riggie, Alan C. L. Yu, publ. Wiley-Blackwell, p:164–196 esp. p:190).

²² I take up his mention, *op. cit.*, p:192. The first one who had researched it and unequivocally endorsed Trager | Bloch 1941, was Norman Eliason 1942 (see iiR) when he observes on p:146: “The division here is not before the medial consonant and not after it—in short, that the consonant is ambisyllabic, and that the division occurs, if at

phonology that does not think in procedures may consider it a dynamic property of a segment (the present phonology assumes there a miniprogram triggered at segment activation responding to a specific context) and consider no all-over processes. Nevertheless, why this resyllabification or change of nature affects only .t and not another voiceless plosive, either of the two theories fails to explain.

(In what follows, Glossa devices { }, \, / and + had to be inserted in the graphemic transcription.)

Diplosyllabism and the syllable theory can be helpful to understand how the MsH syllables were put down. Vowel marks added to the inherited script can be interpreted as recording resonance rather than nucleic slots. A {syllable} does not have always to have only a single vowel mark as the quality of the underlying resonance may change during the time a syllable is articulated, especially so when the consonant modifiers alter it to enhance their own identification. Let □ be a consonant in the script, ○ and Δ vowel marks, ∘ a shwa sign, ○∘ and Δ∘ combine marks for alternatives. A brace { } is a Glossa syllable frame valid erect as well as supine. The direction is right-to-left to adjust the chart to the script.

<p> </p>	<p> </p>	<p> </p>
<p> ← Shwa tends to belong to the onset of the following syllable. But if the shwa wanes (e.g. {MaL}{KheE}, a former onset can turn into a coda of the preceding syllable. </p> <p> MaL.KhuUTh— Due to diplosyllabism the consonant can be an onset and a coda, anyway, ~a\L/:Kh~. </p>	<p> ← If the shwa alternative shares the quality of the next vowel, onset is naturally tight. </p>	<p> ← If the shwa alternative shares the preceding vowel quality, it can turn into a coda. </p> <p> (2Chron. 31:4) → {Jae XaeZ QuU} — Apart from this 'textbook' form, there were also documented alternatives of the same form, syllabified differently in writing, such as (Is 28:22) → {Jae XaeZ QuU} and (2Sam. 10:11) → {Jae XaeZ QuU}. It is easy to assume a scribal error. But can it make sense, anyway? </p>
		<p> Such three syllables in writing can resyllabify for speech differently: i.e. basically {jaex}{zqu} or {jaexz}{qu}. The same form is {jaex}{zqu} (fairly regular) as well as completely irregular and hard to interpret {JaeX:e}{Z:QuU} — this should not happen (not ~x:ez:~ nor ~x:ez~) </p>

It is important to realize letters of the Hebrew script are only □□□ in the line, not ○, Δ and ∘ below and above the line.

These are auxiliary marks added much later by scholars for a specific purpose. Consequently, the ○∘Δ marks are not units (of phonology, possibly neither of phonetics) and are not constrained to mark up beginnings and ends of sound phenomena. They might well have noted down the manner of progress rather than a segment (such as □ letters of this and any alphabet do). This way, the vocalic marks only supplied what resonance should be heard each moment within a known framework of □□□ letters, such as a form of the XZQ verb identified unambiguously as JXZQU. Some occasions needed more resonance than others so the record might allow for some variability within {JX}Z{QU}. Or was it style that followed from a particular meaning in the text, or were it dialects responsible for a variability in some words and not in others? We cannot tell with certainty (so far). But we can be fairly certain it was the □□□ letter framework that defined the syllables, not the vocalic marks. Not even any change in vocalic quality, as the tie-up with onset or coda cannot be decided in forms such as WaX:aZaQ (Hagg. 2:4) and W:HaX:aZaaQAa (Is 27:1). Still, syllables come out with little dispute most of the time thanks to WXZQ and WHXZQA framework of modifier units (letters) though resonance hardly changed in the latter example and not at all in the former one. (Please note some letters do not mark up boundaries

all, within the consonant itself.” It seems that a similar idea was defended by Kuryłowicz 1948 and Belgeri 1952. Kahn 1976 followed. For all those references, see iiR bibliography in a separate section, Ambisyllabicity.

but development, e.g. ~A=H.) Given that most consonants can be diplosyllabic as well as haplosyllabic, {JaeXZ}, {JaeXaeZ} and {JaeX:eZ} can record the same syllable since a ~Z} event does not preclude a {Z~ continuation and no ~ZZ~ is required. If {JaeXaeZ}, {JaeX:eZ}, {JaeX:Z} are explicit alternatives of which may simply be {JaeXZ}, the manners of record might have not been such a puzzling lot, after all. It is well known codas are less worked out than onsets, so ~XZ} but {Z:Q~ make sense. A haplosyllabic ~X~ can be made over ~ae~ resonance in an onset as well as coda, hence ~aeXaeZ} can well mean ~aeXZ}. This way, MsH syllables make reading more flexible and morphology easier to comprehend. It should be kept in mind a speech rate and emphasis (and singing) can heavily affect the phenomenon.

B1a1.2 Higher Units

Specific of suprasegmental units is that beside frequency, amplitude and duration (subsyllabic element components), the suprasegment is affected by three more components: sense, rhythm and breath.²³

Generally, four levels of units can be distinguished, though it may not be functional to apply them all in every language. However, these four levels can affect each other so closely that excluding one or two of the levels may in fact make the remaining levels assume the functions of the ones that found no use in phonology (rather than having them dropped out of the system altogether). For them being the units of the same system implies the first one is itself a sound form of the second one which provides the first one with content i.e. function; and the third one is in a similar relationship with the fourth one.²⁴

The four levels are as follows:	A—rhythm units	(1)	foot
		(2)	accentual queue
	B—intonation units	(3)	pausal queue
		(4)	intonational queue

While the four levels need not be all of the same significance in all languages, at least one rhythm unit and one intonation unit will very probably be relevant (as there is form and function relationship between feet and an accentual queue as well as pausal queues and an intonational queue). The units represented in the language have elements controlling other elements through applying principles of control manifested in adaptations, adjustments and alterations on the plane of sound.²⁵

Besides, the units affect the output sound with their confines: Some phonological operations (be it processes or phenomena) run inside their own unit and all lower units but their influence ends on the border of their own unit and do not affect anything across the border. Still, frontiers of the force of phonological phenomena is advisable²⁶ to consider as stand-alone elements, not necessarily related to phonological units (until proved otherwise). There can be more reasons why a phenomenon stops and fails to cross a barrier (e.g. an element can introduce a barrier inside units). More research is needed.²⁷

Tiberian Hebrew melodemes are so far considered on the levels (3) and (4) of the system. It is yet to be found out in what manner are rhythm properties (and the relevant units) projected into the picture.

B1b Segments and Sequences

In order to deal adequately with stress and intonation as the main focus of the present MsH research, vowels naturally attract the most attention among segments. Both quality and quantity needed to be established at least provisionally even prior any corpus counting could begin. The excerpts collected in iE1:108-161 and evaluated in iI1-6.2:291-298 & iI4:300-301 can be assumed with little revision here. The

²³ Glossa has basic tools to capture meaning, sense, intention, function; and can create more as needed. Breathing can be processed in more types of pauses. Rhythm tools belong to Glossa's basic equipment. Acting for each other is a special category of features (inductional in productional ones, CD1b2.2.7).

²⁴ The content levels in data structures of programming Glossa are made of lexicons (hash files) of properties referring to arrays of positions with lexicons of their properties; whereas formal levels are made of position arrays with lexicons of properties. See CD1b2.2.2.1 (iii,v,vii,viii) for the data types, please note also the last paragraph in (ix).

²⁵ Data structures of programming Glossa apply control through functions contained in data.

²⁶ A tentative suggestion. The theory needs testing to be trimmed down, also to get rid of unnecessary options.

²⁷ Glossa makes possible to derive border marks from the marking of units and use it independently, e.g. not to mark units, only borders as needed. Unit descriptions of the <_ ... _> type cover frontiers of force, too.

follow-up research could concentrate on the ^A~^O area of the vocalic space and the issues of shwa and *xatheph*s as the ones potentially most prone to misinterpretation while leaving aside higher vowels.

The area of open vowels appears to be the one that most strikingly responds to the needs of reduction and, consequently, rearrangement in the number and structure of syllables, hence affecting prosody. It shows also a minimum support in the consonantal texts so we have to rely on the marking the most.

It should be reminded that any relationship between consonantal text and MsH vowel points has already in *PMHI* been dismissed as accidental both considering the history of text (iD1) and instances such as Jb 2:9 WaaMu"Th<sq> where one might expect WaaMuU^Th (no reduction can be considered under such a strong accent). Obviously, u~uU was either no issue, or the selection was on different criteria. Cases such as PUURAA"<7f> or Pu%RAA"<7f> in Is 10:33 suggest <u> (*qubbuc*) marked up "long" as well as "short" ^Us (mss vary with PuURAA but the variant P%R~ appears to be etymologically more correct). If <UU>, <u> and <uU> can alternate, length seems not to have been written and perhaps did not even exist in most vowels. For more instances like these, please see iE1.

Concerning <aa>, however, much remains to be checked and discussed. *PMHI* has yet failed to reach a firm conclusion concerning the <aa> and <ae> difference. The 2M 30:15's HaShShaa"QaeL<at> stands in a striking contrast to all the ShaeQaeL forms nearby. Obviously, <aa> and <ae> did not feel like two phonologically distinct vowels at least in some contexts such as this one. Also Is 8:12 suggests by Qae"ShaeTh<zq> ~ Qaa"ShaeTh<at> there is little difference. One reason might be <aa> was only a prolonged version of <ae> under stress. Another but related issue is the <aa> vs <a> relationship. Is 10:19 shows MiSPaa"R<mn> prolonged from *MiSPa^R by the effect of <at> on a synsemantical Ji,H:JuU"<at>. It is of little dispute that <aa> was perhaps longer than <a> beside being of a different quality. What seems interesting here is it must have been the whole phrase MiSPaaR JiH:JuU rather than just a single word that prolonged in the cadence: It shows a prosodic phenomenon, so prolonging appears a safe guess (despite <mn>). Excerpts of both the former and the latter kind can be found in iE1. As <aa> bordered with an open to open-mid back vowel (indeed, it used the same symbol, <@>) the issue gets compounded by ^O-colour vowels which were at least two. Double instances such as MooR (absolute) and M@R (construct, both meaning 'myrrh'²⁸) in 2M 30:23 appear to confirm <@> indeed pronounced as a kind of ^O, not ^A, so transcribing <o> seems as much justified as <aa>: One should not get carried away into believing traditional transcriptions are wrong. Involvement of the ^O timbres brings with it again a question on length, this time unrelated to orthography as above.

Closely related to <a> is the issue of the *furtive patach*.²⁹ In final positions, such as RuaX, the <a> deemed anaptyctic (inserted) might rather be paragogic (put at the end). Either is a kind of epenthesis (insertion in a broad sense) but what is proposed here is to consider it an *alternative* for X which some speakers were probably unable to pronounce safely and clearly (it probably concerned &, too). So, to prevent RuX from sounding Ru, an acceptable alternative for RuX was allowed: Rua. In other positions than after a longior, high vowel, pharyngeals and laryngeals could fade and % dropped everywhere. In the other instances, the pharyngeal/laryngeal coda (except %) had to be substituted. This was why the *furtive patach* was provided for.³⁰ Or, <a> might be a *strengthening* of the consonant, not a replacement.

A similar reason was probably behind *chatephs*, explained often as kinds of a vocal shwa coloured by preceding 'gutturals' to an ^A (rarer ^O, ^Æ) vocalic shade. For unacceptability of a guttural category, see iE2.6, for low acceptability of multiple reduced vowels, especially as a third length in a language, see iE1.6.2; the arguments are linguistic, phonetic and diplomatic, and worth reading in full. To repeat, 'gutturals' seems a rather heterogeneous class³¹ (*ibid.* p:175). Some of the members might affect vowels toward ^A, some to other timbres, some in turn may not. No definition of 'gutturals', however, include 'emphatics' which should have been included, had any timbre-ward explanation be tenable.

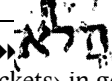
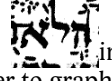
²⁸ The absolute form of the noun has two graphic shapes in TN^K, 6 times MooR, 4 times MoOR, so the presence of waw (~oO~) further confirms a back timbre. Expressions for myrrh in related languages such as Ugar. MR and Akk. *murru* suggest the root is M-R (more properly orig. M-R-R); hence, MWR is a vocalic writing form.

²⁹ Jiří Hedánek (2012) Gutturals in Phonetic Terms (submitted to *Chatreššar* 2016) deals with it in more detail. Specifically, I tried to explain why I consider it improbable *furtive patachs* were forced by 'gutturals'. In *PMHI*, I have treated it only marginally, mainly at iE1.6.2:148+fn145, iE2.6.2:178 where I hinted at alternative explanations, mentioning it again at iE1.6.2 (1):151, iE1.5.1(i):125, .2.0(1):113, .1.3.1(1):116, iE2.3:168, also iC2.1:15 and iI1:291.

³⁰ Think of the acoustic conditions the Scripture was to be delivered in. For more to it, please see iD1.2:60–63.

³¹ Which is not a drawback by itself even in phonetics. Rhotics, for one, is also quite a motley, and still recognized with no need to challenge. Rhotics, however, have no ambition beyond being practical. Gutturals try to explain by virtue of being a class, which they are not, really, so the argument is fictitious, not well grounded in real features.

Concerning the chatephs, their two symbols are written quite wide apart and misaligned so often in the oldest mss (#A, #L and #C have been examined frequently) that it appears a rule rather than an exception. Furthermore, other symbols got in between now and then,³² reflected in print at times. *PMH I* mentions also *xaa7eeph xoolam* in 2Kings 21:26 (see ftnt¹³⁶:146) WaJiQBoo":R<mr> (very clear in #L exactly as in BHS, Mp says *bis*; #A, #C have only <oo>). This is so unusual that it is considered a slip of pen (supported by the #L\#A#C difference). It is even hard to integrate it in the present hypothesis of alternative vowels (see *PMH I* and below) to suggest wajjiqb:~r and wajjiqb:~r for alternatives as the stressed :^ appears as improbable as a penultimate +wa^jjiqb:r with a shwa in unstressed closed ~b:r. Anyway, the alternative vowel hypothesis makes at least possible to transcribe this phenomenon consistently. A *xaa7eeph xiiraeq*, on the other hand, cannot be dismissed so easily. The <:i> and <i>³³ combined into <i:i> appears in #A and #L at three locations (where the other ms shows a single <:i>) as follows: 1Kings 17:11 has LQXJ_N% where #A offers » Li,Q:iX°iL_NAA"<mr> with a very clear <i:i> (while #L has Li,Q:XiL_NAA"<mr>). Due to a Q's descender, <i> is close to <:i>. Li<:i> is equipped with a *meteg* (a signal that <i:i> is vocalic). NAA(=Naa(%) in the graphics)<mr> is as in #L. Additionally a *circellus* above X (here transliterated as °, not 0) relates to Mp {G=3}, which agrees. H\$XJTW HT&JBW of Psalm 14:1 in #L it reads Hi,Sh:XiL"ThuU<rv> Hi,Th:&iL"BhuU<mr> while #A rendered it as » Hi,Sh{i:~}XiL"ThuU Hi,Th{i:~}°&iL"Bh|uU<mr>. It is especially the <i:i> in the first word that looks intended. Psalm 53:2 shows H\$XJTW WHT&JBW in #L as » Hi,Sh{i:~}XiL"ThuU<rvMg> W:Hi,Th{i:~}°&iL"Bh|uU<mr>. It should be noted all occurrences in the two mss are introduced by a *meteg* (possibly as much as five on three locations) that is to conserve the reading as vocalic (making the selection between a vocalic shwa and a *xiireq*) and the first spot quoted was equipped with Mp telling "3 (places)". Alternative vowels are no strange concept in TN"K pointing, are known to be in the Decalogue (such as 2M 20:4) and occasional variants (such as 2Chr. 13:14 in k# which writes MXCRIM and reads in q# MaXC:iRiIM in line with the -a:-i-i-i- vowels for maxc:irim). If *xatephs* were just another instance of applying the same principle, it would only be consistent. Some occurrences of 'gutturals' do not trigger *xatephs*. Even when mss differ (such as Job 38:12 #L H:~ in H:,MiJJaaMaEKhaa<dx> while other mss have H:a~), a sure sign *xatephs* were intended and not simply automatic is provided by what follows, e.g. Job 9:5, HaM!a&TiI^Q and not +HaM!a&:aThiI^Q just as 32:15 Hae&TiI"QuU<7r> is followed by ~T, not +~Th, just as 34:25 Ma&Baa,DheEHae"M<at> with no <a> following & and confirmed by ~B rather than +~Bh, again v. 31 ~XB~ and v. 33 ~&T~. If it were mistakes, the sequence would not be so consistent.³⁸ Another proof *xatephs* are alternatives, not reduced vowels, is that the Divine Name, read as %:adhoonaa, is pointed -:oo-aa-, not -:a-oo-aa- as it should have been if <a> were a single vowel unit. The pointing -:oo-aa- selects one of the alternatives, <:i>, while leaving the other one, <a>, unpointed.³⁹ A similar case is made by q# %:eLooHiM -:oo-i-.⁴⁰ The argument that % H X & demanded *xatephs* unlike other consonants that required a simple shwa cannot hold as *xatephs* are not rare under other consonants, too. See iE1.6.2 for a fuller treatment. To

³² Such as Job 22:12 »  and also 31:15 »  in H:,aLOO_ where <:i> splits H:a- in two. Cf also BHL p:xv.
³³ The <pointed brackets> in general usage refer to graphics. In Glossa, < > frame the <foot> (CD1b2.1.5) whereas transliteration is bracketed by [{ }], see CD1b2.1.4.4. Too much text in *PMH* research, however, used < > or <> for graphics and replacing < > or <> for [{ }] would disarrange most of the present book. If general usage is followed in this rather than specific and novel Glossa marking, it would be a deviation that hopefully is easy to tolerate.
³⁴ <:i> and <i> being far between look as a clear alternative of two options, not a single combined character.
³⁵ The point is unclear and slightly prolonged as if the scribe started <mr> a character earlier by mistake. But clear <mr>s are much longer and almost perpendicular. It appears as two points rather than a single one.
³⁶ An unclear point (its left, right and upper edge stand out): it seems to be a *xiiraeq* as in the following word.
³⁷ A clear point, an unequivocal *xiiraeq*, distant from the shwa as customary for *xaa7eeph*s.
³⁸ Still, the neighbourhood may not be overestimated. One cannot point and unpoint simultaneously. Taking Job 7:21 for example: W:Shi'X:aR.Ta"NiI<'7r"mn> is probably W:ShiXaRTaNiI (as it is ~T~), but with an option of W:ShiXR:ThaNiI (which would have to have ~Th~). If it can mean both, then <a> simply told <a> could be left out. BHS says: sic #L, mlt Mss Edd W:ShiXaR~. It would follow that <:i> in *xatephs* could have been *nax* just as *naa&*.
³⁹ It still could have kept <a> beside <:i> for those who were unable to pronounce %aleph clearly and reliably.
⁴⁰ *Xatephs* being alternatives may not imply without checking that e.g. Is 17:5 ShiBB:oLiIM can read [šibb:lim]. In this instance possibly so (ShBLIM occurs 6 times, 1M 41:5, 6, 22, 23 and Is 17:5 bis, and only in this ~BB:o~ shape). All *xatephs* in all words have to be checked. That is why theoretical phonology must base on a corpus.

provide a few examples, cf Job 20:7 K:,GhaeL:aLoO<dx> as well as 26:13 Xoo,L:aLAa"<mr> and 40:22 Ci,L:aLoO"<at> between L and L, Job 29:25 %ae,Bh:aXa"R<mn> following Bh just as Is 14:25 in W:Su'BB:oLuU"<p\$.zq> has <o> at BB (consistently, cf SuBB:oLoO"<rv> in Is 9:3, 10:27), Job 34:10 %a,N:aSheE"<mr> concerns N, also <o> following M in Job 9:8 _Bo"M:oTheE<mr> just as Is 14:14 does it for &aL_Baa"M:oTheE<mn>. If <a> can be supposed to be a recommended alternative for those unable to make pharyngeals clear, all these cases must have offered alternatives for a different reason. If it were simply a shwa coloured phonetically from the environment, <a> rather than <o> was to be expected inside ~aa~?~ee. An ^O timbre, however, related to ~MoO~ in other forms so the <o> appears a phonologically motivated: either a reduced vowel, as traditionally thought, or a phonological alternative, as proposed here. Is 16:3 C@,H:oRaa"JiM<at> may explain it: The <, > probably does not preserve <aa> so remotely from the accent, but must have had a reason, possibly two alternatives, one to preserve four syllables, co o ra jim, or to keep [h], co hra jim. Who was unable to say CoH:Raa^JiM was allowed to replace it with [o] without fusing Co<, >oRaa^JiM. Such replacement was not general, it was not allowed e.g. in 6:7 TaeHGuU"<7f>. (Phonetically, H is neutral and prefers no timbre.) Given this variety of contexts, 'emphatics' such as Job 33:25 Ru,7:aPha"Sh<mn> for ~7:a~ and ~7:o~ in 17:9 ~7:oH@R_ (probably 7:HoR or 7oHoR) seem hardly motivated by their pharyngealisation.

The three specific timbres of *xatephs* appear reasonable also due to rather volatile nature of shwa. It can be vocalic or void (as is well known to any student of (any) Hebrew) and its nature in MsH probably depended also in part on rate, rhythm and perhaps also style (just as in ModH). It was clearly vocalic in Is 14:17 Baa"J:ThAa<sq># as ~Th~, no ~T~ follows. Phonetically, it was probably protected in patterns such as &aaSh:ShAa"<7f> (Ps 31:10) and Bee,RaKh:Khaa"<7f> (Ps 45:3) and welcome in places such as Is 1:18 W:NiWWaa,Kh:XAa"<mr> (note the Kh and the <, > in support) to help keep Kh and X distinct. On the other hand, Jb 31:27 WaJi"Ph.T:<mn> has . almost surely void (as ~T tells) and quite probably also the ending ~JiPhT with no vowel as the next word starts Ba~<mn>, not Bha~<mn> (and the <mn> melodemes were too weak to work out the effect). Still, there are cases such as Job 13:7 that makes one think twice. HaL.%eeL<dx> is expectedly HaL:~ as L: is a morpheme, but no harm would be if it were HaL~. Another unclear form is Judg. 9:28 bis Na&aBh:Dhae"NNuU<zq> former, mr latter> which indicates a vocalic <: > by ~Dh, so it cannot be ~BhDae^~ (indeed, the form is consistent throughout TN^K, cf v. 38, Job 21:15) though both the rhythm and the verbal form can make a modern reader wonder why the *naqdanim* insisted on a vocalic shwa here. In Job 15:28, NiKh.XaaDhoOTh<rv> is another instance where shwa should be silent (as the *niph&al* template NiP&aL suggests) but a modern reader wonders if ~KhX~ neighbourhood did not in fact produced a shwa sound, at least in some modes of delivery (such as in Is 1:18 above). If shwa was not phonemic (as the dual nature, void or vocalic, of <: > hints), it probably did not matter so much. What must have mattered, though, was the specific timbres marked up as <a>, <@> and <ae>, exceptionally also <i>. These need time to reach their quality and cannot be as undetermined or volatile as <: > probably was.

Another unobvious issue in vowels that would deserve a corpus based research is the value of <@> when alternated with <ae>. The MsH text abounds with instances of e.g. *segholate* nouns -ae-ae- that turn -aa-ae- under heavier stress. Is 8:12 brings such forms forward side by side, Qae"ShaeR<zq> ~ Q@"ShaeR<at>. The <zq> melodeme is no weak stress, <at> though is heavier and can produce a cadence. The meaning of QaeShaeR is the same, in fact it is meant as a repetition, an echo of the word. Why ~ae"~<zq> changed to ~@"~<at> is hard to explain and reading ~@"~ as ~aa"~ is even harder. (Thinking of ~aa~ as ^{IPA}[ɔ] or ^{IPA}[ɔ] seems to me on the verge of unacceptability.) As the difference of the alternation appears to consist in nothing but prosody, it seems more probable the <@> sign had more values than one or two usually supposed and pronounced today. The third value would be a long and very open [æ]. The conditions in the larger bottom area of the MsH vocalic quadrangle may got more complex than in higher vowels (I have to refer to iE1.5 for examples and iI1.5 for discussion) and offer just another example here to illustrate the variability.⁴¹ 2M 36:10 points out twice a phrase %XT %L_%XT, "one to one," this way: %aXa"Th<7f> %aeL_%aeXaa"Th<at/sq> so the former %XT is a contextual form, the latter is in a cadence under the <at> and <sq> stress, respectively. If the strong phrasal stresses <at> and <sq> opened the rather close and short <a> (..--7a5 in Glossa notation) in an open front, probably somewhat prolonged <ae> (..---8ae6) in prestressed syllables and in a very open <aa> (..----9aa5) in stressed positions. (The grid 5 grade can be thought of as an interval, perhaps

⁴¹ I have to use Glossa notation as IPA is hard to work with on such details, at least in older word processors. Please refer to CD1b2.1 for a systematic treatment, or to Glossa notes in Acronyms in iiA for brief explanations.

{{4..6}}, while due to the fact the more open, longer vowel was simultaneously made as frontal in <ae> it could be here supposed for <aa> more probably 4 than 5 (.....9aa6). What matters is only to keep adequate perception difference between the two vowels so as to justify the two different symbols. For example, if <ae> is considered ...--7ae6, than <aa> would be adequate as8aa5. This, however, would exert pressure to other vowels in the system, <a> ...--6a5, shwa rather ..-5:6 than ..-5:5.) For the numbered values to make sense, a vowel quadrangle should better be shown (see CD1b2.1.4.4 for the grid):

9	8	7	6	5	4	3	2	1	0	
^I						^U			1	
^E						^O			2	
			5:6		5:5					3
					6a5					4
			7ae6		7a5					5
			8ae6		8aa5					6
			9aa6		9aa5					7
										8
										9

« The general ^I, ^E, ^U and ^O areas offer not much new beyond earlier phonologies, and have been dealt with in *PMHI* already. The ^A, however, was shared by three symbols to mark up vocalic sounds that have to be disentangled and their phonologic power checked in texts. It is vital to pay attention to prosody as the three vowels alternate under various types of stress.

The MsH graphics of ^A vowels appears to suggest <qaamaec>, <@> in AH# and <T> or in

fact <T> in the MsH record clearly derives from <pathax>, <a>, <T> extending it downward by the <_1> halting or (in #A, #L) <. > opening element (cf *PMH Ip*:133), which may reflect a similar motivation as in <saeghool>, <ae>, <T>, extended from <ceeree>, <ee>, <T>. If one imagines a vocalic 9v9 grid with a putative “high”-to-“low” border somewhere around 6-7v0, which might be a position of a vowel marked with <pathax>, <a>, what remains to assign are two to three vowels marked with the <aa> i.e. <qaamaec> sign. This border needs not to be thought of as *horizontal* (6v9~6v1) in a classic phonetic graph, but *slightly slanted* or bent, lower in front, higher back, 7v9~5v1. From there, the <a> vowel can get extended in three directions. Then it makes the meaning of the <qaamaec> symbol as “deeper than pathax” fully justified since the remotest back extremes in acoustics and articulation are an open ..[oa] and ..[ao]⁴². Closed ..[o] and ..[u] are both higher and fronter (following the shape of the velum). The now standard form of the vocalic quadrangle is misleading in making the impression as if all the vowels in the back were equally back. Its original form⁴³ used to have its back boundary slightly slanted up to front, which better reflects natural conditions. If then <pathax> was to border ‘deep’ (i.e. back and low) vowels from the rest, it would be an open ..[ao~oa] jointly with all the ^A timbres (cardinal vowels 4, 5 and 6) that would be found beyond that border justifiably by phonetics.

□ In the quadrangle ▲, the <a>, the highest of low vowels, seems short (perhaps the shortest one of the three) but still distinct from shwa by timbre and firmness of not being so volatile and fluid. It could replace &, H, X for those unable to pronounce them (and made a *furtive patach* diphthong, *PMHI*:125).

■ The <ae> was more open than <e>, possibly also somewhat longer, but when prolongation was to become prominent, it was replaced with another symbol. So <ae> seems also compact in properties.

□ The <@> symbol in turn covers the space lower and more back than the other vowels. While this characteristic might have appeared consistent to *naqdanim*, it breaks down into more units to modern readers and researchers, both in prosody and in articulation. First, {{4..8}} by {{3..1}} is an ^O area, <o>; the rest is what remains of ^A, <aa>. Second, durations differ as the upper back, {{6..7}} by {{3..1}} is fairly short while the rest are very long vowels, probably the longest ones in the system. Perhaps it was this latter property that made the distinction easy for an ancient reader: If the vowel was to be unstressed and short, an open <o> was pronounced. If it was not constrained for duration, an open version of an ^A vowel was used. (The short one was <a>.) That vowel, beside being the most open of all, was notable by its prolongable quantity so it could be pronounced e.g. as9aa6{{5..4}} for <aa>, or9aa6 for <ae> where a regular <ae> was felt to be too constrained to use.⁴⁴ Though the MsH texts were sacred, read in a traditional conservative manner, there still might have been dialects in effect that would further

⁴² Roughly [ɔ] and [ɒ] in IPA, but some diacritics would probably be needed to make it the extreme I mean.

⁴³ Cf early editions of Daniel Jones (1960₉) *An Outline of English Phonetics* (Cambridge: Heffer, p:36ff) on cardinal vowels; or Daniel Jones (1947₈) *An English Pronouncing Dictionary* (London: J. M. Dent & sons. Ltd.).

⁴⁴ No claim concerning phonology has been made so far. What was and what was not phonemic, how much and when exactly (as being a phoneme is a complex property), it is to be researched through technology and statistics. Distinctions have been based on MsH Tiberian graphics that needed not to be, and probably was not, concerned with phonology. More different types of MsH graphics (non-Tiberian and mixed) in more texts is planned later to be taken in. Phonology has to take account of all the systems and check if it all boils down to the same vocabulary.

complicate the picture and might well have been the reason for such flexibility in $\wedge A \sim O$.⁴⁵ Nevertheless, one point remains independent of dialect: The lower jaw does not open in a symmetrical way: The further back and closer to the joint, the narrower is the opening. That is why also the degree of openness in vowels is asymmetrical: The front vowels achieve greater distinction. Back vowels in turn tend to compensate their smaller opening variances sometimes in front-back shifts (the most back being often [o], perhaps surprisingly to some) or in fewer phonological distinctions. Back vowels are often and typically rounded, and if rounding is not employed phonologically (/i/ vs /y/, /e/ vs /ø/), a different degree of rounding can enhance distinctions between various degrees of openness which, in front vowels, are clear as they are.⁴⁶ Roundedness, however, is distinct from unroundedness the less, the larger is the aperture. Due to it, the distinction tends to apply so sparsely in the most open timbres (of the class $\wedge A$), and if so, it gets partial support also by differences of the front and back places of articulation. For the same reason, vocalic phonological systems have distinctions neutralised in rounded and unrounded vowels as well as the front and back vowels simultaneously, and the most often, in a single member /a/ which is the lowest one. This uneven distribution follows from the geometry and acoustic properties of speech organs and are well known.⁴⁷ They tend to be one of the causes of tensions in a system, hence a source of its internally motivated changes.

The phonological system of MsH appears to show the two asymmetries. There are more differences in front vowels (or, at least, it marked differences at front more clearly). The most open member that is marked as such makes the impression its symbol might cover more phonetic timbres. But it is just a single symbol. The MsH vowel topology shows a conspicuous asymmetry at this point which, however, seems to be conformant to general tendencies, so it may be no rare phenomenon.

The close (front: <i>, <ee>, and back: <u>, <oo>) vowels do not capture length in writing, (i) (e) (o) (u). It could be two vowels, "[i e]", "[o u]", or four ones, "[i]", "[e]", "[o]", "[u)].

The central mid zone, <: >, <:e>, <:o>, <:a> can be a single central mid vowel, phonological or epenthetic. (If Tiberian epenthesis *C*: could be interpreted :*C* in Babylonia is outside of *PMH II*.) Furthermore, the preliminary study in *PMH I* shows the <:e>, <:o>, <:a> as alternatives of <: > and a full vowel (including a rare <:i>). The central open-mid <a>, on the other hand, emerges as a single vowel in phonology, too.

In the front and back open-mid ones, <ae> and <o> seem to be relatively short and open, <ae> being short in contrast with <ee> which can be longer. Further research should check especially three options—two vowels, "[(ae)]", "[o]", or another two ones, "[ae ee]", "[o oo]",⁴⁸ or a single one of "[aa ae o)].

The open <aa> reaches from open front-central through to open back-central as a single vowel "[aa]", or another, of "[aa ae o)] as mentioned above. In the record, <aa> appears open front, central or back in different contexts (iE1.5). <@> (that includes ..--6o2 in Sephardic and academic pronunciation) is apparently the most open vowel, which in back makes a short open o, but its backness (considered to be its essential feature by some) is not suggested as obligatory at this research stage. On the other hand, it may mark out any open unrounded vowel provided it was more open than a short open-mid <a>. In a similar vein, <i> might mark out any closer unrounded vowel (lax unlike <ee>?) that could well have also been a closer shwa, ^{IP}A[ə]_{IPA}, such as might result from an unstressed reduced "[a)]. Note that reduction in MsH somewhat correlated with closeness (and *vice versa*) as also <: > reduced to <i>. <: > marked up the end of a syllable (analogous to the : end of verse) that might close in a neutral vowel that remained after a full vowel. So the pointing can be understood, instead of straightly labelling vowels (as

⁴⁵ The relatively high incidence of $\wedge A$, sometimes pointed to as a possible indication of an interpretation bias, is only partially substantiated by a germinal corpus made by BnaA in CD2a (the rough figures include tags, labels and variants while excluding split digraphs so have only indicative value): all $\wedge A$ total 304,485 against 403,558 of all other vowels, but this high sum is made by 181,384 of <a> incl. <:a> (25,645) while <aa> makes 123,101. To claim that <@> needs to be broken down to get the vowel figures in proportion, one had to add the aa+@+o--:o = 150,428 (or 151,071 with :o). The figure is still high but not so impressively high to render clear support to such a claim. (In fact, $\wedge A$ 304,485 to $\wedge E$ 146,291 to $\wedge I$ 112,083 to $\wedge O$ 102,197 to $\wedge U$ 42,987 ratios offer no extraordinary picture.) What could be tentatively assumed on such still inexact figures is that two to three vowels in <@> are possible and would create no radical asymmetry in the vocalic system of MsH.

⁴⁶ A phonological theory based on distinctive features cannot capture this phenomenon and is unable to formalize processes that are caused by it. It is still useful to try to pinpoint properties in a feature-like manner, they only should not be distributed evenly as if they were units. Features in the background theory are treated differently.

⁴⁷ One of those who pointed to it was André Martinet (such as in (1955) *Économie des changements phonétiques / Traité de phonologie diachronique* (Bibliotheca Romanica X, Berne: A. Francke S. A., p:86nn, and elsewhere).

⁴⁸ Please note any sequence of characters can be a transcriptor in Glossa, so ..ae and ..oo are valid transcriptors.

timbres could have been more, especially if more communities applied the Tiberian system), rather as reminders of, or pointers to, correct pronunciation. Melodemes might have functioned similarly: to assist in finding a pronunciation within a range of acceptable options that might have included both spoken and chanted versions. This can be a general feature of the record. Consonantal *abjad* scripts do not reproduce the exact sound of text. The reader needs to know and recognize the words. The record only reminds and constrains. To think of a robot mindlessly reproducing lines of text with no previous knowledge of anything apart from the script is mistaken. Literacy is (and was then) for the literate.

Hence, MsH phonology of vowels appears to be based on contrasts of open-closed and front-back rather than long-short (as it probably had been in earlier development stages). Contrasts of ⟨aa⟩ vs ⟨a⟩, ⟨ee⟩ vs ⟨i⟩, ⟨oo⟩ vs ⟨u⟩, perhaps also ⟨ae⟩ vs ⟨ee⟩, ⟨@⟩ vs ⟨oo⟩ and ⟨:⟩ vs ⟨a⟩ need to be checked throughout the corpus. Front-back contrasts include ⟨ae⟩ vs ⟨a⟩, ⟨ee⟩ vs ⟨oo⟩, ⟨i⟩ vs ⟨u⟩ while ⟨aa⟩ is neutral. The research task is to replace ⟨graphic symbols⟩ with "[phonological values]" as the work goes on. It is crucial, however, not to mistake ⟨graphics⟩ for "[phonology]" before all possible classes of equivalence are checked out. Phonology should not be the assumed principle of writing.

While it is idle to speculate on phonetics, reasonable analogies might be useful at times. Specifically, a general degree of openness in vowels is a phenomenon that manifests in consonants, affects the syllable and can be used phonologically (though mostly it was probably not). It is spirantization of consonants, well known from present-day Spanish while a very similar process was operative in ancient Aramaic. The fact that MsH orthography features the same phenomenon betrays that the MsH graphics was in the making when the Jews who invented it and refined it were native speakers of Aramaic rather than (as it was later so) Arabic. The reason to mention it in conclusion of vowels prior to approaching consonants is that the cause might well be in vowels if there is a similarity to Spanish. The five Castilian vowels are closer than e.g. the 'same' Czech vowels. This closing tendency then results in lower oral capacity to absorb accumulated pressure produced in voicing [^]B-D-G stops between such fairly close vowels. The plosives, so as to keep voiced, have to slack closure enough to turn into spirantized [β]-[γ]-[δ], a kind of lenition of [^]B-D-G. Provided a similar phenomenon occurred in MsH, it would entail that ⟨i⟩, ⟨u⟩, ⟨ee⟩, ⟨oo⟩ and ⟨a⟩ would have quite certainly had low volumes. One can be less sure with ⟨ae⟩ and ⟨o⟩. Contrasting with them would then be ⟨aa⟩ which can fairly certainly be considered the most open vowel in the system. If the process in Spanish was effected by language substrates, it might have been vowel-independent⁴⁹ unlike the substrates. Also syllables with [^]A could have been affected by such a pressure lenition by analogy even if such a process would most probably start in back vowels, of which it is [^]O that tends to have the least capacity of the proximal cavity (i.e. immediately above the vocal cords). It can be well observed in Russian that changed its ending -oro from [ogo] to [ovo]. A similar phenomenon has obviously occurred in Ukrainian, Slovak and Czech, ^(IPA) -[ogo] → [oyo] → [oho] which has spread to all [g] → [h] throughout the system before the cause ceased working so it failed to affect [d] and [b], too. The spirantization of [g] in Russian got restricted only to that single ending. By analogy, in Aramaic and MsH it might mean that apart from ⟨o⟩ also ⟨aa⟩ was back in at least some of its variants. The least liable would be ⟨ae⟩ with the most capacity, and perhaps a front version of ⟨aa⟩. It might be speculated further that all the vocalic system was possibly located more back than e.g. in Czech. (Still, MsH might have been affected only secondarily as a superstrate or adstrate, regardless of real conditions of air dynamics in that language.)

Vowels and consonants are closely related subsystems that affect each other in multiple ways. In that, they can be viewed as two related aspects in a larger unit, the syllable, rather than separate systems. This is a view explained in B1a. A few more points need to be dealt with in segments of MsH syllables.

Consonants do not seem to be of such an importance for prosody the present dissertation focuses on. Still, there are a few symbols that do affect suprasegmental interpretation of the sound of MsH text. Just as with the vocalic marking, the reason is we cannot be quite sure what function the mark used to have in the text as, again, some symbols seem to have been synthetic, performing different functions in different contexts. Consequently, we also cannot be always sure whether there happened to be more functions of which we are (still) not aware today. Hence, the textbook explanations are (as always, and have to be) somewhat simplifying. Or, offering more complicated explanations for what might have been quite simple in reality—of which we can only speculate today, or infer from distributed clues.

⁴⁹ Spanish is a vast language. Conditions of lenition there are complex both geographically and phonologically. I do not wish to go into details and am aware the suggested explanation is not the only one proposed and tested. The reason I have mentioned it is I consider it probable and, besides, it is a well-known example, fit to illustrate.

A concept of importance for syllabic and prosodic structure of MsH text is diplosyllabism.⁵⁰ It is the issue of how much the onset of the next syllable affects the structure of the syllable that precedes (its vowel and coda). The concept of diplosyllabism is crucial for the interpretation of *dagesh*. It seems possible that the point in a letter adjusted the consonant pronunciation in more ways: despirantized plosives, prolonged the phone or shifted the syllable boundary further into the phone (regardless of its length)—all of which can be seen as different facets of a single phenomenon (which has already entered phonology as ‘ambisyllabicity’, see the last pages of iiR). Without repeating what *PMH I*:186–195 collected on *dagesh*, we shall focus on iI2.1’s interpretation of iE2.9.1 as it reinterpreted the MsH syllabic junctures and introduced the concept of diplosyllabism. The start of I2.1 is worth quoting in full: “*In E2.9.1(2) it was claimed that* “geminatio is ... adding intension phase to the run of the consonant, ...c/c/, not just a tension as the verb ‘prolong’ might suggest.” *This is an important concept that disassociates the traditional ‘geminatio’ with long sounds. While a ‘geminatio’ consonant can still be ‘long’, ... \cc/ (most of them are, and no reason is to think otherwise)—this concept implies that any length is theoretically possible for a geminated consonant, ... lcc/, .. lcc/, provided this fundamental feature of adding the lcc component to the cc/ original component is preserved.*” Unlike theoretical phonologists who may find it awkward to insert a syllable break inside a consonant, speech seems little concerned with these literacy issues and finds consonants an ideal break to put a syllabic break into. A syllable has been defined in iC3.2.1 as “*a domain of assimilations to the nucleus,*” so a consonant can be more or less assimilated to a nucleus and simultaneously less or more adapted to a next one, too. In fact, the constant change, also inside consonants, often makes it impossible to capture any firm syllabic border at all, between or inside ‘letters’. The syllable still remains an intuitive unit but more than one correct interpretation may compete for where one syllable ends and the other begins (which one prevails may depend on rate, rhythm and rank of text). *PMH I*:300 exemplifies on &aBhDiI and &aBhDheE how it can affect a shwa: If &aBhDiI syllabifies into {&aBh} and {DiI}, {~.\Bh} closed a syllable and {../D~} started another. If in turn &aBhDhil breaks inside Bh into {&aBh+}{Dhil},⁵¹ i.e. &aBhDhil with a Bh containing the syllable juncture inside,⁵² the detensional {../Dh~} no longer begins a syllable as the formerly intensional (vowel-closing) ..\Bh changed into a ..\Bh/ that was both \intensional (closing) and /detensional (vowel-opening) regardless of the length of the consonant (any length would work, ..\Bh/, ...\Bh/,\Bh/) and the ‘hind’ portion of -Bh/ moved to the onset start of {-Bh/..Dh/..ii} simply as it stopped being articulated on the resonance of the earlier syllable. What resonance became its carrier? It could well be ..ii. Or it might be a ..shwa prior to ..Dh ..ii. A shwa presence was adequately signalled by ..D being ..Dh. Consequently, even if it was totally absent, it was ‘heard’. Whether ~..\Bh..[ə]..Dh..ii or ..Bh..Dh..ii or anything between was selected, it might have depended on other factors without affecting the validity of MsH marking. The segments ..Bh and ..Dh used in iI2.1 allow for an immediate fusion with no vocalic sound in between. Other segments such as plosives tend to create one so e.g. ..B ..D joint will often (not in English) need a shwa, be it reflected in writing or not.

Consonants stood at or across syllable joints and beside that, naturally, at joining words. It seems the *dagesh*, a dot sign inside letters, used to play a role in word linking. A word might join a vowel-ended one with a ‘dotted’ plosive changed into a fricative, such as Xaa,ZuU_BhoO"<at> in Job 36:25 where ~uU_Bh~ is a close link (marked so by the <_> sign). The other cases are seen in Job 35:6-7, viz. 6a: MA_TTiPh&oL_BoO"<at B=B!> where ~L_B~ is again quite regular (and is marked close by <_>). The case of MA_TTa&a5Ae_LLoO"<sq LL=L!> in 6b though fairly frequent⁵³ needs a consideration while MA_TTiTTaeN_LoO"<at> in 7a shows an entirely regular ~N_L~ joint just as Job 37:24’s KoL_XaKhMeE_Lee"Bh<sq> with a simple L following a vowel is expected and regular.⁵⁴ 2M 37:12 agrees almost to the letter and melodeme with 25:25 having both almost to the letter and melodeme identical surroundings but for this difference: The verb changed from W:&aa5il"Thaa<qd> (“then you make”) to WaJJa"&a5<qd> (“then he made”) which brought about a change from ~aa LLoO"<mr> to ~a5 LoO"<mr>. The vowel-joining *dagesh* forte disappeared following a consonant. The next verse shows a similar change when both a verb as well as its form changed, from W:&aa5il"Thaa<mn> LLoO<zq> to WaJiCoo"Q<mn> LoO"<zq>. The change affects L and not e.g. Z as in the same v. 25b

⁵⁰ Seen as a phonetic property (cf iI2.1, iiB1a1.1) unlike ambisyllabicity. Bibliography on ambisyllabicity is in iiR.

⁵¹ + in Glossa joins a coarticulator, which can extend to an internal syllabic break, too. See CD1b2.1.5, or iiA.

⁵² Actually, a quick but smooth change in formants, which detects as transitions if the consonant resonates.

⁵³ The BnaA output (CD) showed 240 instances (still unsure if all the inherited marks have been filtered away).

⁵⁴ The 710 instances can be compared with the 240 ones as the search logic was the same for both searches. Still, reservations are held as I had to use a third party search engine that seemed to have bugs or quirks at times.

W:&aa5il"Thaa<dr> ZeeR_ZaaHaa"Bh<tv> where there is no ZZ just as it is not in WaJJa"&a5<dr> ZeeR_ZaaHaa"Bh<tv>. L appears to be treated at times as a sort of plosive: while the latter fricativized following a vowel, a well understood alteration, L underwent changes only speculated about. Did ~vowel_LL~ prolong? Or can it be better explained by the ..\L/ mechanism as above? The effect would be very similar as the L would close the preceding open syllable in both cases. Only its length would not be affected in the latter explanation, and that is what makes it important to consider also in a MsH prosody research. The *dagesh* was used also for pointing a consonant out as it appears obvious in Job 39:16 in an apparent onomatopoeia, BaaNaE"Haa<mn> L!:LOO_LaaH<at> (L:RiIQ etc.), but also, in this configuration, to make sure L would not melt away (so L! might have fulfilled a similar role as L:, with *meteg*). It may concern more consonants such as M. Job 10:20 points MM:&aa"7<sq> to keep M~ clear, cf v. 20a H:aLOO_M:&a"7<mn> with a much weaker accent against a very strong <sq> in an ~aa-:-aa"~ <sq> context wheree <aa><aa> could well swallow M:~. Sometimes, it may be unclear if the *dagesh* had a simple shwa-preserving function, or we should better look for a geminating word form, such as in 2M 27:3 where Sh in L:DhaSh!:NoO"<zq> may have a <!> possibly to prevent reading ~DhaShNoO^ (as in ModH) but keep its shwa, ~DhaSh:NoO. The noun DhaeShaeN had nothing to justify the gemination of ~ShSh~. It could, however, be a *pi&el* inf. (which is how HALOT⁵⁵ explains it) and then, indeed, ~ShSh~ would be etymological, making it *dagesh forte*, a category well known (but less understood, anyway). A prosodic concern is more apparent in Is 5:1ff with a *dagesh* difference between %aaShil"RAa<mh> NNAA<p\$> (v. 1) or %oODhil,&Aa_NNAA"<mn> (v. 5) and ShiPh7uU_NAA<Zq> (v. 3) to be probably also in N!~ signalling word independence, a sort of divider, whereas its absence makes fusing possible. It can be made phonetically as just ~....u.n....a againsta....n....a (..n againstn). But it cannot be reduced to a simple *maqeph* effect since right the v. 4 has MA_L!a&a5oO"Th<mr> that can be ..m.a....l.a~ (a diplosyllabism with or without lengthening). Is it a necessary gemination following MA_? Or is there a difference between proclitics and enclitics? More regards can overlap and only corpus can cover them all, excerpts are incomplete and endangered by bias. The need to search *dagesh* for more categories of sounds separately can be shown on Is 5:14 to see a *dagesh* linking predicates and subjects, <mh><p\$>, HiRXil"BhAa<mh> ShSh:%oOL<p\$> with intonation, syntactic and semantic reasons for integration in a single sound unit. The ShSh~ apparently closes a syllable and opens another (a diplosyllabism) this way: {~..Bh ..aa ...Sh+}{.shwa ~}. The same, though, cannot be applied to ~Aa Phil~ of the following unit uUPaa&aRAa"<mr> Phil"Haa<7f> (again a predicate and a subject, apparently a single contour of intonation <mr><7f>) since ..PP is loaded with a phonological function and a ..P unlike ..Ph signals an intonation break. Still, ..[f] can be prolonged,[f], and turn diplosyllabic, ~.r ..aaf(+)} ..i ~. The MsH graphics, however, fails to mark it out. This, then, could be another instance where a *dagesh* could not be applied apart from laryngeals and pharyngeals (% , H, &, X). If we can suppose fricatives did geminate or diplosyllabize (an assumption or option), e.g. in a diplosyllabic linking of words, no *dagesh* could be searched for in db and only categories of letters and contexts had to be considered.

One of the most obvious locations where prosody and *dagesh* can be examined together is the doubly pointed Decalogue. 2M 20:13, 15 seems to support strongly the assumption pointing with *dagesh* was not automatic but related to melodemes (i.e. not phonetic, but phonological). The doubled mark-up⁵⁶ of the Decalogue brings about also a dual differentiation of <T> in LOO T!|iRCaA (v. 13) and LOO T!|iGhNoOBh (v. 15), i.e. a single consonant graphically *!dageshed* and *Jraphe'd*. In line with my melodeme theory (see below), I understand it as a more tightly integrated delivery with melodemes LOO"<mr> ThiRCaA"<7f> and LOO"<mn> ThiGhNoO"Bh<zq>, and a more emphatic (prepausal) rendition with melodemes LOO"<7f> TiRCaA"<sq> and LOO"<7f> TiGhNoO"Bh<sq>.⁵⁷

⁵⁵ Ludwig Koehler | Walter Baumgartner | revid. J. J. Stamm (1994) *The Hebrew and Aramaic Lexicon of the Old Testament* (Leiden: Koninklijke Brill NV, el. ed.).

⁵⁶ There are two manners of recitation, one for individually reviewing the weekly *sidrah*, the other for the public Torah-reading on *shabbath* and *Shavuoth*. RaMBaN (2006) *The Torah: with RaMBaN's Commentary translated, annotated, and elucidated* (Blinder, Kasnett, Bulman, Gold eds.; The ArtScroll Series, New York: Mesorah Publications Ltd., *Shemos/Exodus*, vol. 1, p:478-520 for the former (LOO"<mr> ThiRCaA"<7f>, LOO"<mn> ThiGhNoO"Bh<zq>), p:548 for the latter (LOO"<7f> TiRCaA"<X<at> ~ LOO"<7f> TiGhNoO"Bh<sq>). See iiB2c later on for more on that.

⁵⁷ If prepausal rise in intonation on <7f> could quicken a consonant power of ~% in LOO, e.g. by a sharper ending of ~oo, would be a vain speculation. Possible it is, and then ~oo% Ti~ would be phonologically regular and expected. A MsH corpus needs to be searched through to check if the <7f><sq> sequence can have that effect.

Is. 3:9, however, appears to show a dagesh used independently even of melodemes (<mh><p\$>). &aa"N:ThAa<mn> Baa"M<zq> is remarkable with its ~Aa B~ following <mn> as there is no apparent formal reason for B~ following an unequivocal conjunctive and a vocalic ending. Still, B is marked up clearly with a *dagesh* and no doubt is also concerning the vowel in the end: It cannot be ~aaH as the verb (3sf) &aaN:ThAa has no direct object (untold by the sentence) and the indirect object is exactly that BaaM, hence ~Aa cannot be construed as ~aaH (as if a forgotten *mappiq*). Conspicuous is also the accent far from the end, &aa^N:ThAa. But v. 12 seems to follow a like structure (Maa"Sh:LuU<mn> BhoO"<at>), and there is no B~, only Bh~. After all, if the verb with an indirect object would be regarded as a unit (&aaN:ThAa Baa^M instead of &aan:thaa^m), nothing of it formally justifies a B~ in BaaM. Consequently, it appears that a Bh/B distribution rule could be applied also autonomously, not only as a result of a phonetic and prosodic context. We can tentatively assume the vocalization of BaaM instead of BhaaM most probably signals an emphasis (a virtual pause i.e. the opposite of a link), which it seems very appropriate, considering the content: The meaning is “against them!” rather than “about them”, which the B~ instead of Bh~ seems to support efficiently.

The #L ms shows an unambiguous and distinct *dagesh* in B. Additionally, #L is fairly consistent in marking up absences of *dagesh* by *raphe*, far more often than in BHS, here e.g. in &aa"N:Th|Aa<mn>. Furthermore, Baa"M<zq> is followed, in a place where BHS left a small indented space, with an olive mark separating BaaM at the line end from the subsequent W:Xa77AATh|aaM at the beginning of the next line. The filler mark, however, is absent from #C as well as 1QIsa(a) and from #R1525.

A similar mark, also a dotted hook, also at the line end, is found in #A, but is put elsewhere, following P:NeEHaeM; apparently the purpose of both was only to block-align the line. Otherwise, the marking of #A is virtually identical to the one of #L. The *dagesh* in Baa"M<zq> is again unambiguous, *dagesh* absences were complementarily marked up by *raphe* and &aa"N:Th|Aa<mn> has no *mappiq*.

My #C photocopy, not so clear, still shows the *dagesh* in B distinctly. Also, no manifest difference from #A and #L in the Ms marking nearby can be observed. &aa"N:Th|Aa<mn> Baa"M<zq> is found at the beginning of line and incomplete lines are filled with no auxiliary mark. None of those oldest Ms mss, #C, #A nor #L, make any comment on BaaM.

#R 1525 indicates no apparent *dagesh* in B (see above), but my photocopy fails to show it anywhere else either, e.g. HaKKaaRaTh appears there as “HaKhaaRaTh”, KiS:DhooM shows as “KhiS:DhooM” and HiGGiIDhuU as “HiGhiIDhuU”, not considering forms that provide the clearest shape possible. The verse is printed *in continuo*, without dividing marks beyond common melodemes.

Regardless if *dagesh* ‘doubling’ was a gemination, or just adding intension to detension leaving the duration untouched (which boils down to a slight shift in a syllabic boundary), this ‘doubling’ a letter might have had a welcome clarifying effect for speakers and listeners some of who might not be able to pronounce and/or perceive laryngeals and pharyngeals clearly. If &ajin had been long forgotten and silent so that e.g. Is 6:7 NaaGha& ended in a vowel, it would probably be NaaGha(&) ZZAe. If it was not so (which was how it was), the absence of ZZ and the presence of a simple Z might have been a signal there was still a consonant, &, even if the lector might not be well skilled in (clearly) pronouncing it.

Given that variability of use,⁵⁸ *dagesh* seems to be a multi-purpose device. To make of it a complete picture, it means putting many pieces of a puzzle together rather than generalize over a few typical examples. A corpus over the whole of Ms text is to be built, preferably in as many mss forms as possible (and, later, in more systems of marking than the prevalent Tiberian one) and the hypotheses have to be allowed to compete and if possible be tested by synthesizing sound experiments.

The *dagesh* complexity includes RR. The textbook rule says R did not geminate. Leaving aside any discussion on the nature of gemination (iE2.6.1:176–177 can be checked out), textbooks simply claim no *dagesh* inside R. Consulting the PMH II germinal corpus in the BnaA output (on CD) gets the count of 71 occurrences of RR in the TN^K version that entered BnaA. Checking through the results, most of

⁵⁸ One has to take into account that errors were possible, especially such a small mark to be left out easily. It may be why there is Ma_ShaDDa"J<mr> in Job 21:15 of #L and not _ShSh~ unlike NN in Ma_'NNo&iil"L<rvMg>. Also doubts were there since the Mp times such as Job 38:12 with k# JiDDa&TaaHa ShaXaR and q# JiDDa&Taa HaShShaXaR showing word boundaries were an issue as early as then (BHS points ~aa Sh!a~ hinting scholars by <!> a preference for q#). Masorettes registered in the margin what was unclear or doubted. If there is no Mp, it is wiser to try to interpret it as is or leave unexplained rather than think of an error too quickly.

them are wrong evaluations of shwa by the yet imperfect algorithm of BnaA. Quite a few, however, are interesting tokens of R! i.e. RR. Here are some: 1Sam. 1:6 HaRR:&iMaa"H<at> (*hiph. inf.*), 1Sam. 10:24 HaRR:%iThaeM<p\$> (quest. h:a + q pf 2mpl), the same word again 17:25, 2Kings 6:32, then in 2Chr. 26:10 MiQNAe_RRaBh<p\$> (no other obvious reason than the *dagesh euphonicum*, such as dealt with above), Ezra 9:6 RROO"Sh<zq>, Job 39:9 RReE"M<mn>, Ps. 52:5 RRaa"&<mn> (which is a 'pausal' i.e. strongly accented form under <mn>, a very weak (conjunctive) melodeme inside a <mn><mn><at> context; a telling example that melodemes have nothing to do with accents), Prov. 11:21 RRaa"&<at> (the same word, the same emphatic form, this time 'behaves itself' under a strong melodeme), Prov. 14:10 MaaRRa"Th<mn> (a f sg cst noun), Prov. 15:1 RRaKh (an adjective) in Ma&aNAe_'RRaKh<dx>,⁵⁹ Song 5:2 ShaeRROOShil<p\$> is entirely regular: Shae[doubling] + ROOShil. Job 39:9 RReE"M<mn> has RR to link up the preceding H:aJJOO"BhAe<mn>. The Mp noted: "2 times". Morphologically, it is in fact R:%eeM, 'a wild ox'. It is interesting to observe that the next verse, 10, repeats the word in H:,aThiQShoR_'ReEM<dx> with no RR, perhaps as it was ~R_R~ already. Obviously, this phenomenon was real and reflected on (as e.g. remarks in *Hidāyat al Qāri*' seem to testify⁶⁰). At this point, I have stopped raising more examples and asked: How much examples are needed to establish a rule? Or, how much examples are needed to discard a rule? The reason why RR is more often than not left unmarked with *dagesh* might not relate to a supposed phonetic nature of R but reasons that make *dagesh* a complex, phonetically multi-purpose sign. Or, looking at it from ancient users' viewpoint, a simple device that, by putting a point in, enabled them to point out a phone, or its variant, for a few reasons that had not to be reflected each time a reader passed over such a letter.

Another consonant capable of affecting prosody (through syllabification) is %. For a fuller treatment, please see iE2.1:161–165. Here are, again, a few (different) excerpts to illustrate the complexity of the issue and justify a data-based research. First, % must have been, sometimes, a full-fledged consonant. A dageshed Ru%%uU"<sg> in Jb 33:21 is obviously to prevent a lector from ^{IPA}[ru:]_{IPA}.⁶¹ Apart from the few %! occurrences, a consonantal % is proved by the following ~D!~ in Is 1:18 (_Ja%Dil"MuU<mr>), or ~Dh~ had to be read otherwise. 2M 15:11 Nae%Daa"R<mn> appears to be another such case. Please note these consonantal %'s are in codas, not onsets. Consequently, the following shwa is silent, *nax*, though one may hesitate if Bh@%.SAa"<at> in Jb 31:40 is Bo%SAa^ expectedly, or Baa%:SAa^, or if <o> and <aa> were phonetically identical. This is where a broader research is due, to include all the unequivocal tokens and consider more Ms pointing systems as well as Late Antiquity transcriptions (earlier are irrelevant). If e.g. Ps 18:43 W:,%aeShXaaQee"M<rv> appears in *Secunda* transcribed as ουεσοκημ, hence probably ^{IPA}[weʃhɔke:m], [wʔeʃhɔke:m]_{IPA}, we can assume <W> in ca. 3rd cent. CE in Israel (or Egypt where Origenes grew up and studied Hebrew⁶²) was pronounced as [w] and a glottal stop was (in some positions?) perhaps neglected. *Secunda* significantly differs in place and time from MsH, still its testimony may be permitted as auxiliary. Greek transcriptions regularly omitted sounds that were foreign to Hellenistic Greek, which is of little help today. Still, a historic research is possible and needed as soon as internal data are sorted out and assumptions are based on that and ranked. It is occasionally possible to infer a sound configuration from the content, such as 4M 30:3 Lae%.SooR context of Lae%.Soo"R<mh> %iSSaaR<p\$> being a *figura etymologica* of the root %-S-R would less probably (but not entirely improbably) be read ^{IPA}[lɛsɔ:r]_{IPA} as it would obscure its meaning. ^{IPA}[lɛʔsɔ:r]_{IPA} seems to be much more probable. (It also suggests that <e> was a pointing not needed at all.) At other times, <,> might have been used to protect the consonantal value of %, such as in Job 10:9 W:,%aeL_ might insert it to keep % unlike e.g. v. 7 and 13, W:%eE"N<7r> and W:%eeLLAe<dx>, respectively.⁶³

At other locations, % was clearly or very probably a graphic hint (*mater*) of a vowel or simply silent. 4M 20:6 WaJJeeRAA"<mr> Kh:BhoOD_Y<7f> betrays that ~AA was not ~aa% since the next Kh~ is not K~ (and the <mr> conjunction is the more eloquent). That occurred word internally, too, such as in Job 10:18, XooCEETHaa^Nil is clearly a vocalic ~EE~, not ~ee%~ as % is pointed vowelless and ~Th~ is consistent. We could speculate on BML%WT in Job 20:22 seeing inf.q M-L-%+oOTh but the Ms

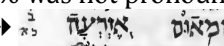
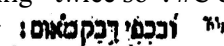

⁵⁹ Please note where ' makes sense: <dx> normally stands before a word and needs no placeholder; here, however, ' notes that *d:xi* follows _ prior to R~. That is why an auxiliary ' is offered in the AH# transcription alongside ".

⁶⁰ Khan (2013) *Resh*: Pre-Modern Hebrew (in *Encyclopedia of Hebrew Language and Linguistics*, Khan ed., Leiden: Brill p:384nn).

⁶¹ This awkward leaning back on IPA transcription is due to non-establishing Glossa yet (CD1b) and as it is simple in simple cases. Only, it has to be indicated which is which, which is awkward. No need for Glossaic ..r.....u here.

⁶² Before he was 30, he shortly visited Petra in Arabia (today's Jordan). Egypt was not arabicized as early as then.

⁶³ The BnaA data show 80 instances of <,> preceding a heterosyllabic % with a shwa or a *xateph* vowel.

pointing is clear: BiMLOO(W)"Th<mn %=W> (with the point between ~L%~). See also Job 23:9, 5:MOO(W)"L<mn %=W> pointing ~M~ with <oo> and leaving ~%W~ void. Some words may have retained orthography from earlier stages or inherited from dialects, such as Job 31:7 Mu%uU"M<sq> in #L while BHS "mlt Mss Edd M"%uUM<sq>" suggests that % was not pronounced, only ^{IPA}[mu:m]_{IPA}. Indeed, #A reads M%|uU"OM<sq><0(Mp)2>, worth a picture: ▶  The | marks % silent explicitly, commenting "twice so". #C does not have the portion. #R appears quite unclear in my copy. I include a picture ▶  for the reader to evaluate (please note the dot over ~M%~ that could be a *circellus* referring to Mp hard to read for me). In large magnification, % seems to have a *dagesh* ▶  while a point in W making it uU is obscure but possibly present. If %=#!, it could support the #L version of a consonantal %. This all indicates that Msh tradition on % might well be split. Job 15:31 KiL_'Shaa"W.(%)<rvMg> offers an interesting sample for another reason: It shows its <rvMg> on a single syllable. It unambiguously presents ShaaW.% as a one-syllable word. Some occurrences, however, are not so unmistakable: Is 14:23 W:7EE,7EETHi"JAa<p\$> B:Ma7%:a7EE"<mn> are two words with the same root: The former is a verb, it has a *mater* for EE which quickens in the latter word, a noun, as a probable glottal stop. But a question remains if % had here a real consonant value and was not just a spelling of optional ..B/..M..a...\\7/..e or ..B\\..M..a..\\7..a..7/..e alternatives (i.e. whether the first % was not kept as an ..[a] *mater*, anyway;⁶⁴ spellings tend to be traditional; perhaps a bit as in v. 32 MaL%:aKheE). A similar but clearer case is found in _Ha55:MOO"L<mn> ~ W:%a5M:%il"LAA<sq> of 1M 13:9 where a silent (%) in a noun occurs with an etymologically related verb with a pronounced % in a syllable onset few words away in a sentence. It shows % was indeed a two-valued letter in Msh. Collecting all such similar instances through a corpus and data mining is not a panacea with such rare cases but probably could be more efficient than speculations over one single case.

Another usage of the same graphics but of a different meaning is the *mappiq*⁶⁵ which simultaneously could exemplify a task to be researched through a corpus method (i.e. in a corpus with corporal tools). The word %:eLoOaH can be written with ~H! or without ~(H). It occurs 58 times in TN"K, out of which 46 tokens are with a *mappiq* ! in H, 11 times H is found without it and 1 occurrence of the word cannot be determined (LEELoo"HoO<sq> in Hab 1:11), *mater* variants ~oO~/~oo~ disregarded. The Torah has it 2 times (no *mappiq*), Later Prophets 3 times (Is. ~H!, Hab. ~(H) and ~HoO), the rest is inside the Hagiographa, most of which is Job (41 times). Apart from Job, all other books are consistent (incl. the two forms in Hab.). Job is inconsistent, neither are individual speakers in Job. No regular pattern is apparent in melodemes nor in beginnings of the next word. 58 or 57 occurrences can be researched manually and arranged in tables. Unless a flash of genius or a moment of enlightenment cuts the road to knowledge short, the way to go is long and the task quite complex as the potential causes of the ~H!/~(H) variation can be numerous (including a simple inconsistency which, however, is not so probable in the meticulously treated Holy Writ and should be considered last). Melodeme contours and accent patterns surrounding %:eLoOaH need comparison,⁶⁶ considered can be sequences of vowels (whose articulation remains under many consonants making them able to interact directly) and of course the next word beginnings deserve a second look. Probable or suggested speech rate can be only speculated about (unless the melodeme research is more specific concerning it) but what is possible to take an account of with much less speculation are syntactic and sentential meanings as well as any other clues in text. These are some (probably not all) dimensions that compound the complexity of the searches to be made and lists to compile. Needless to mention many multidimensional questions have more than 57 instances to deal with. Corporal approaches harness statistics and offer several methods to detect patterns that may easily escape the scholar's attention in issues that seem not to make sense. The final evaluation is human but the pre-processing can be assigned to machines.

Before melodemes can be approached, there are still a few more issues that may complicate prosody.

⁶⁴ One has to be careful whenever *matres* get into evaluations as these witness on a millenium older language. It rarely clashed but occasionally does betray there was a difference, be it minor, such as LiGh%o(W)L_Lil"<zq> in Ruth 4:6 with a W *mater* to an <o> reading. (Mp advised to disregard it and read LG%L.) The consonantal text apparently reflects the <oo> pronunciation before the Masoretes recommended to shift the stress to ~_LiI"<zq>.

⁶⁵ A dot inside a letter is the simplest graphics. Identity with another dot need not imply any similarity of function.

⁶⁶ The reason for %:eLoOa(H) might be that ~H! was felt superfluous as the word had its ..[h] clearly pronounced already (words can have special pronunciations, cf the word for God in Arabic), or that pronouncing .[a] in ..e..l..o.a was thought a sufficient signal, making ..[h] needless especially if some readers were unable to make it clearly distinct from other pharyngeals or laryngeals. Scholars can invent explanations for which they can find examples. Explanations of all available instances, however, are the harder to make the more dimensions there is.

B1b1 Syllable

B1b1.1 A Basis of Rhythm and Intonation

The *PMH I* research has shown the syllable as the crucial sequence, to which both lower units and the stretches higher above the syllabic level must relate to as a sort of a fundamental unit. The unit next in importance is a foot: a sequence of syllables united under a common stress. (Stressedness is primarily a comparative quality. Secondly, it may language-dependently affect selection of elements. But sets of stressed and unstressed vowels are available only in some languages (English is one) whereas to get differences in pitch, amplitude and timing, one or two unstressed syllables have to be close enough to the stressed one to be able to tell them apart.) Phonology, so as to be useful (again), should compile lists of typical and possible clusters, too. In order to be able to provide such answers, however, it is the syllable that has to be studied first. Specifically in Hebrew, to decide what is and what is not a cluster depends on the interpretation of shwa, which gets the researcher back to the syllable again.

A type of sequence specific for MsH are successions of melodemes. Should a MsH phonology ever come to learn what they were in reality, all possible, frequent and rare combinations of these puzzling signs need be collected, their syntactic power analysed, their musical traditions confronted (including hand gestures,⁶⁷ an infrequent but well documented portion of public musical performance), evaluated if they might indeed have to be useful as stress markers (i.e. whether it helped disambiguate words or lead the lector efficiently in contexts) and, given that all these theories proved inadequate, the prosody theory presented here could be considered as an explanation.

For the present purpose, we shall limit the scope to syllables and feet, leave out clusters⁶⁸ and devote the central chapter (B1c) to melodemes. The syllable and foot are dwelt on briefly side by side as they affect each other closely, and *PMH II* treats them as building bricks of prosody. The ‘accents’ termed melodemes in *PMH* are going to be addressed in detail as an innovative interpretation is going to be suggested. Before phonology can be approached and in the absence of native speakers, graphemics is what we are left with. So interpretation of the manner of writing cannot be skipped or taken for granted.

B1b1.2 Segmental Structure

The iE3 introduction to syllables presented a commonplace picture for MsH. Nothing extraordinary appeared to be found and *PMH I* saw it a confirmation the Masoretic pointing as read and understood today is likely (p:199, for a summary please refer to the CD). On the other hand, “*vocalic length appears to be contained in the heritage from earlier stages that sometimes seems to work well for explaining phenomena*” (cf the footnote), “*but very little support can be found for it in the actual written record of MsH. ... Alternative explanations might be appropriate to look for*” (p:200). To make the picture complete, however, epenthesis and clusters should be included, interrelated phenomena that could throw more light on onsets and codas.

For a corpus-based phonology, the task is to collect and sort out various kinds of syllables in TNⁿK, which covers open and closed ones but more than that: qualities and prominences including distances from stress and borders so as to register variants like 5M 3:20 W:JaaR:ShuU^{<mn>} and Is 14:21 W:JaaⁿR:ShuU^{<mn>} (pre-penult in some theories; this concept, however, considers ~R:ShuU a single syllable). A few points might be made: Both the theory and the technology should be open to a possibility that more than two degrees of prominence may emerge. The syllables stressed the most would apparently include the ones with <aa>, the ones prominent the least would obviously contain a shwa but a middle degree could well be ones with <a> (which is not only morphologically related but also stress-responsive as any TNⁿK reader may have observed). With closed syllables, the manner of

⁶⁷ Hand gestures might used to be a natural manner of directing music prior to establishing notation and scores. The present author believes to see such direction in Ancient Egyptian pictures and does not exclude a relationship to shapes of MsH melodemes but does not feel adequately qualified to pursue such a research. Any planned long-time research should be technically organized (CD2b) so as to make possible to process heterogeneous data. See iF2.2:218–219 for a brief treatment of cheironomy, hand and finger gestures. Here it is no space to open it again.

⁶⁸ Not due to their unimportance. Combinations such as NiKhXaⁿDh^{<mn>} in Job 22:20 concerning a probable distinction of Kh and X (if pointing reflected phonetic reality) and HaTTaHToONAA^{<sq>} in Is 22:9 showing by ~HT~ that H was pointed to read in a coda (there is no ~Th~), or using QeeⁿN^{<mn>} in an Is 16:2 context where KeeⁿN^{<mn>} might well have been found, too (but it was not), suggesting Q was distinct from K, these are just two of observations that are phonologically relevant. The space, however, demands only the main line is followed.

closing is to be noticed: Any $C_1/V_1 \setminus C_2$ is closed, still the $\setminus C_2$ can be $\dots \setminus C_2/$ (gemination) if V_2 follows, or $\dots \setminus C_2/$ (no gemination, only diplosyllabism, see iiB1a1.1). It could be found out that $\langle X \rangle$ behaves as a geminate (textbooks speak of “virtual gemination”) without being marked with a *dagesh*, which might be explained as $\dots \setminus X/$ or another gesture (here is where phonology, also historical phonology, needs phonetics, even if in a search for analogies). Different gestures or patterns may explain why $\langle R \rangle$ or $\langle \% \rangle$ do not usually need a *dagesh*. The layered syllable model (see iiB1a(17) earlier) could explain why a $\{C_1^e C_2/V \setminus C_3\}$ syllable with e epenthesis can write $^e C$, C^e , C : or $C: ^e$. There are more issues in a syllable.⁶⁹

What can be found so far in the research data is the open to closed syllable ratio. Rough estimates counted in the first version of the BnaA output (on the CD) shows 365,083 opened syllables and 243,865 closed ones out of the total of 603,948 syllables in TNⁿK,⁷⁰ which is a 1.5 ratio, a well balanced distribution (epenthesis counted as syllables). Rather than including here any ratios of ‘short’ closed, to ‘long’ closed, to ‘short’ and ‘long’ open syllables, more research is due as the *PMH I* and *II* found so far only one such distinction among $\wedge A$ vowels:⁷¹ a longior $\langle aa \rangle$ to a brevior $\langle o \rangle$, both written as $\langle @ \rangle$, while $\wedge [ae]$ values seem to assume both, i.e. $\dots [ae]$ spelt by $\langle ae \rangle$ and $\dots [ae]$ spelt $\langle aa \rangle$. The $\langle a \rangle$ appears clearly brevior. All other vowels seem indifferent to length. Sensitivity to vowel duration probably changed during the history of OH before reaching the MsH stage. The MsH opaque vocalic lengths appears to offer a picture typical of languages that used to have a length distinction at an earlier stage in history but only relics can be detected currently with more temporal variation (to the effect that both lengthwise and lengthless phonologies are possible). Also consonant duration (gemination) should be covered by the research as distinctions in only vowels (such as Czech) or only consonants (such as Italian) are possible but the two categories may be related and affect each other. It should also be checked how much if at all there was any discernible effect on vowel length by consonant categories such as voicing, manner and place of articulation (stops and labials tend to clip, voicing prolongs) and, obviously, the length of words, a position in the phrase and a strength of stress,⁷² all of which can be

⁶⁹ I tried to deal with segments in *PMH I* based on excerpts. The question is, however, how much excerpts are a proof. If limits are not to be subjective, they must relate to all possible and acceptable occurrences in a statistically satisfactory way. In MsH, the first such a natural limit is the whole of TNⁿK. Anything else is just a selection to prove one’s ideas. Rather than accumulating more excerpts, a change in method is to be prepared. Lists of syllables (such as the two lists in the appended CD) should link to original contexts, making effectively syllable concordances. This way, compilations of other phonological units should work, too: produce a concordance, then statistics, manually evaluate concordant data, test a hypothesis by synthesized speech, include in candidates for the next modelling etc. until a theory of the language is reached. A concordance-based method is hardly imaginable for phones (they are too few in too many contexts) and unthinkable for distinctive features (they are features of units, not units themselves). The smallest unit feasible for the method is the syllable. For larger units in prosody, the method may even seem attractive. (Indeed, linguists of other domains try to deal with their issues a corpus way, too.) A theory is due to justify syllables and stretches of text as units of phonology, and discourage from treating phones and features as units (admitting at the same time that phonemes are needed to interface with morphology). A growing concept of such a theory can be traced in *PMH I* and in some texts included in the CD appended to *PMH II*. Suggested technical means to implement methods in such a research are also enclosed.

⁷⁰ The figures from $[aeiou:@][(\setminus S+?)][?][, + _ ?][\wedge xFF\setminus .] * ? [(\setminus S+?)][?][?][<Q()E]$ regular expression search string for open syllables and $[BCDGHJK-NP-TWXZh\%&75\$][(\setminus S+?)][?][, + _ ?][\wedge xFF\setminus .] * ? [(\setminus S+?)][?][?][<Q()E]$ for closed ones seem truer than the ones in iiB1b fn45 on $\wedge A$ plus other vowels by simpler search patterns that included tags and labels. Here, only the TNⁿK words have been counted but still incl. variants. It demonstrates more sophisticated search-and-count programs have to be made as quick and dirty checks by regular expressions make it hard to refine and edit searches later for reasonable precision (and check if case was set correctly). The above patterns count syllables from behind, assuming each ends in \setminus or $<$, and checks if a vowel (aeiou:@) or a consonant (incl. $\%&75\$$) precedes, skipping $\setminus , + _ ? | ! . \wedge \setminus \setminus$ (is wrong), DEL and all in () except a space, as $(_{space})$ is space. It must exclude $_{space}<$ and $_{crit}<$ i.e. what is not a tag, include the syllable-closing *dageshes forte*, exclude other *dageshes* (at word beginnings, too) and *mappiqs*. Exceptional double vowels do not change a syllable as open or close. Rare exceptions such as Josh. 10:1 J:RuU`Shaa`La; iM with a consonant missing or an incorrect Paa`Naa` Ja in 5M 5:7 will insignificantly distort the result. A larger, still marginal distortion is by k# and q# as some syllables are counted twice (a precise algorithm would be complex) except at word ends that are not counted, reducing the distortion. The Divine Name (Y and y in the file) adds 6,826 open syllables and 6,826+51 (for y) closed syllables. More complicated conditions could be included by positive and negative lookahead and lookbehind (=?), (?!), (?<=) and (?<!) subexpressions, which would make constructions yet more obfuscated. As the still raw file gives rough figures, it would not be necessary. Unlike token counts, the CD lists type counts: 4,461 with separate shwa/*xatephs*, 12,241 otherwise.

⁷¹ Unsurprisingly, as the lowest vowels due to being the most open ones tend to conserve length distinction easily.

⁷² The question would not be if a strong stress prolongs vowels (it probably does and it is quite evident in MsH). It would be more interesting to find how much the stress seems to affect length. Languages with clear, independent

read out in the MsH record. Presently, it is not clear which vowels could be confidently assigned which durational category in MsH. Lenition mentioned above is another topic for which to list and analyze MsH syllables. Special attention should be paid to instances where lenition is harnessed to suggest or disambiguate meaning, a natural concern to phonology. If the communicative effect was achieved by prosodic means (accentuation, melodemes), it relates directly to the topic of the present project.

B1b2 Foot

The MsH foot relates closely to the many prosodic issues that need to be dealt with, issue by issue, in spite of making a single complicated whole. Most obviously, a foot is a unit made by a stress contrast of two or a few more syllables. Also, it is a unit of rhythm and a syntagmatic dimension of syllables that in some languages may be more important, in a way, than syllables themselves (such as English). If MsH was one of these it is difficult to determine at this initial stage of research given the absence of sound recordings. What emerges quite distinctly, on the other hand, is the issue of ‘pausal forms’. These frequent forms are so typical of the language of the last development stage of the TNⁿK Hebrew that they might be used to characterize it in a similar way as the term ‘stress-timed’ is used to characterize English. It might even be reasonable to use ‘pausal forms’ as an introductory issue to frame or motivate the whole MsH phonology with it. ‘Pausal forms’ appear to be, or could well be treated as, basic forms i.e. phonetically the least altered ones unlike other, more contextually related forms. They would better be called ‘pre-pausal’ forms but terming them ‘pausal’ is traditional⁷³ and well established in textbooks. The point is a pausal form appears the fully stressed, usually penult, while the most frequent forms in text would then be just reduced forms. A similar condition may be in English where the most frequent forms in text, however, do not appear in dictionaries. The forms found there are fully syllabified and stressed citation forms while the contextual, variably reduced and de-stressed forms are only to be derived from them. (The derivation rules seem obvious and intuitive to a proficient English speaker but may not seem obvious and have to be learned by non-native speakers.⁷⁴) In MsH, it is the other way round: Dictionary forms are contextual while ‘pausal’ forms remain odd, apparently regular but hard to justify alternants. Two steps could bring MsH in line with what is now customary in language teaching and grammars: (1) Considering the pre-pausal forms the basic ones, both for dictionaries and vocabulary teaching. (2) Analyzing and teaching prosody, with correct ultima-shifted stressing, rhythm and intonation so as to help context derivation rules become obvious, intuitive and internalized.

Two degrees of reduction⁷⁵ have been identified in *PMH I* F1.1:210 and I3:300, starting from top,

length contrasts in vowels appear less affected by prosody than languages with durational relics. MsH should be searched for dependence patterns and similar data should be obtained concerning more languages to compare.

⁷³ It appears in Gesenius 1909 quite frequently (first in §9.I.3, last in §103.2), apparently inherited, as it was already mentioned in Johannis Buxtorfii *Epitome grammaticæ Hebrææ breviter & methodicè...* (1705) Bernæ: Johanne Leusden, first briefly explained on p:21, “ob pleniorẽ spiritũs in pronũciando depõsitionem, dicuntur *Pausæ*, quarum in immutandis vocalibus non exigua vis est” (livelier pronunciation applied as *Pause* manifests in no small force by changing the vowels) referring to the end of the book where, however, the only remarks are on p:147 (12) “in pausa autem dicitur”, (14) “quod in pausa dicitur” and then again several times on p:162–163. The explanation was taken over from earlier editions such as (1669) *Epitome &c.* (Basileæ: Joh. Buxtorfi, Junioris, typis J. J. Deckeri, p:13), with the same notes in the end. The term related to <at> and <sq> as is clear from this remark: “Pauſæ majores *Athnach & Silluk...*” (1669:109) and, down the page, “Pauſa ex ultima ad penultimam rejecta...” which suggests ‘pauses’ are the strongest melodemes, and the term applied to forms even prior to 1669.

⁷⁴ “B2B” does not mean nor pronounce “business two business”, yet it comes natural 2 English speakers.

⁷⁵ It may be that more than two reduction steps will be discovered for some words or contexts in MsH (just as it is in English). Natural candidates are finite form verbs as they regularly adapt to link and precede more stressed parts of speech, leaving the verb in a stress reduction. &Uzi %Ornan (1973) *DiQDUQ HaPAe VeHa%OZaEN LeTaLMID* (Tel Aviv: Bronfman, §133.2:89), compares such verb condition to ‘*smichut*’ i.e. annexation (PO&aL HaBa% SheLo% B”SOF PaSUQ”—AF BO %eJN 7a&aM, UKe%ILU NiSmaKh HU% %eL HaSheMOT HaBa%IM %aXaRAV (italics mine), to which a few examples of verbs (followed or otherwise with a part of speech) is appended on p:89–90, so the issue is felt also in ModH, a language of aeioũ, ə reduction and a phonetic length. In MsH, forms such as %a”TTAa<zq> (a semi-pausal) and %aa”TTAa<at> (a pausal) occur, these two particular ones close to each other within a direct speech in 1Sam. 30:13, making its two natural peaks, at <zq> and <at>. It should be noted %a”TTAa<zq> (again e.g. in 2Sam. 15:2) is not a pausal %aa”TTAa, nor a contextual %aTTAa^ as e.g. in 2Sam. 15:19 %aTTAa”<7f> *bis* and %a”TTAa<zq> in direct speech (very close in Ps. 76:8). %aa”TTAa is not necessarily under <at> or <sq>, cf Job 8:6 ~<mr> while %a”TTAa in turn can be under <at> as in Ps. 25:7.

- ▷ the non-reduced, full citation form: typically a trochaic stress pattern, accented (a ‘pausal’ form);
- ▷ the slightly reduced context form: typically an iambic stress pattern, potentially mildly accented;
- ▷ the strongly reduced context form: typically a residual iambic stress pattern but unaccented.

A few points should be made clear: The stress is physiological, rhythmic, foot-shaping. The accent is linguistic, meaningful, word-shaping. The number of accents can be the same or, usually, (much) less than the number of stresses in text as not all stresses have to get assigned an accent. If stresses that are unaccented disappear or stay, depends on language, genre, rate and other conditions. (Exceptionally, additional stresses can be created, e.g. for emphasis or in poetry.) The strength of stress can be made by a selection of means apart from sole pitch, amplitude and time, such as two or three sets of vowels or a contour. If a shape of contour is indicative (such as iamb or trochee in MsH or intonation break in Czech), any vowel can be reduced in timbre and time.⁷⁶ De-accented syllables can be reduced in MsH’s prominent feet (the light one, while the other one carries the accent) without lowering the prominence as what indicates the foot status is the stress pattern, not reduction. Typically, however, a prominent foot makes both its syllables ‘long’⁷⁷ in MsH, though less so in an iambic mild reduction.

The prominent foot effect can be demonstrated best on ^A syllables as the timbres pointed seem to include differences in length in <a> and <aa> (not so much in <ae>). 2M 30:14’s WaaMaa"&LAA<at> is morphologically W: + Ma&LAA in a pre-pausal form. M~ would normally bring about uUMa~ but the ‘pausal’ quickens ~a~ in Wa- and lengthens it at the same time (Waa-) so that uU- before M~ does not apply. (The assumption is that umaa&~ and +w:maa&~ would feel too reduced unlike waamaa&~.)

Other times, and perhaps other timbres, the ‘pausal’ effect is not so in lengths but a stress pattern as suggested above. It might be researched whether it could explain a difference between WaJJOOMa^R and WaJJOO^MaeR (“then he said”). These frequent forms is a typical corpus research question (cf CD2b). As syntax structures and patterns of cantillation have to be analyzed and categorized, too many data are to be followed simultaneously, which machines are more efficient for than humans. (Though, finally, it needs a scholar to evaluate and compile.) Here are a few notes: 1M 15:8 and 2M 5:22 WaJJOOMa"R<at> might appear to be a pausal due to <at>. Still, 2M 8:23 Ka%:aShae"R<7f> JOOMa"R<mr> %eeLeE"<sq>NuU shows JOOMaR under a conjunctive and unequivocally in a mid-phrase. The 2M 5:22 occurrence is typical: It stands between a clause and a direct speech that comes immediately and is not followed with other parts of speech as WaJJOO^MaeR does such as in 1M 24:40 WaJJOO"MaeR<7f> %eeLaa"J<at>. (If not Waa%ooMa"R %aeL_%:aDhooNi"i<at>, 1sg, at v. 39 is a counter-example, then 1M 27:36 certainly is.) If cantillation is to mark prosody rather than strength of accentuation, more complex relationships can be expected that cannot be simply read out of ‘accent’ ranking. (Complexity in turn can be reduced by applying ready-made patterns in speech.) The ∇∇ (pausal) vs ∇∇ contour can be supported by a -oo-ee- (pausal) vs -oo-a- (non-pausal) template in verbs (e.g. JOOBhee^Dh vs JOOBha^Dh, NOOKhee^L vs NOOKha^L⁷⁸). More research is due.

(i) Apparently unconscious selections of ‘pausal’ forms:

‘Pausals’ appear unconscious many times in TN^K, and conscious at other times. Often, a reader of TN^K meets pausals and non-pausals close to each other in a single context, such as 1M 19 Dae"LaeTh <7f> in v. 6 and Daa"LaeTh<sq> in v. 9 for the same object. Obviously, Daa^LaeTh is an effect of <sq> so apparently unconscious. In a few verses and the same context, Pae"ThaX<mn> and Paa"ThaX<sq> appear in the same verse calling the same place by the two word forms. It is wise to avoid strong claims concerning phonological relationship of <ae> and <aa> before counting and evaluating throughout the whole corpus has been made, but instances like this one suggest they could be a single phoneme. Ps 51:2 %aeL_BaTh_Shaa"Bha&<sq> shows a pausal name Bath–shae^bha&. Double forms in names are strange (cf 1M 10 & 11) if phonological. It is stranger, however, to meet apparently two contextual

⁷⁶ This may be surprising but not contradictory. A prominence ‘reduction’ of a foot and a timbre/time ‘reduction’ of a vowel are two different events that may be interdependent in some languages (you cannot reduce a vowel if it was selected for a specific timbre or duration), and independent in others (you can reduce a vowel in a foot still marked up by unrelated means). Any syllable can reduce in Czech including a stressed one (it frequently does).

⁷⁷ What exactly is meant by ‘length’ is a sub-topic of further research. Probably a specific set of vowels. So far it appears that duration plays a more significant role in low vowels, so a combination of multiple factors is assumed.

⁷⁸ These two examples are taken from Randall Buth (2006) *Living Biblical Hebrew* (Jerusalem, p:177 fn21 and p:141 fn13). Please note he analyzes “vayyómer” and “vayyomár” on p:178 fn23 in the exactly opposite way: the latter as the pausal form based on accent categories and syntax (whether or not nominal constituents can follow). Of the cited examples, Ruth 2:11 seems to support his claim the most (unless WaJJOO"MaeR<mn> Laa"H<zq> can be taken as a unit) while Jon. 2:3 appears that it could well be wajjooma^r just as it is WaJJOO"MaeR<rv>.

forms of a single word that coincide with a word that can clash with its meaning, such as *Laa"Kh<zq> ~ L:Khaa"<mn> ~ LLaa"Kh<7f>* in 1M 23:11 which all mean the same person (Abraham) even though *Laa^Kh* is a regular feminine elsewhere (such as 1M 20:16 *Laa"Kh<p\$>* to Sarah, 21:16 *LLaa"Kh<mn>* to Hagar, 35:17 *Laa"Kh<7f>* to Rachel; the overlay of m. and f. is quite frequent).⁷⁹ Both *L:Kaa* and *LaaKh* in a single verse, utterance and person are found again in 1M 18:25—*Xaa"LiLAa<qd> LL:Khaa"<gr> ~ (the clause goes on) ~ XaaLi"LAa <mn> LLaa"Kh<zq>* (another clause ends). Also 1M 33:9, 4M 18:10-11, 5M 8:13, 1Sam. 10:7, 1Kings 21:3-4 (paraphrasing) and Ps. 120:3⁸⁰ offer a similar picture. It appears the pausal was perceived as pause-inducing and induced.⁸¹ One could speculate that iambs and trochees could switch over a hypothetical ***lakha*, from which both *laakh* and *l:khaa* would be derived naturally and unconsciously by an accent pattern⁸² (2M 34:18<sq> vs 22<zq>). Pausals' availability caused a word to be repeated to sometimes repeat in another form rather than the same one. The *%ae"BhaeN<mn> Waa%aa"BhaeN<at>* in 5M 25:13 is to pattern *%eEPhAa" <mn> W:%eEPhAa"<at>* in the next v. 14 but the v.13's form duality is not repeated in v. 14. The form is unsubstantiated morphologically if *%ae~* and *%aa~* did make a difference, and if so it were counter-productive as it would make perception of such twins harder and probably had authors to avoid such couples (either by trying to place the word out of a position that demanded a pausal, or by using there a word whose pausal is phonologically identical or only inconspicuously different). The direct speech in Nah 2:9 *&iM:DhuU"<mr> &aMoo"DhuU<7f>* repeat the same imperative "Stand! Stand!" though the stress makes it appear as if it were two different forms while they are the same. Either the vowels at their respective places are non-phonological variants perceived identical, which is harder to believe than with *%ae~* vs *%aa~* above, or the forms are perceived identical in spite hearing otherwise (i.e. even if varied by phonemes). Noting the two patterns, *xxX* and *xXx*, what may spare us some troubles is the concept of a prominent foot that remained accented regardless if the stress was on the ultima (in context) or the penultima (in 'pause' i.e. in a cadence). This is what was observed on the ***lakha* pronoun and can be seen on other pronouns, too, such as *%:aNiI"<tv>* (contextual) and *%aa"TTAa<at>* (pausal) in 1M 27:32 beside a pausal *%aa"NiI<7f>* (but emotionally strong) in v. 34 and *%aa"NiI<rv>* (less emphatic but strong for a different reason) in 31:52. The other pronoun in 27:32 is identical to one in 29:14, *%aa"TTAa<at>*, but the next v. 15 offers *%a"TTAa<zq>*, also trochaic, but less emphatic (speech goes on); see both in Ps 76:8. A couple joining a pausal to a contextual is found in 31:44, *%:aNiI"<mn> Waa%aa"TTAa<at>*. It all seems to depend much on melodemes, which in turn hinges around the issue if they are accents of finely graded strength, or genuine prosody marks (see *iiB1c*). If the marking is more or less formal at places (regardless if they mark syntax by strength or prosody), 'pausals' may give the same impression of being more or less formal. Comparing 1M 17:1 *_%ee"L<mn> ShaDDa"J<zq>* with 2M 6:3 where the name is repeated as *~%ee"L<mn> ShaDDa"J<at>*, it suggests the pausal-or-not can be a slightly formal, melodeme-dependent difference. In 1M 17, the name concludes a clause and another clause begins immediately after it. Still, as the melodeme is only *<zq>*, the form is non-pausal (just as in 1M 35:11 where it stands under *<p\$>* though ending a clause and unlike 1M 48:3 *<mr><tv>* clearly inside a clause just as in Job

⁷⁹ It is unclear to me what actually Ephron the Hittite offered Abraham: Was it a refusal to split a package deal of the field and the cave, or did he initially intend to make both a gift? The former seems more probable, so a major accent should be on "the field" *<p\$>*, and "give to you" *<mn><zq>* only conclude. (One can think of a real pause there, a literal justification of *Laa"Kh<zq>* 'pausal'.) The next clause becomes then only an expected follow up (*L:Khaa"<mn>*), with the Ephron accenting his pre-final *LLaa"Kh<7f>* (pause again) to conclude his bid. Please note the pausal *LLaa"Kh<7f>* (with a *dagesh euphonicum* unlike the one with *<zq>*) is not final, two full words prior to *soph paasuq*, and still it is in its pausal form already. Was it meant to imply a literal pause? It seems so.

⁸⁰ The pausal *Laa"Kh<rv>* (*rv* is the main divisor in verse here) appears to disambiguate if (the ones having) the deceitful tongue are addressed (as most translations render it, correctly in my view), or if the "deceitful tongue" is to be integrated in the sentence (fewer, older versions). If a lector makes a pause, the listeners will hear the former.

⁸¹ Please note shifting the stress one syllable back in the 2nd *XaaLi^LAa*. It may be *nasog axor*, a semi-mechanic device to keep accents distinct, or it may be interpreted as a pre-pausal trochee, suggesting whole phrases need be taken in consideration for prominent feet, not just a final melodeme (here the *<mn><zq>* unit, not just the *<zq>*).

⁸² The feminine might have unsurprisingly been ***laakhi* with *~i* dropped but retained in a *k#* dialect of 2Kings 4 and a few more places (cf Gesenius §32h), e.g. v. 2 *_LkI* pointed by the Masoretes as *Laa"Kh(J)<7f>*, unlike v. 3 *L:Khil"<qd>* (NOT *<p\$>* as Groves-Wheeler Westminster Morphology and Lemma Database (rel. 3.5) CCAT / J. D. Price believe) which needed an iambic foot. See also v. 3 *_ShKhNKI* (*q# Sh:KheeNa"iKh(J)<at>* perhaps for a *k# ShiKhNaaKhil*), v. 7 *NShIKI q# NiShJee"Kh(J)<at> k#? NiShJeeKhil* and *q#uBhaaNa"JiKh(J)<zq>* for *k#? B:NeEKhil* and v. 16 *%a"TT(J)<7f>* (and v. 23; 8:1 *<mn>*) for *k# %aTTiI*. The shwas were obviously silent ends.

13:3 and Ezech. 10:5). In 2M 6, however, though it stands at an end of a clause, too, the next one is connected by W:-, but the melodeme is <at>, which itself may trigger a 'pausal'.

(ii) Apparently conscious selections of 'pausal' forms:

On the other hand there are instances where a conscious selection between a 'pausal' form and a non-pausal one appears obvious. That should be of prime interest to phonology as conscious selections do imply a meaning. It is not rare that the pausal %aa^RaeC appears under lesser melodemes and on the other hand the non-pausal %ae^RaeC is found under cadential melodemes which might be expected to trigger pausals but they obviously do not. Kelley | Mynatt | Crawford 1998 mention BHS Mp to 5M 32:13 pointing to 14 instances of %aaraec under <zq>, <sg> or <rv> and 4 non-pausals in turn under <at> and <sq>. They are Ps. 35:20; 48:11 (<at>s do halve the verses); Prov. 30:14 (<at> is 2nd after <olJr>), 21 (a halving <at>) according to Mm 1234. The pausals include Is 14:9,21; 33:9; 44:23; 49:13; 51:13,16; 52:10; Jer 9:18; 16:19; 31:8 (please note Mee%ae^RaeC<mn> in the same verse); Zach 12:1; Ps 44:4 (<Rv> is not halving). %aa^RaeC<at> is found in 48 instances and %aa^RaeC<sq> is 49 times according to Ginzburg (1880) *The Massorah* IV:129 #1097, and Even-Shoshan p:113 #127ff. It can be supposed articulated Haa%aa^RaeC made it waver (but 58 is %aa^RaeC by BnaA). The locative %aa^RCAa (pausal) vs %a^RCAa shows, however, consistent distributions both under <at/sq> and lesser ones as expected.⁸³ Wavering can be claimed if no regularity is perceived (so far) but if there is a pattern, no such term is in place. "Eternity" is &aDh, &:aDheE and %aeDh with quite consistent occurrence. The most frequent is &aDh (homophonous with a preposition) including Laa&a"Dh<sq> both in and out of pause. Another pausal form is &aeDh with a specific distribution: (&ooLaa^M) Waa&ae"Dh<sq> / <at>, 12 times.⁸⁴ (The few instances of &:aDeE &aDh do not concern pausals.) It could be explained with stylistic variation (of dialectal or whatever source, but not directly dialectal as Ps. 21:5,7 has them both). It may be assumed (lacking further evidence) that e.g. the name of the Philistine town of GaTh is never rendered as +gaath though it did come under <sq> and <at> several times (e.g. 1Sam. 21:11). As the two vowels may be considered phonologically different (a conclusion of *PMH I*), the avoidance of <aa> may be thought conscious.⁸⁵ Rarely, a pausal can have a specialized meaning (%:aDhooNaa^J).

Interesting usages are examples of pausal forms under lesser melodemes than <sq/at> in words that do not waver and no stylistic variations need be considered.⁸⁶ Attention should be paid especially to instances where pause melodemes are occupied with non-pause or indifferent words (making thus the impression a pause impact was moved, which applies to indifferent words under <sq/at>, too). 3M 21:10 JiPhRaa"&<zq> should normally be jiphra& while _HaBB:GhaaDhil"M<at> shows no alteration (and cannot do). It appears that JiPhRaa"&<zq> carries a natural emphasis regardless the <at> break if it brought about a pause or not. It can illustrate that melodemes and vocalization have to cooperate.

It should be also checked for instances where a non-pausal and pausal melodemes form a unit with a pausal main word under a non-pausal melodeme and vice versa under a more formal word concluding the unit. An example is worth (exceptionally) re-quoting from *PMH I* F3.4.3 (11):255—1Kings' 14:2 &aL_Haa&aa"M<mr> HaZZAe"<sq> for an evidence a pausal concerned the whole syntagm, not an individual word as there the pausal is found under <mr>, not under <sq>. Raa"Bh<7f>, not RaBh, is found in 4M 21:6. The <sq> is on Israel, but a semantic emphasis in the <7f><sq> unit is on <7f>.

4M 23:24 has # HaeN_&aa"M<p\$>, not exactly unified with the following <mn><zq> but linking to it, and starting the verse (#), so <p\$><mn><zq> may be felt a unit. Ezech. 26:16 JiLBaa"ShuU<p\$> is a pausal (in place of jilb:shu) reflecting earlier JiPhShoo"7uU<at> (instead of jiphsh:7u); see also the next JeeShee"BhuU<zq>, all of which helps to grade the message. In 3M 8:23, # WaJiShXaa"7<Sh>| increases expectations by a pause right at opening a scene. In 3M 5:18, _ShaaGhaa"Gh<tv> halves the latter portion of the verse following <at> (the earlier milestones HaCCOO"N<tv> and HaKKooHee"N<at> cannot differentiate pausals). Another JiLBaa"Sh<rv> in 3M 16:4 is just a minor point among instructions, exactly fit for <rv>. In 5M 13:6 in turn JuUMaa"Th<rv> is a salient <rv> as the <at> is far from it. It is in my view more important to pause there than at another <rv> and <zq> before <at>. This

⁸³ Apart from Jer. 51:2 where, however, %aeTh_%aRCAa"H<at> is no locative at all, just as vv. 47 and 52.

⁸⁴ Waa&ae"Dh<sq> is 2M 15:18; Mich 4:5; Ps 9:6; 45:18; 52:10; 104:5; 119:44; 145:1,2,21; <at> Ps 10:16; 21:5; 45:7; and 48:15. Laa&a^Dh is in Is 30:8 <7f>; 64:8 7f; Job 19:24 rvMg; Ps 9:19 sq; 19:10 olJr; 21:7 at; 22:27 sq; 37:29 mn; 61:9 at; 89:30 mn; 111:3 sq; 111:8 mn; 111:10 sq; 112:3 sq; 112:9 at; 148:6 mn; Prov 12:19 at; 29:14 mr; 1Chr. 28:9 sq; obviously under all kinds of melodemes.

⁸⁵ Checking the vocabulary for conflicts would be easy but inconclusive as the TN^K vocabulary is only a fraction. On the other hand, DhaMMaa"5aeQ<sq> in Song 7:5 varies from the usual DaMMaa^5aeQ as in 1M 15:2 <mr>.

⁸⁶ Some TN^K editions mark them out, e.g. with * and a footnote, so collecting them can be easy.

is how pausals and cantillation cooperate in shaping a manner of uttering that is the most appropriate. 2Kings 4:39,40 is another such instance: A lively story pauses at JaaDhaa"&uU<sq> (for jaadh:&u^), then Caa&aa"QuU<rv> (for caa&:aqu^), though the latter 'accent' is a lesser disjunctive (higher ones were needed for the quoted cry; so as, in my view, not to make pauses, but shape the contour). Ezech. 44:5 instruction might be easier to listen to if chunked by melodemes including at Sh!:Maa"&<rv>. It might be assumed <7f> finds less opportunities to pause given that its position is close to a stronger 'accent' but examples found have been quite a few. 3M 27:10 reads B:Raa"&<7f> %oO_Ra"&<mn> B:7oO"Bh<at>, the two forms side by side make <7f> intone on a par with the following <at>. 4M 9:2 %aeTh_HaPPaa"SaX<7f> (such as in v. 4 ~<sq>) raises <7f> to the most salient point in the verse which it is (unlike e.g. %aeTh_HaPPae"SaX<pz>, perhaps over B:MoO&:aDhoO"<sq>. The like is at %aePhRaa"JiM<7f> in 13:8 (no <at> there). No such reasons, however, are seen in 5M 9:14. Actually, the ~<sq> appears to be the point there which WaaRaa"Bh<7f> immediately approaches to. Perhaps, the pausal should make the lector pause to make the point (MiMMae"NNuU<sq>) the more salient. It would receive a prominence anyway as any word in front of #, so making a dramatic pause just before is a good idea. Somewhat similar reason might be for TeeLee"KhuU<7f> in 5M 13:5, pausing at the start of more important verbs (~<at>~<p\$>~<zq>~<7f>~<sq>). The most frequent pausals under minor disjunctives⁸⁷ seem to be the ones under <zq>. In 1M 12:29, 5aaRaa"J<zq> (for 5aaRa^J) is the more important <zq> of the two following <at>, similarly so for %aeSh%aa"Bh in 24:19 and, in 25:23, for Jae,%:eMaa"C<zq> and LaaQaa"X<zq> in 27:36 (the one quoted for WaJJOO"Maer<pz> H:aKhil <tl> ~ WaJJOOMa"R<Zq> H:aLOO_ problem above). The already mentioned issue with l:khaa^ vs laa^kh for the same person is compounded by Laa"Kh<zq> where nothing but semantic interpretation must have had the Masoretes to recommend laakh (a regular f.) for the pausal reading of m. pronoun. If pausals had not been living and comprehensible to general audience in the times of the Masoretes, such pointing would be hard to expect. How to explain TiZZaaKhaa"R<zq> in 2M 34:19 if <aa> was not longer than <ee> (and perhaps of anae value)? In 3M 5:23, GaaZaa"L<rv> ~ &aaShaa"Q<zq> suggest slow reading of a legal document, just as the instructions at 3M 13:23 for Phaa5aa"ThAa<zq>. 3M 17:3 has the same word twice, JiShXa"7 under <gr> and more accented JiShXaa"7 under <zq>. It is not so in BHS but Rabbinical Bibles show it and confirm with a footnote. Perhaps it derives from #R (that compiled many now unavailable mss). My poor quality copy of #R unclearly appears to confirm it, too. I insert pictures for the reader to check for oneself: ▶  The next verse, 4, seems also to be semantic in placing ShaaPhaa"Kh under <zq>, just as it is with ThiQRaa"Bh<zq> in 18:14, and in 27:11, 20. While &aeRK:Khaa"<rv> in 27:3 is regular (also ~<p\$> but it joins to the next <zq>) it is Mee,&aeRKae"Khaa<zq> in v. 8. In 4M 1:17 one meets JiSSaa"&uU<zq>. It might seem it just made the pausal echo the earlier (vv. 9, 16) and later (v. 24) JiSSaa"&uU<sq> but that is not so: v. 31 has a regular JiS&uU"<7f> in the same instruction set and reflected later in 2:34 NaaSaa"&uU<zq>, another form of the same verb, in pausal again. In 9:23 (with JiSSaa"&uU again, in <at>), the pausal ShaaMaa"RuU<zq> makes the story count point by point just as we have seen with legal texts and instructions earlier. Pausals do not appear as mechanically triggered by cantillation marks in the places quoted here. When 4M 13:2 TiShLaa"XuU<zq> was opted for instead of tishl:xu^, it is at a point that seems the most appropriate for a sentential accent (though the words go on). On the other hand, some places, such as 4M 18:20 ThiNXaa"L<zq>, seem to attach only lower prominence to pausals. The need to mark prosody in more detail using other means cannot be avoided. These would hardly be sufficient. At times, only slowing down the pace might have been a reason: In 4M 23:18, there is a conspicuous form uU,Sh:aMaa"&<zq> as if the Masoretes recommended shamaa^& instead of the usual sh:ma&. The language that follows is archaic (Bileam is quoted) and might have been hardly comprehensible if run over too quickly. At other times, placing a pausal under <zq> appears most natural when it is the next position in importance below <sq> and <at>, such as 5M 16:16 JiBhXaa"R<zq>. Sometimes, the two forms occur close to each other, such as _ThiZRaa"&<mr> ~<7f> ~ TiZRaa"&<zq> ~<7f> in 22:9, indicating it was important to mark out and perhaps not entirely automatic (otherwise it could be left out). The forms must have been clearly distinct in some verbs, such as ShaaMee"&uU<zq>, Judg. 2:17 (unlike the regular shaam:&u^), so saying the other form must have been audible. Attention must also be paid if the meaning is indicative, or volitive (e.g. 2Kings 4:42 W:JOOKhee"LuU<sq>, v. 43 ~<zq> whereas v. 44 WaJJOOKh:LuU"<mr> is a non-pausal indicative).

⁸⁷ I had to rely on my excerpts and could not draw exact figures from the BnaA program as the output available at the time of writing this had not the quality yet for such research. (No morphology was tagged to the verbs.)

B1c Suprasegments

The antecedent dissertation had to cut off the melodeme iF3.4.3 article rather abruptly. Here is the list of melodemes that have already been covered and the ones to be treated here on.

			system	num. code	where to find	pages	
sq	silluuq		21, 3	2.1.1	iF3.4.3 (1)	235–236	1
at	%athnaax		21, 3	2.6.1	iF3.4.3 (2)	236–237	2
sg	s:ghooltaa		21	2.7.3	iF3.4.3 (3)	237–238	3
zq	zaaqeef qaa7aan		21	2.7.2	iF3.4.3 (4)	238–240	4
Zq	zaaqeef gaadhool		21	3.1.1	iF3.4.3 (4)	238–240	5
rv / Rv	r:via& qaa7aan / gaadhool		21,3 / 3	2.7.1 (3.7.1)	iF3.4.3 (5)	240–242	6
rvMg	r:via& mugrash		3	2.7.1 4.2.1	iF3.4.3 (7)	245–249	7
ga	garsha		3	4.2.1	iF3.4.3 (8)	249–251	8
gm	gaershajim		21	3.2.2	iF3.4.3 (9)	251–252	9
gr (az)	gaeraesh (%azlaa)		21 (3)	3.2.1	iF3.4.3 (9)	251–252	10
tv	t:viir		21	3.2.7	iF3.4.3 (10)	252–254	11
mk	meer:khaa k:fulaa		21	3.2.4	iF3.4.3 (11)	254–256	12
mr	meer:khaa		21, 3	3.2.3	iF3.4.3 (11)	254–256	13
7f	7ifxaa		21	3.3.3	iF3.4.3 (12)	256–258	14
7r	7arxaa		3	4.3.2	iF3.4.3 (12)	256–258	15
dx	d:xii		3	4.3.1	iF3.4.3 (13)	258–260	16
oolJr	&oolae w:jooreedh		3	4.4.1 4.2.2	iiB1c1	68–70	17
mrLg	meer:khaa l:gharme		21	3.2.3 3.1.2	iiB1c2	70–72	18
dr	dargaa		21	3.3.5	iiB1c3	72	19
drLg	dargaa l:gharmee		21	3.3.5 3.1.2	iiB1c4	72–73	20
pz	paazeer		21, 3	3.1.2	iiB1c5	73–76	21
qd (az)	qadhmaa (%azlaa)		21 (3)	3.3.1	iiB1c6	76–77	22
azLg	%azlaa l:gharmee		3	3.3.1 3.1.2	iiB1c7	77–78	23
p\$	pash7aa		21 (3)	3.3.2	iiB1c8	78–79	24
mj	maaj:laa		21	3.3.4	iiB1c9	79–80	25
mh	mahpaakh / m:huppakh		21 / 3	3.4.1	iiB1c10	80–82	26
mhLg	m:huppakh l:gharmee		3	3.4.1 3.1.2	iiB1c11	82–83	27
jt	j:thiiv		21	3.4.2	iiB1c12	83–84	28
sh	shalshaelaeth q:7annaa		3	3.4.3	iiB1c13	84–85	29
Sh	shalshaelaeth (g:dhoolaa)		21, 3	3.4.4	iiB1c14	85–86	30
mn	muunax		21, 3	3.5.1	iiB1c15	86–88	31
mnLg	muunax l:gharmee		21	3.5.1 3.1.2	iiB1c16	88	32
il	&illuuj		3	3.5.2	iiB1c17	89	33
ilLg	&illuuj l:gharmee		3	3.5.2 3.1.2	iiB1c18	89	34
gl	galgal / j:rax baen joomoo		3 / 21	3.6.3	iiB1c19	90	35
ahOl	%athnaax haaphuukh+&oolae		3	3.6.4 4.4.1	iiB1c20	90–91	36
zr / cn	zarqaa / cinnoor		21 / 3	3.6.1	iiB1c21	91–92	37
ct	cinnooriith		3	3.6.2	iiB1c22	93	38
mrMc	meer:khaa m:cunnaeraeth		3	3.2.3 3.6.2	iiB1c22.1	94	39
mhMc	mahpaakh m:cunnar		3	3.4.1 3.6.2	iiB1c22.2	94–95	40
Tl	t:liishaa g:dhoolaa		21	3.8.2	iiB1c23	95–96	41
tl	t:liishaa q:7annaa		21	3.8.3	iiB1c24	97	42
qp	qarnee phaaraa		21	3.8.4	iiB1c25	97–98	43

The names separated by / refer to the system of 21-books or 3-books, respectively, though differences between them do not appear substantial, the less so in the present theory that claims a fundamental unity of the two systems. The name %azlaa will be used only in %azlaa l:gharmee, otherwise it will be avoided as it may refer to qadhmaa or to gaeraesh (“qadhmaa w:%azlaa” means <qd><gr>, not <qd=az>) in different traditions. The melodemes that differ in disjunctive vs conjunctive power (e.g.

7ifxaa, 7arxaa) will be distinguished in spite of using the same mark. If the difference is less marked (e.g. *r:via& qaa7aan* vs *gaadhool*), using just one symbol (such as <rv>) seems adequate for both in many instances (for <rv> and <Rv>⁸⁸). Quite a few more names exist in use, increasing the differences between the four main traditions. There is not much use in compiling a list of all⁸⁹ as their explanatory power is minor in the better cases. Melodemes *l:gharmee* recognized by the present theory are more than syntactic interpretations need. The reason is that all combinations with | have to be analysed for intonation (even if some are rejected later) with no filtering by earlier syntactic criteria.⁹⁰

The F3.4.3 article in *PMH I* had slightly different, additional though well compatible selection and ordering criteria. It had been clear before p:235 was reached that all melodemes could not be included for spatial and temporal reasons. Consequently, the melodemes eligible for *PMH I* were those that were able to represent best the main idea of the manner the MsH intonation was being interpreted in *PMH*.

The selection criteria for *PMH II* in turn are simple: to cover the rest; and the ordering can be guided by the content and practical regards. As the content of the melodeme symbols is associated with their shapes, a practical ordering might be shape-related, too. Graphics of the symbols shows a few general types which often differ by their placement and orientation in the line (apart from having been called by different names and assumedly having different usages).

- | (1) a *maethaegh* type (a *metegis* is not a melodeme but its general shape is a vertical stop)
symbols: *silluq*, a component in *zaaqeef gaadhool*, *shalshaelaet g:dhoolaa*, a *paasaeq* sign in *l:gharmee* melodemes, *paazaer* (though it could also be a *jooreedh* type melodeme, see below)
- / (2) a *jooreedh* type
symbols: a component in *&oolae w:jooreedh*, a component in *t:vir*, *gaeraesh*, *garshaa* (i.e. also in *r:via mugrash*), *gaershajim*, possibly *paazeer* (if not a *maethaegh* type), a component in *t:lishaa g:dhoolaa* (also *qarnee phaaraa*), *meer:khaa* (i.e. also its respective *l:gharmee*), then also *meer:khaa k:fulaa*, *meer:khaa m:cunnaeraeth*, *dargaa* (then also the respective *l:gharmee*)
- \ (3) a *qadhmaa* type
symbols: *%azlaa* (hence also the respective *l:gharmee*), *7ifxaa*, *7arxaa*, *pash7aa*, *d:xi*, a component in *t:lishaa q:7annaa* (that is also in *qarnee phaaraa*), *maj:laa*
- < (4) a *&oolae* type
symbols: *&oolae w:jooraedh* (i.e. also a combination of this following *%athnaax haaphukh*), *mahpaakh* (hence also the one *l:gharmee* and the one *m:cunnar*), *j:thiv*, the two *shalshaelaeths*
- ┘ (5) a *muunax* type⁹¹
symbols: *muunax* (hence its respective *l:gharmee*), *&illuuj* (hence its respective *l:gharmee*)
- ^ (6) an *%athnaax* type
symbols: *%athnaax*, *%athnaax haphux* (hence also *galgal*), *zarqaa* (also *cinnoor*), *cinnorith* (that is also *meer:khaa m:cunnaeraeth* and *mahpaakh m:cunnar*)
- (7) a *r:via&* type
symbols: *r:via&*, also *r:via& gaadhool* and *r:via& mugrash*, the two *zaaqeefs*, *s:ghooltaa*, *t:vir*
- (8) a *t:lishaa* type
symbols: both *t:lishaa g:dhoolaa* and *q:7annaa*, *qarnee phaaraa* (i.e. '*paazeer gaadhool*')

As the historical stages suggested in *PMH I* p:232–234 (I, II, III, IV in F3.4.2) are only hypothetical and too broad, also as the categorization by Samuel Bohlius from 1636 into four classes of disjunctives does not appear to suit well to the intonation theory, and as the systems of 21 and 3 books seem better to be viewed as two different systems of using basically identical melodemes (two kinds are not much, anyway), therefore a graphical sorting commends itself as clear, obvious, independent of hypotheses

⁸⁸ A distinction can be made only in the 3-book system if a “small” <rv> stands close to <olJr> (<rv>, possibly after <cn>, after <Rv>, <Rv>...). Also <at> can close a (sequence of) <Rv>. All else and all in the 21'b system are <rv>. In most instances, a <rv> is common including the strongest one, a “king” <rv> in place of <at> in the 3'b system.

⁸⁹ Interested readers may refer to en.wikipedia.org/wiki/Cantillation#Different_naming_according_to_rites (3. 10. 2016).

⁹⁰ Even “standard” combinations such as <azLg>| cannot always reach a clear-cut distinction from <qd>|.

⁹¹ Graphics might make the impression it is a variant of the *&oolae* type, nevertheless functions do not confirm it and shapes in the oldest extant mss do not suggest it either. Even when the / looked almost perpendicular, the *munaxim* and *&oolim* were always curved. *Shophar hooleex*, ‘a horn joined on’, was another name for the *munax*.

and theories, and favourably multiple. Additionally, it can be combined with historical stages suggested in *PMH I* F3.4.2. This melodeme presentation acquires by it an ordered structure resigned on in *PMH I*.

I	the rudimental stage:	cohesion symbols	to code as	1.type.diff	in the numbering
II	the primary stage:	phrasal melodemes		2.type.diff	suggested
III	the secondary stage:	intonation melodemes		3.type.diff	below
IV	integral stage:	3-book melodeme system		4.type.diff	

I-IV 1-8

... i.e. stage and shape combined

... and applying it, we get:

1.0	-	<i>maqqeeph</i>	
1.1		<i>paasaeq</i>	
2.1.1		<i>silluq</i> <sq>	
2.6.1	^	<i>athnaax</i> <at>	
2.7.1	•	<i>r:via& qaa7aan</i> <rv>	(note that [•] <i>r:via& gaadhool</i> <Rv> is 3.7.1)
2.7.2	˙	<i>zaaqeeph qaa7aan</i> <zq>	(note that [˙] <i>zaaqeeph gaadhool</i> <Zq> is 3.7.2)
2.7.3	˚	<i>s:ghooltaa</i> <sg>	
3.1.1		<i>maethaegh</i> <,>	
3.1.2		<i>l:gharmee</i> <~Lg>	
3.7.1	•	<i>r:via gaadhool</i> <Rv>	
3.7.2	˙	<i>zaaqeeph gaadhool</i> <Zq>	
3.1.2	˘	<i>paazeer</i> <pz>	
3.2.1	˘	<i>gaeraesh</i> <gr>	
3.2.2	˘	<i>gaershajim</i> <gm>	
3.2.3	˘	<i>meer:khaa</i> <mr>	(a component [˘] <i>m:cunnaeraeth</i> <~Mc> needs an additional code)
3.2.4	˘	<i>meer:khaa k:phulaa</i> <mk>	
3.2.7	˘	<i>t:bhiir</i> <tv>	
3.3.1	˘	<i>qadhmaa</i> <qd>	(sharing the code with [˘] <i>%azlaa</i> <az>)
3.3.2	˘	<i>pash7aa</i> <p\$>	(a repeated [˘] <i>pash7aa</i> has the same code)
3.3.3	˘	<i>7iphxaa</i> <7f>	(note that [˘] <i>7arxaa</i> <7r> is 4.3.2 despite being visually identical)
3.3.4	˘	<i>maj:laa</i> <mj>	
3.3.5	˘	<i>dargaa</i> <dr>	
3.4.1	˘	<i>mahpaakh</i> <mh>	
3.4.2	˘	<i>j:thibh</i> <jt>	
3.4.3	˘	<i>shalshaelaeth q:7annaa</i> <sh>	
3.4.4	˘	<i>shalshaelaeth g:dhoolaa</i> <Sh>	
3.5.1	˘	<i>muunax</i> <mn>	
3.5.2	˘	<i>&illuj</i> <il>	
3.6.1	˘	<i>zarqaa</i> <zr>	(which is [˘] <i>cinnoor</i> <cn>)
3.6.2	˘	<i>cinnorith</i> <ct>	(so [˘] <i>meer:khaa m:cunnaeraeth</i> <mrMc>, [˘] <i>mahpaakh m:cunnar</i> <mhMc> are composite)
3.6.3	˘	<i>galgal</i> <gl>	
3.6.4	˘	<i>athnaax haphux</i> <ah>	
3.8.2	˘	<i>t:lishaa g:dhoolaa</i> <Tl>	
3.8.3	˘	<i>t:lishaa q:7anna</i> <tl>	
3.8.4	˘	<i>qarnee phaaraa</i> <qp>	
4.2.1	˘	<i>garshaa</i> <ga>	(also as a component [˘] <i>mugrash</i> <~Mg>)
4.2.2	˘	<i>jooreedh</i> <Jr>	
4.3.1	˘	<i>d:xi</i> <dx>	
4.3.2	˘	<i>7arxaa</i> <7r>	(note that [˘] <i>7iphxaa</i> <7f> is 3.3.4)
4.4.1	˘	<i>&oolae</i> 	(a component of [˘] <i>&oolae w:jooreedh</i> <olJr>)

Apparently the two highest position numbers are systematic, the third position codes a supplemental shape or is sequential. It has the effect of sorting melodemes by their main role (from which a historical stage is hypothesized) and their main shape. The lowest position is only an auxiliary differentiation (a shape code and an order squeeze in a single position indiscriminately). Since some melodemes are to both stand alone, and combine, the number of codes does not correspond to the number of symbols.

Additionally, not all cantillation lists recognize and include all symbols. That is why such a systematic coding is more flexible than a simple order: codes can add or drop as needed without disturbing the logic and sorting. One can e.g. introduce systematic analytic distinction of *qaa7aan* and *gaadhool* symbols, differentiate *%azlaa* and *qadmaa* or a repeated *push7a*, establish *revia& mugrash* as a single code, make *7iphxaa* and *7arxaa* identical or analytically to break down *t:vir* in two codes, one can introduce explicit distinction of sublinear and supralinear symbols (all that would be hard in a continuous numerical sequence). The numerical coding can be advantageous also in other systems, be they variants of Ms symbols, or need they augment for numbers of entirely different elementary shapes. The present processing makes no use of the codes so far, a simpler form is opted for, but considering the present theory disregards the established Bohlian categories to introduce a fundamentally different concept of melodemes, so it is desirable to set the four dozen symbols in some order. Here is one that can be an initial proposal to alter, trim down or tune up. And the sequence makes a sense as it is.

The order will most probably see rearrangements later (provided the theory is not finally refuted as a whole). It can be expected mainly since both *PMH II* and *I* have considered only intonation (apart from the concept of cadence, which includes tone, timing and amplitude). More probable is, however, that the “melodemes” were actually complex structures controlling more parameters apart from the pitch, such as rhythm, rate, and possibly also emotions (graphics is able to convey that aspect very well). To include these into a theory of melodemes, it requires to compare and test meanings, which is possible but quite demanding, given the great number of melodemes⁹² multiplied by the number of possible interpretations where the meaning can be disputed. Quite a few competing combinations can emerge for a single melodeme and only IT (a corpus, a TTS, a db) can help find a path through the maze. At this stage, only intonation (in its broadest sense) is considered, recognizing it is a first stage of the research.

The next candidate parameter for consideration can be selected by a simple question. What Psalms, Proverbs and Job might have needed more than intonation? **Rhythm**. Though the three differ in genre (Psalms are songs, Proverbs are... proverbs, Job is in epic verse), reciting each one in a way that would not kill the word, it demanded for the reciter to find, keep and switch the correct rhythm. Ugaritic literature seems to confirm the primary ‘rhythm’ of old Semitic poetry consisted in repeating units of meaning rather than sound (temporal or segmental ones), cf Pardee 1981. Sound rhythm was probably only secondary and adapted to the particular manner of presentation as needed by music or declamation. Hebrew as well as other Semitic tongues used to have variable syllabic structure, with some vowels able to get reduced to different degrees (so that syllables could vanish or prolong) probably depending both on a grammatical accent (construct state) and a sentence position (pausals) as well as the presence and/or strength of emphasis and the overall speech rate. The place of accent could switch between two adjacent syllables in some words depending on emphasis. The Masoretic stress system suggests the secondary stresses (theoretically every second pre-stress syllable) could either be disregarded, or in turn get an intonation at times which was similar to the cadence of some main stresses. (In graphics, a melodeme sign shows in a place of *metheg*, giving the word two melodemes.) If additionally some words could stand either with a stress or without any at all (in graphics, joined with a *linea maqqeph*), old Hebrew might have been very variable sound material. Changeable numbers of syllables and stresses, sometimes including their positions, would make possible fairly many rhythmic variations of a single phrase. If the rhythm did not emerge automatically from wording, codifiers had to resort to explicit details. Tested should be then if the 3'b system is rhythmic rather than poetic. (The 21'b texts contain much poetry, too, and in fact, poetry par excellence such as the Song of Songs.) The research has a good point to start from as Ps. 18 and 2Sam. 22 are almost identical with 3'b and 21'b marks, respectively; see iiB2e later.⁹³ Rhythm can hardly be tested, however, without TTS modelling. No human speaker could control all the temporal distinctions.

Syntax, on the other hand, is excluded from meaning hypotheses as a linguistic analysis (see *PMH I* for the argument, too lengthy to repeat here)—but included, to what extent intonation is able to cover syntax, too, not analytically, only intuitively, but no less reliably. By focusing on intonation, the present theory is not anti-syntactic. On the contrary, many arguments finding syntactic data in the Ms “accent marks” can well be raised also in support of intonation. Additionally, intonation explains well the bewildering polysemantism of the “accent marks”. For example, <mhLg> (No. 27 above) can simply be a concluding low rise. Or syntactically a “king” (a level 2 divisor halving the nearer <sq> domain), a

⁹² A search by “<..??>” RegEx in the data produced by the BnaA v1.11 program shows 231,761 tokens (see CD).

⁹³ The original comparison was made in *PMH I* F3.3:226–229. Rhythmical differences have not been considered.

“duke” (a level 3 divisor halving an <at> or an <at>-like <rv> domain) or an “officer” (a level 4 divisor halving the nearer domain of an <olJr>’s halver) in the 3'b system. An <azLg> symbol can be a concluding high rise. Or, in a syntactic theory, a prime halver of a 3'b verse (if the single word is too few for an <olJr>), or one of the weakest halvers (lower than <rv>, <cn> or <dx>) just like one syntactic meaning of <pz> which in turn can also divide two levels up (if the single word is too few for an <at>). These are ambiguities in a single system, 3'b, not including <pz> in the 21'b system where it can repeat on the low level (so it is a divider rather than halver, just like <rv> is a level up or <zq> two levels up). Indeed, some symbols are shared by the two systems but their functions differ in the syntactic interpretation prevalent today. A difference can be so wide as <7f> and <7r>, a 21'b level 2 divisor, and a 3'b linker, respectively. In fact, sequences <7f><mn><sq> and <7r><mn><sq> are indistinguishable at mere sight. Yet the meanings of this visually identical series⁹⁴ is two syntactical units in 21'b and a single unit in 3'b. Given that the two systems are probably not competing since they are found in a single book (Job),⁹⁵ it is hard to imagine how ancient readers could remember and process all those complex rules of an abstract syntactic analysis. If syntax is replaced by intonation (or prosody, more probably), all that looks much simpler. Readers just learned to read the correct prosody, and syntax came out naturally. No analysis was needed as the prosody was meant directly, also possibly indicated by the shapes of the marks, not inferred from any syntactic analysis contained in the marks.

Verses such as 2M 35:12 make one suspect melodemes are no syntactic marking *per se*. Following a sequence of unstressed %aeTh_ and W:%eeTh_, a W:%ee^Th is met with a <7f> in a phrase making a single syntactic unit, an NP, between <at> and <sq># like that: W:%ee^Th<7f> PaaRoo"KhaeTh<mr> HaMMaaSaa"Kh<sq>. It is hard to think of syntactic reasons to single out an %aeTh in the middle of a long list of items (which goes on in the next verses) by means of quite a strong dividing “accent”, <7f>, where no pause is expected, and, at the same time, suppress a noun with a <mr> conjunctive “accent”.

Illustrative can be how 2M 37:24 treated 25:39 which it alluded to by almost quoting. The phrase in 25:39 %ee^Th<mr> KoL_HaK!eeLil"M<7f> Haa%ee,LIae"<sq> i.e. <mr><7f><sq> was made brief in 37:24 into <7f><sq>, viz. W:%ee^Th<7f> KoL_KeeLaE"Haa<sq>. While %ee^Th in 25:39 carries a conjunctive <mr> and the noun is <7f> (the exact opposite of 35:12 shown above), its shorter version in 37:24 had <7f> move from the noun to %ee^Th and drop <mr>. No reasons in syntax are apparent, just as it is in 25:29 vs 37:16 lists of the same order and the same shipment. The former sequence of <mr><7f><mr><sq> got reduced to <7f><sq>. One could ask what syntactic or semantic difference there is to ZaaHaa"Bh<mr> in 2M 25:29 from ZaaHaa"Bh<7f> in 37:16, or 7aa"HoOR<7f> in 25:29 from 7aa"HoOR<sq> in 37:16. They are the same words denoting the same objects. Reasons to switch melodemes can be seen in prosody: The preceding melodic sequence varies as something was inserted in 37:16 unlike 25:29 and also the third item in the order list moved to the end of the delivery list where it was emphasized by word order and, apparently, prosody as it obtained the second <zq>.

Is. 5:30 also suggests the melodemes are not syntactic. The sentence W:HiNNEe_Xoo"ShaeKh<zq> Ca"R<mn> Waa %oO"R<zq> XaaSha"Kh<7f> Ba&:aRilPhaE"HAa<sq># (“...and look, darkness, anxiety. And light has turned dark in its thick clouds”) shows two seeming syntactic breaks: “...and look, darkness”—and then a new syntagm should follow, “anxiety and light”, which is obviously not true as what follows confirms since “has turned dark” etc. does not make more sense in Hebrew as it does in English. The apparently valid syntactic division should be: “...and look, | darkness, anxiety. || And light has turned dark | in its thick clouds ||,” which, however, the melodemes do not follow: “...and look_|_|_darkness<zq>, anxiety<mn>. || And light<zq> has turned dark<7f> | in its thick clouds<sq> || #.” Obviously, the melodeme signs go against the supposed syntactic marking here, showing they are not dependent directly on syntax. Generally, they work in line with syntactic partitioning as much as the partitioning goes in line with speech intonation (fairly well, most of the time). But keeping them as distinct concepts can be helpful for the research since the Masoretic marking appears to be concerned with speech intonation more than syntax parsing. For listeners, it was certainly more practical.

Is. 2:11 starts with &eENeE"<gm> GaBhHuU"Th<mh> (~ <p\$>), two constructs, the first one being under a disjunctive <gm>, which seems to run contrary to syntax. The opposite, major syntactic breaks

⁹⁴ Frequent in both systems. The <7f>.*?<mn>.*?<sq> search in BnaA indicates 11,305 incidents of <7f><mn><sq> in 21'b and 1,061 in 3'b for the <7r> version (in a <7r >.*?<mn>.*?<sq> shape as a DEL was added to 3'b melodemes). In fact, the <7r><mn><sq> is one of the most frequent in Psalms/Prov/Job. Until verification procedures are made ready to confirm or correct the BnaA data, the search results are only estimative, still the figures are high, anyway.

⁹⁵ The <7f> sequence occurs 26 times in the 21'b part of Job, its <7r> double is 289 times in the 3'b portion of it.

under conjunctives or minor disjunctives are multiple and well documented,⁹⁶ so no need to provide an excerpt of my own. Both the former and the latter instances suggest melodemes are not syntax-led.

Is. 6:6 makes apparent melodemes are no ‘syntagmemes’ in a (~ <at>) B:Mae'LQaXa"JiM<az.zq> with two melodemes though it clearly belongs to the following LaaQa"X<7f> (~<mr> ~<sq>)? Such richness of <az.zq> in a word linked simply and straightforwardly to a verb that follows can be well explained if it described a real intonation (slowly uttered clauses, please note short intonation units) but is hard to explain with a concept of syntactic parsing coded in the marks.

Zaqeph earmarked JiS&uU"<zq> in 2M 40:37 to stand out in the sentence while &aDh_JoO"M<7f> Hee&aaLooThoO"<sq># was to be intoned as a whole. A cesure melodeme *atnach* under the previous Hae&aaNaa"N<at> only betrays the earmarking is not syntactic but melodic. *Atnach* concludes only the first clause whereas *zaqeph* closes the whole compound sentence. This again demonstrates the marks noted down something else than syntax, though a proper grammatical structure mostly emerges right since intonation often reflects syntax. But if the marks primarily described intonation, they would occasionally get at variance with syntax. This case seems to demonstrate it, too.

LOO negations have all the same syntactic relationship to their respective verbs. When they appear with different melodemes such as in Josh 23:7, it may be as they make different prosodic units with the verbs: Please note how the first LOO_ is attached to the verb as the prosodic unit is longer and to be uttered swifter (syntax does not care), the second and third W:LOO"<mn> link to a <zq>; as two-word units are slower, but with a bland (neutral) intonation; it seems to drop on the fourth W:LOO"<mr> only to rise again on a verb with a <7f> to prepare for a final descent to the <sq>. All that are solely melodic and rhythmic regards, not syntactic ones.

On the other hand, places are also worth considering where melodemes do not (or not significantly) change in spite of altered syntactic values. We can again turn back to the two long lists of ordered and produced items for the tabernacle as the wording varies very little so as to indicate that “the Israelites did everything just as the LORD commanded Moses” (2M 39:32 NIV). Comparing 26:32a with 36:36a it is interesting to observe that despite a change in grammar, the melodeme configuration have not been rearranged nor revalued. A change of a finite verb (<mn> kept) with its government (%ooThaa"H!<rv> &aL_ to Laa"H!<rv>) and a participial phrase to a verb clause (M:CuPPi"M<mn> to WaJ:CaPPee"M<mn>) integrated in the sequence of events seem to have had no impact. The latter portion of the verse has seen a change of another kind, an insertion of a WaJiCoo"Q<mn> LaaHae"M<zq> clause in place of &aL_ from 26:32. An additional unit of <mn><zq> has not disturbed the rest of configuration. The preceding verse 26:31 and 36:35, respectively, underwent an analogous future to past tense change and an indefinite noun (PhaaRoo"KhaeTh<rv>) got a definite article (%aeTh_HaPPaaRoo"KhaeTh<zq>). Perhaps the latter alteration had a bigger impact, from <mn><rv> to <p\$><zq>. Due to <mn> it can

⁹⁶ James D. Price (2006) *Exegesis and Pausal Forms with Non-Pausal Accents in the Hebrew Bible / A Paper for Presentation at the Southeastern Regional Meeting of The Evangelical Theological Society, March 18, 2006*, has shown on pausal forms that, “in spite of expectations, many pausal forms occur with non-pausal accents” (p:5), which is 875 in his count that included all “accents” apart from <sq> and <at> in the 21 books (p:5 Table 3) and 56 apart from <sq>, <olJr> and <at> in the 3 books (p:19 Table 6). In a few higher melodemes, some incidences could be expected, and indeed, with 618 for <zq>, 96 for <7f>, 22 for <Zq> and 3 for <Sh>, that expectation is covered. Minor disjunctives, however, viz. <tv>, <p\$>, <zq>, <rv> (89!), <gr>, <gm>, <pz>, <mnLg> with their 128 pausals deserve attention and conjunctives (<mn> 6, <mh> 2) cannot be explained by syntax at all. In the 3'b phonosyntax with <olJr> and <at> available for top-parting the verse, there is expectedly less need for deviations like these. Indeed, <Rv>'s 44 supplies most of them. Still, <rvMg> 2, <pz> 3, <azLg> 1 and, please note, <mn> 6 do beg consideration. The essay is explanatory and provides more data that cover the research field well. This is the way phonology should be done. Let me just point to a conclusion that might be lost in the middle of the text: “In support of his law of continuous dichotomy, William Wickes stated: »In certain cases, indeed, the same accent is *repeated* in the division of the clauses; but, from the very nature of the continuous dichotomy, it *loses in disjunctive value* each time of repetition.«⁴⁷ However, the examples in this section, together with many more of like nature with or without pausal forms, have grammatically and musically equal segments set off by Zaqeph; there is no reason to suppose that the second Zaqeph has lesser disjunctive value than the first. In fact, in the example of Exodus 4:21 above, since the first clause is dependent and has a non-finite verb, one could suppose that the first Zaqeph has lesser disjunctive value than the second. In my opinion, a given disjunctive accent **always has the same disjunctive value** musically, but varying disjunctive value syntactically, **regardless of the order** in which they occur.” ^{note 47:} William Wickes, *Two Treatises...* [etc., see iiR]; emphasis [in *italics*] his (p:12), **bold** emphasis mine. What else could be the meaning of “varying disjunctive value syntactically” than to claim that Msh “accents” do not relate to syntax at all? Needless to note that the “law of continuous dichotomy” seems to have been the major bait for syntacticians to embrace the “accents” as a sort of syntactic marking. It fits too well to binary trees, a ubiquitous tool in modern linguistics.

be assumed <rv> had a lower prominence than <zq> (the classical theory agrees) which was opted for when the definite noun was to confirm it was the very item ordered. The rest of the verse was repeated.

Interesting are also instances of a reasonably rich syntactic structure that seems not to be adequately reflected in the melodeme configuration. In 1Sam. 17:40, a 22 syllable queue of mn mn mn pz mn Tl may seem flat whereas, syntactically, the sequence WaJiBhXaR_LoO"<mn> X:aMiShShAa"<mn> XaLLuQeE,_%:aBhaaNiI"M<mnLg>| MiN_HaNNa"XaL<pz> WaJJaa"5aeM<mn> '%ooThoM<Tl> is as developed as 8 words can be.⁹⁷ If melodemes were syntactic marks, the structure should have been indicated. Only prosody can hide it, in the interest of gradation. It is appropriate here: David is about to have a fight of his life and the listener is to be held in suspense.

Narrative suspense, however, is far from dull reading out. The lectors had all reasons to make the message appealing to the ears of the congregation or their students. Singing is one of the means. But not always it is the right thing to do, due to the text, the occasion, the listeners and, realistically, also the skills of the reader. If the text is emotional and should be delivered so, it may be hard to do it by singing unless one is a skilled vocalist. Speech prosody is natural, all it takes is understand, be attentive to pauses and not to hurry over the text. This might be the reason some words have two, or rarely three melodemes. One such place is 1Sam. 20:30, BiHoO"NaaThaa"N<mn.zq>, which makes the reader to slow down at Jonathan to give the emphasis (he is the scapegoat for David). As his father begins to shout at him, L:Bho"ShT:Khaa"<qd.zq> is the first heavy calibre (worse things are to come). Worth noting is that L:BhoSh~ is marked up short, not to be protracted, only to raise the voice (from <qd> to <zq>).⁹⁸ A speech full of anger should not be drawled nor delivered monotonously. (Could it be sung?)

Two melodemes can sometimes appear as three, such as Nae'Xaa'MaaThil"<'ct'mh'rv> though it is in fact <mhMc.rv>. Given, however, that out of 4 syllables, 3 have been marked up, to think of 'accents' seems out of place. On the other hand, this is another word packed with emotions. Syntax can hardly provide reasons for multiple melodemes inside a single word. 'Accents' would seem in place where (and if) they have been displaced as it sometimes happens with too much emphasis. In Job 12:15, W:Ja"HaPh:KhuU<7f> shows an 'accent' mark on the 3rd or 4th syllable from the end (it depends on counting shwa). It is certainly not a regular ultimate or penultimate stress. The Mp just remarks it is unusual without giving explanation. If it is stress fronting, it is for prosody notation to mark it down.

The Approach mentioned that syntactic halving would make every verse have the strongest dividers whereas some of the weak ones could be expected only in long verses. In the contrary there are many short verses with only weaker dividers and the strongest ones absent.⁹⁹ Prov 8:23 <dx><mr><rv><sq># is a clause "In the distant past"<dx> "I was fashioned" <mr> and two explanations, "at the beginning"<rv>, "at the origin of earth"<sq>#. Syntactically, it would not be a problem to insert a cesura. Yet the stronger melodemes were avoided. Job 9:9 is similar and longer by <mr>. Job 32:5 (a prosaic part marked in 3'b manner) is fairly long <mh><rv><mhMc across 2 wd><rv><dx><mr><rv><mr><sq>. Inserting a cesura would be easy. Is 2:18 in turn is simpler, <7f><mr><sq>#, with no halving at all.

B1c1 &oolae w:Jooraedh ↙ <olJr>

This melodeme unlike most others is aptly called, which Wickes 1881 commented as follows: "The name of this accent was doubtless chosen to indicate its twofold melody, in the chanting of which the voice first *ascended* (&LH) and then *descended* (JRD) in the scale" (p:53 fnt 1; also Yeivin 1980 p:265). This claim applies well to speech intonation, too. It is also supported by the shapes of the marks which, by their names, can be established rising in *&oolae* and falling in *jooreedh*. The melody may be heard in Ps. 5:7 You-doom<cn> those-who-speak<ah> liēs<olJr> (Khaa'Zaa"Bh<'ol'Jr>); murderous<mr>, deceitful-men<rv> He-abhors<ct.mrLg>| the LORD<sq># Please note both <olJr> and <ct.mrLg> have similar rising-falling melody on the key words.¹⁰⁰ That it is intonation and not 'accents' can be apparent

⁹⁷ "Then he ... chose five smooth stones from the stream, put them..." What did David have up his sleeve?

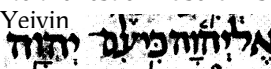
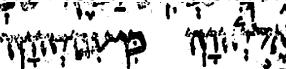
⁹⁸ Matthew Anstey in (2001) *Transliterated BHS OT* offers ləbāštəkā. For boo^shaeth, I am not persuaded.

⁹⁹ Whether such verses were meant to be divided in two depends on the algorithm we invent for them. If such an assignment method is produced that is capable of deciding always which of the marks is the top halver, all the verses can be made sure to get split in two. There is no point in trying to prove it fails if it were invented not to fail.

¹⁰⁰ This is not to suggest <olJr> and <ct.mrLg> are equal, only that their melody may be similar and it was used in this particular verse. The basics of accentuation are available from quite a few resources and cannot be repeated here. To recommend the most accessible ones, the website by Helmut Richter (1999-2004) *Hebrew Cantillation*

in Ps. 130:7 %aeL_Y Kil, &iM_Y<Jr> is 5 syllables (or 7 incl. 2 shwas). It is conceivable why contours can stretch. Hard is to explain why <olJr> extends over so many syllables only to abut to <at> which, to top if off, seems to take up the clause <olJr><at> (“for-with-the-Lord<olJr> is-steadfast-love<at>”).¹⁰¹ Quite a similar configuration is found in Ps 140:11 <rv><olJr><mr><at> “may coals of fire drop down upon them” <rvMg><sq> “and they be cast into pits,” viz. &aLeEHae"M<rv> Gae,Xaa'Li"M<olJr> Baa%ee"Sh<mr> JaPPiiLee"M<at>¹⁰² ends the first clause while the second one is <rvM><sq>. Please note the <Jr><mr><at> smooth descent. Nothing suggests any syntactic or intonational break between <olJr> and <mr>. The high rise low fall of <olJr> makes it suitable for cadences, which is clear from Prov. 10:1 <olJr> <p=> setting off a title. It is a conclusive melodeme as Laa'Qaa"X<olJr> is a pausal form (which concludes a clause there). It probably differs from the phrasal melodeme category (iF3.4.3 (6), <sq>, <at>, <zq>, <rv>) in that it has a specific intonation, not just stronger/weaker conclusivity. In that, it may remind <rvMg> which is in fact <ga.rv> compound where the <ga> element seems to constrain <rv> to a specific interval while <rv> is only a weaker inconclusive melodeme among the phrasals. Concerning its position in utterance, it reminds of <sg> in the 21'b that is also reserved for the introductory phrase or clause in a verse with a specific contour (not due to its nature but for its customary <zr=cn> usher which probably fulfills a similar role as <ga> for <rv> and <cn><ah> sequence for <olJr> (cf Jb 32:2): initiate the contour). Ps. 81:8 <rv><olJr> seems to suggest <rv> is lower than the highest point of (or does it apply only to *r.via& qa7an*, ‘little <rv>’, the pre-<olJr> one, and not to <Rv> *gadol*, ‘great <Rv>’, most of the rest?). The mentioned Jb 32:2 shows another non-accentlike property of <olJr>: Its first component, , is put on the pre-stress syllable such as %a'PPoO"<olJr> in v. 3 (even if it is a shwa or *xateph* as it is in Ps. 63:2 %:,aShaX:a'Rae"KKaa<olJr>). In the vocalized onset syllable concept (B1a1) is the same syllable as the shwa or *xateph* are onsets. If there is none, settles for the immediately preceding word, such as MiMMiShPa"Xa'Th<"ah'ol> Raa"M<Jr> in v. 2. See also Ps. 14:4 and Prov. 6:26 in the other books. (If the last syllable of the previous word is occupied by an accent, it is not disturbed and no is placed; which, however, did not happen in Ps. 6:3 where was kept in %uML'aL %aa"Ni<Jr>.) Behaviour like this seems to strongly indicate a contour is concerned. Sometimes it seems to reflect the syntax, such as in Prov. 23:7 with one clause ending with <olJr>, the other with <at> and the last one with <sq>. Other times, however, <olJr> appears only to emphasize the key word in a larger sentence, such as in Job 14:12. It can be doubted at times if the <Jr> component is always the stronger point of the two: consider Ps. 80:15 ShuU',Bh_NAA"<'ol"Jr> where ShuUBh might well be the stress (of which {,} may, or may not, be the indicator, cf Ps. 2:7). Whereas <at> is a regular cesura in both 21'b and 3'b systems, <olJr> appears to be utilized only occasionally when the content of a verse calls for a rising-falling nucleus.

Marks And Their Encoding at <http://www.mechon-mamre.org/c/hr/> takes perhaps the lead in simple clarity without being simplistic. The chapter on syntax is a digest of Mordechai Breuer (1981) *Taamey hamMiqra be-21 Sfarim uveSifrey EMe"t* (Jerusalem), with the advantage (beside English) that it leaves out exceptions and keeps the essential. James D. Price (2010₂) *The Syntax of Masoretic Accents in the Hebrew Bible* is a book-size PDF to be downloaded from jamesdprice.com. It deals with each of the accents in detail and presents probably the best of the SYNTACTIC interpretation of the ‘accents’ that is available. It is clear, compact, and due to being supported by figures, also probably representative despite of, in 21'b, having analysed only 5#. I obtained it only after *PMH II* was almost finished, otherwise I would have used it more in this study. Also, he gives reference to more recent scholarly works on ‘accents’ (Cohen, an earlier Breuer, Yeivin, all in English). Mentioned should perhaps be references to music (without claims to good selection, not being musician myself): D. M. Weil (1995) *The Masoretic Chant of the Bible* (Jerusalem). Also Avigdor Herzog (2007) *Masoretic accents (Musical Rendition)* (in *Encyclopaedia Judaica* v:13, Detroit: Thomson / Jerusalem: Keter, p:656–664) can introduce to traditional cantillation. A compact introduction to the rest of masorah is Aron Dotan (2007) *Masorah* (in *EJibid.* p:603–656). More resources explain masora; for Yeivin see ref. in iiR.

¹⁰¹ It is quite unequivocal in #L, see . #A, however,  shows a perpendicular under the 2nd H in the former Divine Name, which might well be a <Jr> (please note it looks similar to the <Jr> in the latter Divine Name). Or, it could be a *methegh* or, expectedly, a <mr>. Was it %aeL_Y<olJr> Kil, &iM_Y<mr>? BHK prints exactly as #A has it. #L needs to be interpreted as BHS prints it and distributes <olJr> over four words. It is hard to explain by rules. Price 2010 p:191 ftnt 47 mentions it as one of two exceptions of missing <Jr> (though both #A and #L have it). Neither Yeivin 1980 p:265–266 applies to it.

¹⁰² It was difficult and frustrating to keep the contours in place. They cannot be trusted even after the text is ready. Rather than have lines run ‘over’ instead of ‘under’ (that might be buggy, too), I developed *textual* devices to symbolize prosody. Please refer to iiA, Acronyms, AH#—a list of Hebrew intonation contour *simple marking* and iiB2 p:98 for a few symbols to replace the curvy lines. Please note that the 5 levels are tailored to MsH melodemes.

It seems that the concept a ‘stronger’ <olJr> over <at> in 3'b comes from <olJr> separating the titles of Psalms from the rest of vv. 1. The scarcity of <olJr> to almost ubiquitousness of <at> (James D. Price 2010 p:143 tab:44 indicates 4216 for 3'b <at> and 412 for <olJr>) does not support it. <at> appears as much ‘strong’ in 3'b as it is in 21'b. As a phrasal melodeme, however, it cannot be so specific concerning intonation as <olJr> is. If syntax is the assay or phonosyntactic rules are the aim, no such conclusion can be reached as the “Psalm of David” is obviously followed by a stronger division than anything else down the verse. In prosody, however, such titles can and do integrate in a pausal or intonational queue. Using a sign to mark it off need not imply this must be the strongest delimiter in prosody. What pausal and intonational queues do is only package information which the brain unpacks into syntactic structures. Perfect alignment can be helpful but two-packs are perfectly normal. The tab. 44, *ibid.*, shows interesting relationships: Apart from two conjunctives (<mn> 6911, <mr> 3767) and <dx> (2684), the highest incidences are shown by <rvMg>, 3185 which puts it third in disjunctives. Though all <ga> are included in this count as well as all <rv> “on the first or second word-unit before *Silluq*” (p:178) disregarding graphics, the other disjunctives fall well behind, anyway. It agrees with my observation and supports the claim <olJr> has enjoyed its prominent rank due to its salient intonation rather than real dominance. Dr. Price suggests a ternary division in poetic verses by ~ ~ <olJr> ~ ~ <at> ~ ~ <rvMg> in the <sq> domain (which is the whole verse in 3'b). <rvMg> as the near subordinate (I’d prefer to speak of ‘complements’) of <sq> is destined to complement <sq> in the great majority of cases (71 % by Price’s figures), incomparable to <olJr> (9 %, *ibid.*). These counts themselves would have me depose <olJr> from the position of the ‘strongest’ 3'b disjunctive. Dr. Price seems to come close to it, too.¹⁰³ From the prosody viewpoint, it all appears that there is a standard disjunctive (*PMH I* introduced the term ‘phrasal melodemes’) <at>, by nature unspecific concerning intonation just as it is in 21'b but unlike there it is possibly accompanied in 3'b by two specific melodemes, <olJr> for the former part of the verse, <rvMg> for the latter one. It might be interesting to check out if their contours were to be so similar as their shapes may suggest: <olJr> is undoubtedly a rise-fall, so far supposed as a high-rise low-fall, \wedge . <rvMg> in turn, so far supposed to be a lowered <rv>, as if \searrow -, might well express a similar rise-(to <rv>)-fall-(as by <ga>) contour. It would make sense to have a \wedge | \searrow toolbox for verse.

B1c2 Meer:khaa L:garmee | \searrow <mrLg>

Due to the concept of *PMH I/II*, <mrLg> is supposed to be essentially <mr> elevated by the *paasaeq* | concept to a disjunctive (or, stronger) melodeme. <mr> was recognized in iF3.4.3(11):254–256 as a low fall melodeme. This evaluation still holds (only <mr> and <mk> should have been distinguished better, which we are going to remedy in the summary of the individual melodemes later on in B2a). What remains is to offer what the *paasaeq* component might contribute to the <mr> low fall.

B1c2.1 L:garmee Paasaeq |

To grasp the purpose of the mark, unclear or unequivocal as it seems sometimes, it is reasonable to suppose it is possibly older than the Ms marking, perhaps one of the oldest auxiliary mark in TN¹⁰³K. *Paasaeq* could be a relic of the oldest West Semitic word divider, a short perpendicular (a line, or a Υ wedge, in Ugaritic cuneiform Υ , also found in South Arabian monumental inscriptions and the most ancient Phoenician writings¹⁰⁴). The mark might have had a history when the Masoretes decided to make use of it, failing to abolish its pre-Masoretic use. While they integrated it in the prosody marking, its pre-Masoretic use can be assumed from divergent instances. The following cases can be recognized:

¹⁰³ “...these instances suggest that *Athnach* is of superior rank to *Ole-WeYored*. It seems better, however, to understand that these verses have been divided on the basis of poetic parallelism rather than strict syntactic function, and that the two accents are of equal rank, as in the following examples: ...” (p:156). It should be accepted, however, that Dr. Price’s system is consistent and works as it is. (It needs ‘virtual accents’ and exceptions as any rigorous system applied to the melodemes.) If dividing is the approach and no top divider can repeat, at least two, better yet three dividers are needed. Prosody does not demand it. Each melodeme is as good as it fits and as strong as it helps express. Given that we describe ready-made series, both syntactic and prosodic approaches arrive at determinate sequences. The former try to find an algorithm to be able to reproduce (though the task of MSH scholarship does not demand it, only Generative Grammar), the latter is happy with describing a contour. No generative system implies that no exceptions to the rules need any hidden structures to get explained.

¹⁰⁴ Later Phoenician neglected separators just as in more informal records and brief notes of other West Semites.

(a) It separates words from each other when the border between them needed to be enhanced. We should realize a space in mss that were copied was much more fragile ‘letter’ than today, prone to being overlooked and get lost in further copies. Where misinterpretation was a threat, it was *paasaeq* that helped it eliminate. Distinguishing final and initial identical letters from each other and the same word repeated twice are in the category, too (*paasaeq* prevents haplography). It can also apply to melodemes.

(b) It might also keep apart words that were felt incompatible or conflicting in meaning.

(c) The mark might be used for abbreviations. (‘ and ’ in ModH could be a later development.)

Wickes 1881 p:98, supplied examples for identical words, %MN | W%M (Ps 41:14; 72:19; 89:53). It seems to suggest it is in fact a pause (be it physical, or mental). Wickes, too, called it “a slight pause” that, consequently, “changes every conjunctive accent, with which it is associated, into a disjunctive. But as it has no modulation of its own, it is not counted among the accents” (p:96). Then he provided a few examples with this assertion: “We have seen, again and again, that the punctators claim the liberty of marking the emphasis wherever they please. And in most of the above cases they could only do so by the employment of Paseq. In the others, they had the choice of Paseq or L'garmeh” (p: 97-98). Following the repetition examples, he added: “But this rule is not carried out in xxii. 2; lxxviii. 13; Prov. xx. 14” (p:98). I could add from my own excerpts it seems to have been put in between similar letter sequences, such as B:Ja"Dh<mn> | DaaWi"Dh<mn> in 2Sam. 3:18 (please note the | follows a construct state noun, obviously in no position to be separated syntactically nor in prosody). At times it is not easy to decide, such as JaaMiI"M<mh> | LaJJaaMiI"M<p\$> in 2Sam. 14:26 that could be also <mhLg>. But given that <mhLg> would be unusual in this context, it seems probable the purpose of the | is to prevent the latter word from being skipped accidentally. Sometimes, the principle was not applied, such as in LaaHae"M<at> LaaHae"M<gm>, Judg. 10:4. This particular instance seems clear: <at> and <gm> are too wide apart for the words to need any other separator. But does it show that | is actually younger? Or can the ‘old |’ hypothesis be still held by assuming that <at> and <gm> were contained in the traditional prosody long before the melodemes were put to writing? It is no bullet-proof argument since the | is to safeguard against overlooking that can happen regardless of intended prosody, such as in GeeBhiI"M<mr> | <GeeBhiI"M<sq> of 2Kings 3:16. Though the unit is <mr><sq> with as different melodemes as the system allows, one could easily skip accidentally one of the words no matter if melodemes were written or remembered. The sentence would have made sense even if saying just GeeBhiIM. But keeping it GeeBhiIM GeeBhiIM made the sense more precise. (The instance also shows that not every co-occurrence of <mr> and | has to be <mrLg>, a combination highly improbable here.) Something quite similar can be found in Hae%aa"X<mn> | Hae%aa"X<at> of Ps. 35:21. The difference of the melodemes is wide, the <mn><at> is a unit, still it made sense to remind the lector to keep the words separate. In Job 40:9, Kaa%ee"L<mr> | Laa"Kh:<at> appears to be motivated religiously: The two ~L L~ were undesirable to fuse in LL lest it blur the contrast between God and Job. Again, it could be <mrLg>¹⁰⁵ but as the other reason seems apparent, I would support it.

B1c2.2 Meer:khaa L:gharmee vs Paasaeq

The <mrLg> tag was assigned 84 times by the current version of BnaA program, most of them in 5#, many also in Ezechiel.¹⁰⁶ Syntactic theories do not recognize <mrLg>. All co-occurrences of <mr> and | are incidental, unlike <mnLg> in 2'1'b and <mhLg> and <azLg> in 3'b. In reviewing melodemes as prosody, however, these and more combinations have to be checked for possible compound values. In <mrLg> it would be a low fall with a juncture. It means that following the drop in melody, a pause can be inserted though probably in most instances it would not be so. Nevertheless the juncture is audibly present even in tightly connected, uninterrupted speech, namely by phenomena such as prepausal lengthening, a break in intonation, a possible change in speech rate and impossibility of fusion across the juncture. These are common features of prosodic units I call pausal queues (pQ), see B1a1.2 above. It does not necessarily have to imply a pausal queue ends and a new one starts. A subset of junctural signals can accompany smaller units, too. If Ms scholars intended to prescribe a slow-down in speech, point to where attention was needed and generally order a ‘virtual’ segmentation in the lector’s mind, it might have been natural for them to link a melodeme such as <mr> with | and produce a prosodic unit,

¹⁰⁵ Not according to J. D. Price’s theory. His 2010 book, *op. cit.*, explicitly affirms it as | (p:230 fnt 38), no doubt because <mrLg> is not recognized in 3'b. In such a context, only <mhLg> would be admitted by him.


¹⁰⁶ The Job 40:9 quoted above was recognized ~<7r> (correctly) ~<Jr> (misidentified) and ~<at> (correctly). The <Jr> of <olJr> has some substance as Z:RoO"a&<7f> has no space for . If it were so, Kaa%'ee"L<olJr> is possible. Anyway, most if not all <mrLg> is outside 3'b. Only, the prosodic hypothesis need not be so strict about.

exceptional as it was for later scholars who tried to generalize melodemes into a grammar of sorts. So until statistics and, in this instance, direct consideration of all the places (84 instances is not so much) shows there are reasons for independent placements of | in all the locations, the initial assumption has to be there is a <mrLg> compound melodeme with a weak disjunctive power that does not disturb the contour. (Or, does not disturb the broader shape of the contour that results from the integratory effect of an intonation queue, a higher prosodic unit, over subordinate pausal queues, or lower yet, accentual queues as rhythm units.) The other potential compounds to be checked out are <drLg> and <iLg>.

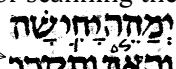

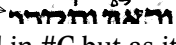


B1c3 Dargaa s <dr>

Graphically, the mark looks as a <mr> atop another /, linked in the middle ʹ, later turned slightly < and possibly smoothed out ʹ. If supralinear and sublinear placement exercises some iconic significance (it is supposed so far, see iF3.4.1), we could think of three belts ☐, the middle one of which is unusable for intralinear placement of melodemes and has to be implied by the shapes in the other two belts. <dr> could be one of the shapes, possibly indicating a mid-belt crossing ☒. This suggests itself especially in places with supralinears preceding and sublinears following, such as Shee"Sh<dr> K:NaaPha"JiM<tv> Shee"Sh<mr> K:NaaPha"JiM<7f> in Is 6:2. “Each having six wings”, lit. “six wings six wings” might show a descending <dr> provided the whole phrase was a low fall-rise contour, which is likely. At least, if indeed <tv><mr><7f> was a fall-rise, the first SheeSh was clearly also a part of it as its meaning seems to indicate (the preceding <zq> is obviously not included). Such is also 5M 22:15 and Is 1:1 of <qd><dr><tv><mr><7f>, v. 11 <qd><dr><tv><7f>, 5M 8:1, Josh. 24:25, 1Sam 3:21, 19:15 (a quoted command), also 2Kings 25:28 after <rv>, similarly 2Kings 17:1 <tl><qd><dr><rv><7f>. However, <dr> also starts sequences by itself, e.g. 1M 1:22, 5M 10:15 and Is 1:28 (#) <dr><tv><7f>, 5M 19:13 (~<at>) <dr><tv><7f>, also 32:39, (after <zq>) Is 2:11 and (after <rv>) 5M 9:20. These instances suggest <dr> must have had also a piece of contour specific to itself. Such an assumption is necessary to defend this prosodic interpretation in places such as Job 42:8 for (~<at>) Kil"<dr> %iM_PaaNaA"W<mn> %ae55AA"<rv> where the melody seems to have a general mildly rising character to culminate on %ae55AA"<rv>. With <dr> not being simply a transit, the melody might have been mid fall-rise to rising level to mid-high peak v. This could also be perceived in the emotional assault in 1Sam 17:28. Still, Josh. 1:4 is unemotional, but is found with a similar contour (mind the <tl><qd><gr> unit that precedes and provides a ‘starting point’ for the <dr> piece of contour).





B1c4 Dargaa L:gharmee | s <drLg>

Considering B1c2.1, <dr> seems easy to combine with |, an intonation break following a mild descent accompanied with an option of slightly lengthened vowels (not so much as to induce pausal forms since a prominent foot is triggered only before stronger pauses). The BnaA program identified 55 candidates for <drLg>. Instances such as Is 6:3 QaaDhoO"Sh<dr> | QaaDhoO"Sh<tv> QaaDhoO"Sh<7f> are undisputedly ineligible as the reason for | is too obvious: to help distinguish two (or possibly all three) tokens of QaaDhoOSh from each other. The melody can be interpreted as close to  but different melodemes might not secure against running any two words together. 4M 17:28 confirms it is indeed <dr> and <tv> words that needed *paasaeq* more, perhaps due to the same direction of melody. Unlike this HaQQaaRee"Bh<dr>| HaQQaaRee"Bh<tv>, 1Sam 20:21 QaaXae"NNuU<dr> | WaaBhoo"%Aa <tv> can make hesitate until one realizes this ~W W~ looked more similar before the introduction of pointing (so it can be conjectured that | had entered the text earlier than vowels did). Simultaneously, the *paasaeq* separates two verbs, which might be forced by | to make two units in the descent. Such a virtual pause (i.e. not a silence) could be demanded in the afore-mentioned 4M 17:28. It is clear in Is 5:19 J:MaHee"R<dr> | kept from the following JaaXil"ShAa<tv>, an asyndetically connected verb that might have otherwise make the impression of a rectification. The | suggests to adjust the prosody for a virtual pause (by lengthening the ~[.---ee]R ultima,¹⁰⁷ breaking the contour, emphasizing the stress or by pausing the phonation). *Paasaeq* might have been understood as a recitation improver. Would it be then a sufficient reason to introduce <drLg> into the inventory, or should we better project the virtual


¹⁰⁷ Glossa in AH# should be [< >] as [] is any phonetics. But what transcription would allow me to mark out that a phonologically short ..ee was lengthened into ---ee? Having no choice but Glossa, I refrained from cluttering.

pause recommendation to *paasaeq*, and keep <dr> (and maybe other <Lg> melodemes) simple? Moreover, *paasaeq* does not have to be (only) a relic of an older, rudimentary marking (PMH I p:232) later overcome by a more developed melodeme system. Unlike modern prints where | is rather conspicuous, in both #A and #L it sinks in the line with the effect that it is almost lost as a tiny | inside R in J:MaHee"R|<dr> JaaXil"ShAa<tv>, smaller than an average melodeme, which a lector scanning the lines could easily overlook. I leave a portion of the line below inside the frame to make  visible that the  triangle is a *circellus* on NiR%Ae"<at> in the same verse.  In #A,  the *circellus* is clear. The size of | cannot be well evaluated in #C but as it  can be observed it was placed only after the word. Such handwritten inconspicuousness as in #A and #L should have us think twice whether <drL> as well as <azLg>, <mnLg>, <mrLg>, <mhLg>, <ilLg> and in fact <Sh> are really needed specific units, or consider a *paasaeq* | to be added to simple <dr>, <az>, <mn>, <mr>, <mh>, <il> and <sh> as an intonation modulator, derived from *paasaeq* properties rather than special melodeme types. In its early functions (such as 1Sam. 20:21 above for ~W | W~), it could still be called *paasaeq*. It would be termed *l:gharmee* in its function integrated in the later systems of melodemes (provided the suggestion on the history of the marking, PMH I:232, can be upheld). 'Legarme' is used already in some syntactic theories as an umbrella term for <mnLg>, <mrLg> and <azLg> so the interpretation proposed might be found in harmony with their concepts.

B1c5 Paazeer † <pz>

This is another 'jooreedh' type melodeme (No. 2 above under B1c) but it could as well be interpreted as a 'maethaegh' type melodeme (No. 1 above). For inferring its possible role in the intonation of verses, it is important to realize it was one of the melodemes that were repeated, shaping thus minor details of the contour (apart from an exceptional *paazeer* 'king' to replace <at> in 3'b, which, obviously, needed only one <pz>). Its composition of two strokes, one of which attaches to the side of the other, seem to suggest a mid-zone to be modulated or crossed just as it was with <dr>, B1c3 above. It applies whether we interpret the sign as †, or †, or †. The mid-zone or mid-high intonation (the mark is supralinear, after all) can level or descend but the key feature is virtual pausing at the end (a stress, a break; or a real pause, rarely). If it were only a mild descent, sequences of <pz> would get too low. A tail-accented level seems to be favoured by the manner of writing it by the oldest available Masorettes. Out of 955 tokens¹⁰⁸ of <pz> in TN"K, let Is 5:25 be selected. The <pz> stands at the beginning of the verse, on &aL_Kee"N connector. Given that such expressions often seem to have a salient contour in msH, standing out of the rest of the sentence (not rarely by <rv>¹⁰⁹), what presents itself is a short ^lmetiga-type line joined by a short ^lgarsha-type high fall (or a ⁻ level not appearing alone). The graphical appearance in the oldest mss seems to support it:  In #A, the <pz> in &aL_Kee"N is made with a long perpendicular abutted horizontally to †.  The perpendicular is by no way slanted. But <mr> in %iMRa"Th in the line above, *quod vide*, in Is 5:24 is also not slanted at all. And the same line on the right (not shown), Ni%ee"CuU<sq># at the end of v. 24 has its slant in <sq> almost inappreciable (so, paradoxically, the <sq> is closer to a typographic <mr> than this <mr> itself). The shape of <pz> comes out very clearly here, drawn by a sure hand in a free space (as is the space for the whole word). Slanting angles in #A, however, apparently cannot be relied on as the pointing scholar maintains a comfortable margin. Some of his slanted melodemes are well aslope, cf e.g. _Ji5Raa%ee"L<7f> two words before in 5:25 or a <gr> of B:&aMMoO" in a line below where both <7f> and <gr> are drawn in a clearly oblique angle. On the other hand, e.g. <7f> in JaaDhoO"<7f> in the end of the same 5:25 is so little oblique that it has almost the same appearance as the <sq> under the following N:7uUJAa"(H|)<sq>. In #L †, <pz> in  &aL_Kee"N is also made with a salient perpendicular slightly slanted against the direction of  writing (so it clearly cannot be a <ga>-type line that would need a reverse slant). It is joined, again, in about half of its height by a level strike (again almost imperceptibly sloping down left), †. The melodeme symbol touches Th in the line above but fills a free space as the %iMRa"Th<mr> word in v. 24 has no vowel under Th (both {a} and <mr> are below R to the right and <mr> collides only with the ascender of L in &aL_) so despite of a congested look it is unequivocal under scrutiny. The melodeme writer in #L had his slanting tolerance fairly wide just as the one of #A did, since though some of his

¹⁰⁸ In WLC v. 4.20. BnaA shows 954. The discrepancy may be technical, or due to different versions of the data.
¹⁰⁹ A simple "=>.*<rv>" search has shown 1,367 out of 12,811 <rv>s (10.7 %) and 23,214 verses (i.e. positions). BnaA shows 5 more <rv>s than WLC 4.20 and 1 verse more (in fact, I counted all : verse ends represented by #).

slanted melodemes are quite oblique (cf also the *_Ji5Raa%ee"l<7f>* two words before in 5:24 or *<qd>* in *%aPh_Y<qd>* in the line below where both *<7f>* and *<qd>* are drawn almost in 45°), other incliners, be it the ones mentioned above, or e.g. *<gr>* in *B:&aMMoO"<gr> v 5:25* on the line below, are rather vertical (the #A scribe has his *<gr>* more askew here). A wide slanting span can be seen well on *<dr>* which occurs twice at this ms location, under *JaaDhoO"<dr>* and *WaTT:HiI"<dr>*, both in v. 25. The #L punctuator wrote his upper half of *<dr>* steeper than the lower one (top down it resembles sort of L and /) whereas his latter *<dr>* has its halves the same slant (L and / just as in v. 19 above). The #A *naqdan* kept a consistent grade in all the three instances (vv. 19, 25 *bis*), quite clearly. The same can be said after a random check of more locations. Apparently, the photocopy of #C cannot be used  due to its too high a contrast which makes vocalic and melodeme marks mostly disappear. ▶▶

Should we seriously consider the shape of the mark drawn by hands of those who might have been familiar with its original meaning, we could conjecture *<pz>* meant a minor stop in a neutral intonation such as to prepare hearers for a take-up perhaps greater in importance, a small meaningful (virtual!) pause to get or keep attention. The *<pz>* mark is supralinear, possibly as it was a mid-high intonation, though not a fall from/to mid high as, apparently (to demonstrate below), it was not a cadence for concluding anything, nor does it appear a rise to/from mid high as *<pz>* was not to emphasize anything, only provide for a continuation of a contour that levelled or was descending slightly (a slight descent is physiological and can be considered a variant of a 'level' contour, both implying 'neutrality').

Two questions emerge from the analysis of a sample that, after little experience, was selected as typical, viz. (i) was the contour a fall-rise, a drop, or rather a take-off? and (ii) can we exclude for it to have been a small cadence, after all? Let us consider examples testifying to the options one by one.

A fall-rise? This can best be guessed when *<pz>* sits between higher points which it could have joined smoothly such as it is in 1Sam. 14:30 where *%a"Ph<rv> Kil"<pz> LuU(%<tl> %aaKhoo"L<qd> %aaKha"L<mh>* is a portion of Jonathan's emotional cry: Let those soldiers eat at last! Emotional is also Ps. 140:6 (~_~<azLg>| ~<pz> ~<rv>) (~<rv> ...) with its marked fragmentation of (<azLg><pz><rv>) that makes a single syntactic phrase. 1Sam. 17:23 can furnish a narrative example ~<rv><mn><mn><pz> <gm> <tl><qd><mh>. 2M 28:27 and 39:20 offer an almost identical text including melodemes, save minor changes, so it may be useful to compare the two versions. They differ by transposition from 2m fut (ch. 28) to 3pl pf (fut and pf are sequential). This had no impact on melody. The only other difference and the only one that affected the melodeme configuration was using a self-standing pronoun of acc3pl *%ooThaaM* in 28:27, where the counterpart of the 39:20 wording used a pronominal suffix *-uM* in the corresponding verbal form, compacting the two-word phrase in 28:27 into a one-word phrase (verb+pron) in 39:20. The cut affects melodemes by replacing *<mn><pz>* in 28:27 (*W:NaaThaTTAa"<mn> %ooThaa"M<pz>*) into *Wa,JJiTt:Nu"M<pz>* with *<pz>* alone. It leads to two conclusions: (1) *<mn>* appears to be (here) an unmarked melodeme the sublinearity of which possibly suggested the lower register was unmarked while the upper one was marked. Provided its only purpose was to associate with no hints to pitch or contour, then it associated *W:NaaThaTTAa"<mn>* to *%ooThaa"M<pz>* which itself carried a mark of a particular contour (and implied a higher pitch in the preceding particular *<mn>*, too). (2) Given that *<pz>* survived the cut of two accented words to a single one, *<pz>* appears to be the more important of the two and itself may be sufficient to express the contour in 39:20 that quite or much agreed with the one in 28:27. As it is put between *<sg>* and *<tl>* at both places, its contour probably starts higher (though not necessarily in the height of *<sg>*) and ends at least as low as to let *<tl>* take off from somewhere. The *┘* graphics appears to get it well if it was meant as two *jooreedh* types in different heights, for dropping from mid to low, or, alternatively *┘* for a fall-rise stop. The marking of other verses in the two locations, 28:28 and 39:21, seems to support this claim. The form *WJRKS*W pointed in 28:28 in keeping with the context as a volitive (*W:JiRK:SuU^*) while in 39:21 in line with the context as an indicative (*WaJJiRK:SuU^*) bears in the two cases *<mn>* linking it to the following form: *%aeTh_HaXooShaeN<tl>* in 28:28; while *%aeTh_HaXooShaeN<pz>* in 39:21 (the verses are worded almost identically, mostly in melodemes, too). So, in 39:21, *<pz>* makes a self-standing portion of the contour, concluded by *Mi77aBB:&ooThaAW<tl>* that follows starting its own *<tl><az><gr><mn><rv>* sequence. In 28:28, however, the sequence starts after *_HaXooShaeN<tl>* as follows: *<gm><mh><p\$><mn><zq>*. (Melodeme sequences differ also in more places of the verse where, however, it is clearer the reason to have been modified is the verse was longer in 39:21 and *<at>* had to move on, i.e. *<sq>* in 28:28 had to be replaced by *<at>* in 39:21.) The sound in 28:28 thus makes a single falling-rising line that emphasized the volitive at the beginning of the verse (*W:JiRK:SuU"<mn> ~<tl>*) and then only the end of the phrase (*T:Khee"LaeTh<zq>*). The

echo of the pattern in ch. 36–39 did not dwell so much on purposes and focused more on the technical side of the task. Verbs are mostly indicatives and the melodic contours prefer to stress nominal participants. This is so in 39:21, too. The contour stresses HaXooShaeN, “breastpiece” (<Tl>), then 7aBB:&ooTh Haa%eePhooDh (<gr>), T:KheeLaeTh (<rv>) up to XeeShaeB Haa%eePhooD (<zq>). What is important is comparison. <Tl> corresponds to <pz> in %aeTh_HaXooShaeN at the beginning of the two variants following the verse-initial verb. It can be concluded a light descent is characteristic for the contours that needs to be ready (or starts already) to climb up again.

Quite often, however, <pz> alone opens such a stretch of speech. It might be relevant if it is reasonable the stretch did not take off from bottom (it usually starts fairly high, so it is reasonable to expect it, e.g. in LuULeE" <pz> in Ps. 106:23 it is improbable not to step any higher from <olJr>¹¹⁰). 2Kings 17:24 has WaJJaaBhEE" <mn> Mae,LaeKh_%aShShuU"R <pz> MiBBaaBhae"L <pz> ~ <Tl> where <mn> only attaches the contour to what follows which is <pz><pz> to open a long list of names.¹¹¹ Something less than a pause would be in place following both, and <pz><pz><Tl> fits a switchback or a double sway better than a descent (in 10 syllables, it would have been deep). Such a neutral mid-high start can be supposed following <at>, too, as it is in 1Kings 9:11 ~ <at> %aa"Z <pz> JiTTeeN <tl> ~ <qd>, even if more <mn>s head for the contour and stop in front, such as 1M 1:21 ~ <at> <mn> <mn> <mn> | <pz> <tl> <qd> <gr> where Haa,RooMae"5aeTh <pz> might even have been put there to cut a descent that was natural in long levels so as not to get too low as the following %:aShaeR <tl> was to prepare for the <qd><gr> arc concluded in a <rv>.¹¹² Reasoning over a few examples, however (especially when it is not possible so far to make aural tests), should not be too conclusive. Very varied stretches of speech as e.g. in Prov. 30:33 <mh><gl><pz><ctMh><rv> warn to keep <pz> flexible. This particular example might have been intoned as a low rise swayed further up (so that <pz> would start mid low and keep to the middle), hump down and rise to a mid-high conclusion. The latter end of <pz> is to be questioned also: Prov. 27:22 ~ <mr> ~ ~ ~ <azLg> <pz> <mn><dx><at> would still fit the fall-rise hypothesis but it could also be read as a simple fall that would not stress Ba,MaKhTee"Sh (“in a mortar”) but integrate it to “along with grain, with a pestle.” So, was <pz> a mid-zone descent, after all (such as it would fit to 2M 28:27+39:20 as analysed above)?

A mild drop? Josh. 10:40, Judg. 21:22, 1Sam. 9:13, 19, 22:11, 2. Sam. 18:9 (following <rv> just as 1Kings 19:11) seem to agree with a short, almost neutral drop best of all. In most examined cases, however, it was followed with a rise (which should not surprise in drops). Different was 1Kings 19:11 where the whole phrase <mn><pz><gm> included the rise so as to fall on <gm> again. Peculiar is also 1Kings 22:10 where (~ <mn> ~ <pz>)(~ <mn> ~ ~ <pz>) ~ <tl> are two equal semantic units prior to a rise that concerns them both. All that as if suggests a sort of definite conclusion was implied in <pz>.

A take-off? Some sequences concluded with <pz> would be hard to read with a final drop. Quite a few were already presented and need not be repeated. Some could be falls but make the impression that to insist on them would entail robbing the text of cohesion. 1Sam. 14:34 is (<mn> <mn> intro) (<mn> <pz> 1st order) (<mn> <pz> 2nd order) (<mn> <tl> ... content). Unless the <pz> orders rise a bit in the end, the message falls apart into three independent claims. This is not the way narratives are built. Josh. 19:51 # %ee"LLAe <mn> HaNN:XaaLoo"Th <pz> appears to sound clearer with a slight rise in the end rather than start a descent over the next <mn><mn><mn><mn> | up to <gl> <qp> 14 syllables (or as much as 17, it depends). But perhaps only a non-falling tail rather than a take-off to a height is what was relevant, ~, i.e. marking-off a virtual pause in otherwise plain stretches of speech. 1Sam. 5:8 # WaJJiShL:XuU <pz> seems to be a rise or level, whatever to link to the next WaJJa%aS:PhuU <tl>, but certainly not ending in a drop (which would imply a conclusion, out of place here). It is even clearer in 1Sam. 12:9 where ~ <at> WaJJiMKoo"R <mn> %ooThaa"M <pz> (“he sold them”) needs to join to B:Ja"Dh <mn> SiL,S:RAA <tl> (“into the hand of Sisera”), a five-word object (<mn><tl><qd><gr>).

A small cadence?¹¹³ A combination of more means to make a tiny conclusion that does not imply an end of the clause seems to be in line with the *maethaegh* | graphical motive. A sequence of 10 syllables

¹¹⁰ Please note <zr> follows <olJr> rather than preceding it as rules that do not consider intonation would expect.

¹¹¹ The intonation in the list varied, uUMMiKKuUThAa <Tl> uUMee&aWWAA" <mh> uUMee,X:aMaa"Th <p> \$> uUS:PhaRWa"JiM <zq> but given the names are foreign it is the contour that could make sure it was not boring.

¹¹² The <dr> in the next v. can demonstrate the opposite: a midway intonation is allowed to fall on, <dr><tv>.

¹¹³ A ‘cadence’ here means a conclusion by a change up or down in pitch, duration and/or amplitude. The pitch, then, need not drop (a ‘cadence’ in a narrow sense) and can go up (an ‘anti-cadence’ in a terminological sense). In fact, the slight change can be in rate or rhythm intoned indistinctly (a ‘semi-cadence’ in specialized language).

in four <mn> ended with <pz> in 1Sam. 9:13 appears to be the right context for inserting something to break it. Please note that “As soon as you enter the town, you will find” is a weak justification for <mn><mn><mn><mn> if ‘accents’ were meant to be syntactic marking. If the particular configuration was to imitate the girls’ speech (v. 11) hastily explaining (MaHeer, v. 12) what Saul and his page had to do promptly, the mn mn mn mn pz tl qd queue might be a good choice. Quite unequivocally is a <pz> closing function employed in Ps. 25:1 L:DhaaWi"Dh<pz> where the content starts off immediately. In fact, one might wonder why a stronger separator was not used.¹¹⁴ The masorah to it notes “in teamim twice.” Ps. 28:1 is much the same, but its configuration is fuller, with <olJr> and <at> later on. In 26:1, on the other hand, L:DhaaWiDh with content right on is assigned <azLg>. As the content starts off with <mh>, reasons for the <azLg> must have been in l:dhaawidh, not in the context. Perhaps it was not significant what direction the melody turned in the end of <pz> provided a minor conclusion was felt. Series of more <pz>s can be explained with this assumption.¹¹⁵ It is not rare to find two <pz>s in a row, such as Josh. 18:7 “and Gad”<pz> “and Reuben”<pz> “and the half-tribe”<tl> ~<qd> ~<gr>. 1Sam. 14:3 appears disturbing: [And] “Ahija”<mn> “son of Ahitub”<pz> concludes an item. But the immediately following “brother of”<pz> “Ichabod”<mnLg>| “son of Phinehas”<qd> “son of Eli”<gr> does not follow syntax at all and it is difficult (though not impossible) to imagine an intonation for the two items. It is exactly for configurations like this one that sound technology should be called for help. Another such place is 2Kings 20:12’s <pz><pz> where Baa&ee"Th<mn> HaHil"(%<pz> (“at that time”) ShaaLa"X<pz> (“sent”) B:ROODha"Kh<mn> BaL%:aDhaaN<tl> may be interpreted as two items prior to a conclusion later in <tv> but certainly not on syntactic grounds. Groups can be enlarged such as in 2M 4:9 W:HaaJaa"<pz> %iM_LOO"<mn> Ja%:aMil"NuU<pz> ~<tl>~<qd>~<gr>~<rv> (“and if they are not convinced”). The words can be thought of as two groups or just one, but given that <mn> is inserted to expand the latter one, it is probable that <pz><pz> was meant as two units.

A tentative conclusion may be to assume <pz> was a mild descent to about a middle pitch and raising it mildly again. That might perhaps be the reason that it was supralinear. It can be worth mentioning that *pazer gadol*, a <qp> melodeme that rarely occurs and is believed¹¹⁶ to be a replacement for <pz> (in fact, *Hôrayat haQôrê* was explicit to use it for “special emphasis so the voice was raised more than usual, making (ordinary *pazer* into) *pazer gadol*”¹¹⁷), consists of two portions, Tl+tl, like this: [˘]. One cannot be certain if the fall-rise contour was the emphasizing shape of a <pz> contour that might have been less explicit or less strict, or if that fall-rise was only said in “a raised voice” (וַיִּנְבְּחֵן יוֹתֵר מִדָּבָר) —all that under the assumption the graphics can be relied on in guessing intonation of melodemes.

B1c6 Qadhmaa (%azlaa) <qd> (<az>)

To do first things first, a remark should be made concerning the naming. There is a disunity in what is *qadma* and *azla* with and without a *geresh*. What is unequivocal, however, is what is *azla l:garne*. That is why the [˘] shape is considered *azla*. It is also unambiguous what *gershajim* are, of which [˘] derives [˘] *geresh*. It remains to determine if the alternative *qadma* refers to *azla*, or *geresh*. If I can conclude from the meaning “emergent”, “front” or “earlier”, all that seems to suggest a *qadma* comes earlier, in front of a *geresh*, as if “going out from or above” the line. The final question to decide is if the couple of

¹¹⁴ In the standard syntax of the ‘accents’, the verse is a regular <pz-king> ~ <rvMg> ~ <sq>. The fact that the verse fits some of the frequent patterns, however, fails to explain why it was written that way and not anyway else.

¹¹⁵ J. D. Price 2010 p:97 ftnt 12 refers to Wickes’ find “(II, 113)” of 8 <pz> in a row in 1Chr. 15:18. I try to avoid excerpts of others (dissertations are a school format, after all) but this particular place begs an exception: It is a name list shaped like this: # ~<mr> ~<mn> ~<at> name<pz> name(?)<pz> W:name<pz> uUname<pz> Winame<mnLg>| W:name<pz> name<pz> uUname<pz> uUname<pz> uUname<tl> Waename<qd.gr> uUname<qd> W:name<mr>+name<tv> Winame<7f> ~<sq>#, that is 4 <pz>s and 4 <pz>s. The former series of 4 concluded by <mnLg> is interesting: Perhaps <pz> should sound inconclusively in comparison with <mnLg>. If <mnLg> mildly dropped, <pz> might have been a rise (or vice versa if <mnLg> was meant to introduce the next series). Shaping a dull list of names so carefully with a particular melody (please note the <tl><qd.gr><qd><mr><tv> close including the <qd.gr> double melodeme word) makes a good sense: Lists of unknown names are hard to anticipate and make sound meaningfully. It must have been helpful to be guided in finding one’s bearings.

¹¹⁶ For its name, shape and instances, see also e.g. Wickes 1887 p:114, Yeivin 1980 (#275) p:213, Price 2010 p:100.

¹¹⁷ Yeivin 1980 p:213 (Revell transl.) from Dérenbourg 1870, p:400. Interpolation and italics are their own.

melodemes frequently / facing each other \ is *azla+geresh*, or *qadma+geresh*. I base on a tradition that identifies them as qd+gr but admitting inability to back it up over the other I cannot insist on that.¹¹⁸

The “rising” sense of the name jointly with the graphical shape hint at a high rise. It appears to be a universal expression of “raised” expectations. In Ps. 55:10, *Kil_Raa%il"Thil<qd> XaaMaa"S<7r> W:Ril"Bh<mn> Baa&iI"R<sq>*, it seems that while <7r> sounds with expectations, too, they were as if submitted to <qd> expectant introduction. The <qd> rise brings a reverse cadence in the text (an anti-cadence) which is not the same as conclusiveness. In 1Sam. 17:1, *~<qd> [Ph]~<mh> ~<p\$>* betray the dividing power of <qd> was not great (otherwise *~PhuUP:Li~* would indicate a minipause). Actually, no pause was involved if it was in a single word, such as *W:Hi"NNiIXoO"<qd.zq>* in 5M 26:4.

In line with this observation are spots where the usual combination <qd><gr> mentioned above is found in a single word, sometimes <qd> separated from <gr> by no more than a shwa (understood as a merely expanded same-syllable onset in the present theory). This is not rare, cf 4M 27:11, 31:6 (it is actually unclear whether *W:%aeTh_Pil"N:Xaa"S<qd.gr>* should not be *_Pil"NXaa"S<qd.gr>* though Greek Φινεεε does testify for *Piin:xaas*), 5M 6:11 (please note *uUBhaa"TiI"M<qd.gr>* does have the melodemes on adjacent syllables), 7:13 (a shwa separates), 25:19 (why *_%oo"J:BhaE"Khaa<qd.gr>*, and not *mikko"_%ooj:bhae"khaa<qd.gr>* where the separation would be clearer if indeed it was a secondary stress that was the place), 5M 28:1 and Judg. 6:30 (a shwa), Josh. 22:12 (a *xatheph*), Judg. 20:46 (again, the main word has them both, *KhoL_* was left stressless), 7:11, 1Sam. 11:1 etc. If the speech is emotional (such as in 1Sam. 17:46), a stronger secondary stress may seem justified, the more so if separated by a full syllable (a prosody contour independent of stresses is also justifiable in such instances), less so if closer, such as 1Sam. 19:11, but was *%eE"N:Khaa"<qd"gr>* read *%een:khaa* and not *%eenkhaa?* and why *%iM_* was ignored for stress? Was *WaJJe"C%uU"<qd.gr>* in 2Sam. 11:17 read *~jeec:%uu?* At times one may wonder why a word was made so salient, such as in 2Kings 25:25, was *BaeN_%:eLil"ShaaMaa"&<qd.gr>* a reference? or was the intention just to slow down the lector?

While <qd><gr> makes an arc where <gr> is the melodeme with the separating power, occasionally <qd> itself is placed in the text and should be considered strong enough (unlike the one in 2Sam. 17:1 mentioned above). In such cases, it is enhanced with | and <azLg> obtains. In some places (*BnaA* has found 28 out of all 346 <azLg> instances), one can hesitate if <qd>| or <azLg>| is met, such as 4M 3:38 with *~<qd>| ~<gr>* where phonetic reasons for | are weak while <qd>[minipause] <gr> seems probable.


B1c7 %azlaa L:gharmee | ~ <azLg>

The expectant sound of <qd> rise is probably kept in <azLg>, too; only with greater insistence (as no <gr> comes to moderate it). Possibly, its sound reminded the one of <Rv> (or a weaker <olJr>), only for the power of <rv/Rv> to conclude phrases, which <azLg> may be lacking. It can be seen well in Ps. 41:14 “blessed is”<mhMc> “the LORD”<azLg>| “God of”<mhMc> “Israel”<rv>, or more concisely in 36:7, *CiDhQaa,Th:Khaa"<azLg>| ~<rv>*. Unlike <rv/Rv>, <azLg> might have been quite high, as Ps. 79:3 may suggest in its *<il><azLg>|<rv>* configuration where we can think of <il> as possibly a bit lower than <azLg>. (Testing can reveal which setting is more expressive and sustainable throughout.)

Quite an interesting combination are *~<mh.azLg>* words. By standard theories, it is not easy to decide if Ps. 18:16’s *WaJJe"Raa%uU"<mh.azLg>|* should not really be *<mhLg.qd>* (in #<mh.qd>|<mr><Rv><cn><ah><olJr>); similarly so Ps. 50:16. Facing such complexities, questions arise if melodemes were singing after all. It is well-known Psalms were sung and intended for music from their origins. Proverbs, however, are a different kind: not sung in the Ashkenazic tradition (I am not sure concerning the extent in Sephardic communities; my guess is Proverbs are chanted exceptionally and/or partially) and being of a genre particularly speech-like, nevertheless combinations like this can be found there,

¹¹⁸ I fact, I do not see reasonable to carry multiple names over to the melodeme prosody hypothesis though I admit developed musical traditions may be sensitive to melodeme positions in words and numbers of syllables available for a particular trop. Then obviously a rich and precisely differentiated terminology is justified and practical. It lacks a practical sense for my hypothesis. Still, it is probably impossible to keep things simple when it comes to Hebrew ‘accents’. One can only act simply, which is perhaps done best by simply being consistent in his own system, and leave the task of finding interface to other systems to those who think in terms of those frameworks (rather than trying to catch the divergent pictures all by oneself). This is then what I have decided to do. I do not ignore the other systems nor do I consider them inferior, I simply confess inability to reproduce them all equally well (in fact, also understand them well), so I only assume the task to put forward my own position.

too: In Prov. 9:7, Joo"Cee"R<mh.azLg>| has even two syllables less, being a better candidate for <mhLg.qd> (jointly with *nasog axor* due to ~| Lee"C<rv>) than the 4 syllables of WaJJeRaa%uu in Ps. 18:16. In mss, there is not a big difference from ~<mh> ~<qd>| on two separate words, such as in

→  Prov. 5:21. Let us check it in the two most renowned and clearest mss. In #L, <mh> and <qd> are quite close to each other ◀ and the | is an unobtrusive | mark, actually smaller than <qd>. #A offers much the same picture, with | yet more sinking into background by clinging to <X>. ◀ Large spacing and big | are contributions of printed editions.¹¹⁹ In larger stretches of text, <mh> and <qd> marks work quite efficiently as it can be demonstrated on e.g. Ps. 106:48. It illustrates the shape quite clearly: BaaRuU"Kh_Y"<mh.qd> %:eLooHeE"<gl> Ji5Raa%ee"L<pz> MiN_Haa"&oOLaa"M<mh.qd>| W:&a"Dh<il> Haa&oOLaa"M<rv>. Please note the long <mh.qd> rise in the first accentual queue, a low sink and a mid-sink, then possibly the same intonation as at the beginning, only with a minipause, closed with a high-pitched emphasis on &aDh Haa&oOLaaM. Interpreting such nodes by prosody is possible, and if mental-tested, it can offer acceptable results. Acoustic tests powered by TTS engines (stage III of the project) can decide if mental testing was not wishful thinking.

B1c8

Pash7aa

<p\$>

The name “stretching out” could refer to the shape as many other names, or suggest prolongation of the word.¹²⁰ Configurations <p\$> appears in seem frequently to hint at the type of intonation. Is. 20:1 <qd><mh><p\$> appears to be a lower (mid-high) peak, a middle slump, a higher peak so as for <p\$> to possibly be a fairly high rise (save the extremes).¹²¹ The position of <p\$> is following the word. If the stress is on ultima, it is left unmarked. The most appreciated mss repeat <p\$> on penultima if stressed.¹²² It makes a good sense: Provided the rise was an ascending melody over the whole word, a penultimate <p\$> could break the melody, which the ultimate <p\$> would not do. It is interesting to see *furtives* counted, such as in 1Kings 9:25 &aL_HaMMiZBee"aX<p\$> (~aX is not a syllable in the present theory but pronunciation might have differed). For the scholar of today, doubling is made over vocalic marks, not (assumed) phonetic syllables, cf also 10:24, Josh. 7:16. Some occurrences would make one think <p\$> is not a big ‘accent’. Why %:a"ShaeR<p\$> in 5M 13:8 rather than a conjunctive; or, why not %:a"ShaeR<any conjunctive> S:BhiIBhoo"TheEKhae"M<p\$ in place of mn+"zq"? In 1Kings 9:19, why ~<zq> W:%ee"Th<p\$> ~<mn> ~<zq>? What does <p\$> separate here (unless it was not just a melody rise, cf # W:%ee"Th<qd>, the beginning of 9:19 for which a similar rise is assumed). Instances like Judg. 3:13 WaJJoSii"PhuU<p\$> B:NeE"<mn>, however, prove <p\$> was indeed a disjunctive (due to ~uU B~, unlike v. 14 ~uU Bh~ at a conjunctive), at least phonetically if not syntactically. 5M 33:24 shows R:CuUJ<p\$>, a construct of RaaCuUJ, under a disjunctive. Obviously, syntax was secondary. No syntactic juncture is met in 1Sam. 4:2,3,4, either: WaTTi77oo"Sh<p\$> links closely to HaMMiLXaaMAa<zq> (in v. 4 ShiLOo"<zq> might be loosened by accusative but &iM_%:aRoO"N<p\$> B:Ril"Th<mn> Haa%:eLoo"HiLM<zq> is all one construct. Still, <p\$> seems to add a weak emphasis, perhaps by prolonging and raising the tone a bit rather than making a pause.

2M 37:14 agrees almost to the letter and melodeme with 25:27 in surroundings almost literally and melodemically the same but for the following differences: In place of <mn><zq> coming after <at> in 25:27, it equips the identical text with <p\$><zq> following <at>. Apart from two largely known and more or less trivial points (<mn> joins the following melodeme just as <p\$> does, and an ultima stress pointed by <mn> is left unnoticed by <p\$> as mentioned above), the difference in melodemes helps express or emphasize a shade in meaning. (This is what ‘accents’, טעמים, lit. “shades” are about.) In 37:14, BaaT!i!^M is pointed out by linking to BaD!i!^M which, as LaB!aD!i!^M<zq>, is a determined noun whereas, in 25:27, an undetermined noun L:BhaD!i!^M<zq> is more integrated in the sentence by a phrase L:BhaaT!i!^M<mn>. The <p\$> then helps point out the “rods” in 37:14 are another item made by Bezalel while, in 25:27, they only qualify the purpose of the “holes” mentioned earlier. Is 5:2 is an example of <p\$> exceeding <zq>: WaJi!"BhaeN<mh> MiGhDaaL<p\$> B:ThoOKhoO"<zq> let the melody rise on MiGhDaaL (possibly implying a small drop on <zq>) as easily as on B:ThoOKhoO (that

¹¹⁹ This particular word, NookhaX, prints <oo> above <N>, pushing <qd> to front and making it look as a sort of prepositional mark. As it can be seen in the mss, this was not intended by *sopherim* and *naqdanim*.

¹²⁰ Similarly to *meerkhaa* (see iF3.4.3 (11), iiB1c2), “comma” or “lengthener”, having also a somewhat similar effect.

¹²¹ The code to be introduced later, B2a: <qd=iv/v><mh=ii/iii><p\$=iii/iv> (See *Acronyms, simple marking* for reference.)

¹²² For other approaches, see Yeivin 1980 p:195; for characteristics of more mss, see p:19–29 *ibid*.

would keep <zq> as an intonation peak). It might testify to the ambiguous older layer of melodemes (see *PMH I* p:232–233 point II), or simply the superiority of prosody over disjunctive ranks. Another such instance is Kil" <mn> %iI"Sh<mh> 7:MEE, _5:PhaaTha"JiM<p\$> %aaNoo"KHiI<zq> in Is 6:5 as the sentential emphasis is most likely 7:MEE, _5:PhaaTha^JiM while <zq> only concludes a larger unit of <mh><p\$>. Possibly for cases like these a need might have been felt to add detail by means of more melodemes into a crude divisions by phrasal melodemes (see *PMH I* F3.4.2) so as to prevent divisions of large intonation units from misleading into mechanical but mistaken intonation. Supposedly, it was not always easy to anticipate such as LEEMoo"R<zq> in Josh. 21:2 where K:Na"&aN<p\$> is what most lectors would have emphasized, anyway. For slowly ascending tone, <p\$> often associates with <mn> (see e.g. 5M 23:15,22,24,25,26). It is interesting to follow how <mh><p\$> units interact amid a few <mn>s linking to <pz>s for getting speed, and later in the same word with <zq> for losing speed. <p\$> emerges as an intonation for medium importance. Two minor peaks prior to <zq> are sensible in direct speech, especially if emotional (Josh. 7:20) or emphatic (Josh. 23:12, 1Sam. 14:40), also calm (1Kings 7:2, 3; please note <mh><p\$> rises for longer stretches). Contexts such as 1Kings 6:29 might make the impression <p\$><p\$> only keep intonation at a specific level instead of ascending, dropping and ascending again. <mh><p\$> sequences such as in v. 2 above, and dramatic narratives such as in Job 1:19 (a prosaic portion, but see below) seem to disprove it. Both can be found in 2Kings 14:6 and makes sense as it is (BaaNiI"M<p\$> uUBhaaNiI"M<p\$> should be kept separate as they are different phrases). Due to it, in 2Kings 17:26, %:aShae"R<mh> HiGhLiI"Thaa<p\$> WaTToO"ShaeBh<p\$> can be understood as two phrases rather than one. The inverse condition, however, can still be found, such as in Judg. 2:12, Mee%:eLooHeE"<mh> Haa,&aMMiI"M<p\$> %:aShae"R<p\$> ~<zq>. It can be explained prosodically as linked together in a single <mh><p\$><p\$><zq> expression since %:aShae^R is no expression that would deserve a disjunctive by itself. Alternatively, a rate slow-down could have been indicated like that. Pacing down (by lengthening or pausing) is a means to achieve both, to single out a unit of meaning, and add emphasis (see Judg. 14:13 where uUN:ThaTTae"M<qd> raises expectation, %aTTae"M<mr> lacks emphasis and it is LiI"<p\$> that carries the contrastive stress).

Prov 27:10 appears to offer Ree,&:aKhaa"<p\$> which is not a 3'b melodeme at all, <p\$> is used in the 21'b system. #L supports the identification of BHS and BHK while Mp confirms “the melodeme is unique.” #A appears to offer Ree"&:aKhaa"<{,}mr.qd> followed by <gl>). Today, <qd><mh> is often printed. The <qd> agrees with #R (the next melodeme is illegible in my print). Though #L/BHS seem to provide a unique example of merging systems, it is better not to trust too much in a solitary incidence.¹²³

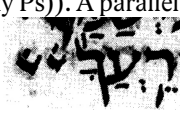
B1c9

Maaj:laa

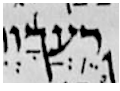
<mj>

The melodeme that remains for *jooredh* and *qadhmaa* types to be complete is *maaj:laa*. For alternative names, see Wickes 1887 and Yeivin 1980. It is traditionally considered a special melodeme though resembling <7f> on a *methegh* place. Due to it, Price 2010 does not deal with it and refers to Wickes 1887 p:73 instead. He, pointing to Jer. 2:31, claims: “Grammarians make the accent here a *servus*, and name it MAAJ:LAA (see p. 26 [where he points to Arabic name MAAJiLLAa, ‘inclined’, and the one in *Diqduqe ha7:e&amim*, MaaTh:XAa, ‘extending’]); but that it is really a Tiphcha in Jer. ii. 31 (where most Codd. give also the subordinate disjunctive T’bhîr, %i"M<tv>), and from Zaqeph immediately preceding in Num. xxviii. 26.” The former location indeed looks very pre*7iphxa*-like, with <zq><tv><mr><mj.at>. The latter is simply

¹²³ Price 2010 counts 47 <az=qd> instances in 3'b (40 in Ps, 1 in Job, 6 in Prov), which is the 3rd rarest in 3'b after 3 <sh> and 31 <Sh> well ahead (p:143). He claims <pz> accepts no *servus* but 1 <gl> (p:148, 220), generalizing instances on p:221 (50 lone <pz> (7 in Prov), 37 <gl><pz> (4 in Prov) and 4 <sth else><pz> (only Ps)). A parallel could be in Ps 32:5 <az><gl><pz> (cf *op. cit.*, fnt 1). (I ignore all “virtual” accents renamed by Price into something else to fit the scheme. That is why I find tab. 92 p:241 unusable. This particular melodeme is considered <azLg> by Price, p:221 fnt 3, p:241 fnt 3. But no trace and no space for it is in #A and no | is visible in #L though a shade on the shadeful background can be found on the spot where | might have been expected. If a | has been erased, it would only confirm | was considered wrong there.) Yeivin 1980 deals only with the 21'b melodemes. The 3'b system is treated briefly from p:264/#358 on. For him, <1st-syll-mh><gl><pz> and <az><gl><pz> (if the <az> word is not stressed on its 1st syllable) is a regular pattern, with examples Ps 5:12 for <az><gl><pz> and Ps 22:25 for <mh><az><gl><pz> (p:271 #369). Quick checks confirm he is right. How can such divergent views be reconciled? A need for reliable data is more than apparent. (For the source data input to BnaA <p\$><gl><pz> see the CD.)



▲ #L with <p\$>
(a half-line above included for clarity)



▲ #A with <qd>

<zq><mj.at>. Yeivin 1980, p:179–180 (#216), was not so persuaded from his own research: Conjunctives of <mj.at> are <mr> (Jr 2:31, cf Wickes) and <qd> (Dan 4:9,18) which would be anomalous prior to <7f>. (<mj.sq> seems to be compliant with mj=7f hypothesis, p:177 #210. He only adds “Masorah treats this as a conjunctive.”) The present prosodic hypothesis has no problem with either <7f.at>/<7f.sq> combination, or with a special <mj.~>. It is the manner it could modify the melodic and rhythmic shape of speech that decides compatibility issues. For it, a 7f-like contour, only compacted into the closing cadence, seems an acceptable assumption to start with.

In my own excerpts, it appears clearly as a conjunctive. In Ruth 1:10, a word joined by a maqqeph and a linking dagesh to the next word, # WaTTOOMa"RNAa<mj>_LLaa"H!<at>, cannot be anything like a disjunctive. Masorah is right in reserving special category for it. Jer. 2:31 Ma%Pee'LJaa"<mj.at> has the two melodemes in neighbouring syllables (it really cannot be analysed differently) so it hardly can explain <mj> as a secondary accent (e.g. *meteg/ga&ja* turned ‘accent’).¹²⁴

B1c10 Mahpaakh < <mh>

This one has been categorized here in B1c under (4) as an *&coolae*-type melodeme, due to its shape that it shares with another one, *j:thiibh*. Given that *mahpaakh* is a conjunctive, serving to more purposes in 21'b and 3'b, consequently appearing in diverse contexts, at times being dependent on them (by syntax and semantics), whereas *j:thiib* is a disjunctive in 21'b, apparently replacing <p\$> in single words, so being less dependent on context, it seems reasonable to deal with <mh> first, and hope its diverse usages be somewhat helpful for <jt>, too, assuming the same shape would be counterintuitive if the two marks would be too dissimilar. Obviously, <mh> and <jt> can be told apart easily: <jt> is a word melodeme, just as <p\$>, but where <p\$> appears to close a sequence, <jt> as if opened it, controlling its short stretch from in front. <mh> is a stress melodeme, sitting left from the stressed vowel, or if absent, right below the stressed onset letter. This is unmistakable despite possibly the two sharing contexts.¹²⁵

The shape, however, is not so unequivocal. The printed < used to be C in some old mss which seems to give a reason to its name “turning around”. Another frequent name of its, (*shofar*) *m:huppakh*, “a reversed (horn)”, apparently justifies the < shape. In fact, one meets a variety of shapes in mss, a ∟ and ∟ being particularly frequent. In spite of its resemblance of <Jr>, a portion of <olJr> (iiB1c1), in mss it looks as if it were descending rather than ascending, *jooraedh* rather than *&coolae*.¹²⁶

So a descending option should be considered first. Does <'mh"mr> in HoO'Lee"Kh of Prov. 7:22 demand it? It might well describe a single descent rather than two parts. But Pi'Th%oO"M<'ol"Jr> probably were two parts, and might give a higher echo ^ to the / \ <mh.mr> of the initial word, just as Job 38:41 and Prov 25:7 do. Echos, however, can suggest the opposite, such as Prov. 19:2 Ga"M<mh>.

¹²⁴ Sometimes, <dx> can get a <mj>-look in mss and in print. BHS renders W:%aeTh_'NoO&aaCil"M in Prov. 13:10 as <'mj"mn>. Looking in #L, it seems indeed so: Th of %aeTh and L of &aL_JaaDh of v. 11 robs N of almost any space so that if there is anything, it can be hardly recognized. If the editors turned to v. 10a for help, RaQ_B:ZaaDhoON reminds of <7r> (it cannot be <mj> as it is alone). Due to analogy, or visual faithfulness, 10b got <mj>. Such approach, however, fails if spaces and distances keep the print standard and only placements are reproduced. #A in 10b also writes the stroke under N though despite close ~Th_N~ there is a lot of space. 10a, however, shows <dx> clearly. If 10b were <mj.mn>, it would be rare as <mj> rises to <at/sq> cadences. It can hardly go well with <mn>. It is <dx><mn><at> <dx.mn><sq> of the verse that should be considered. It reflects the dichotomy of the proverb and fits in syntactic and prosodic interpretations. That is why I believe the 10b melodeme is <dx.mn>.

¹²⁵ Yeivin 1980 #248 p:199 quotes 3M 5:23 with a co-occurrence of the two in semantic and syntactic parallels coming subsequently: <mh><p\$><mn><zq> <jt><zq>. I can add 2Kings 11:7.8, not so apparent.

¹²⁶ It appears especially clear in Firk. 17 of +930, Firk. 10 of +946, neatly written Firk. 93 of +989, in Firk. 1283 of +1058, a neat Firk. 26 of +1036 (as early as ca. +950, according to Yeivin 1980 #44 p:25), Firk. Pap. 144 of +1121 and a carefully written Firk. 34 of ca +975, bound in +1130 (also somewhat in 2 Firk. 94 of +1100 (by Yeivin #45 perhaps a century older) and sometimes also the crucial B19a (#L) of +1008, which, however, wrote the mark often round). Simple arcs are found in the somewhat waving Firk. 124 of +946 (Yeivin 1980 in #39 p:24 mentioned doubts concerning the age) as well as neater Firk. 115 of +994 and mostly also Firk. 225 of +1017 (the colophon of one of the two mss, valid probably for both mss making No. 225, cf Yeivin 1980 #42). Many of those mss are not very carefully written, I am explicit if otherwise. Slanted and horizontal angles are in fact also <mn>s in some mss, such as Cambridge T-S 20(155) which is a targum to 2M 22:22–26 (available at Fridberg Genizah).

W:%aeTh_'NoO&aaCilM
in #L.

RaQ_B:ZaaDh|oON in #L.

W:%aeTh_'NoO&aaCilM
in #A.

RaQ_B:ZaaDh|oON in #A.

Did <7r> repeat it? More secure than assume echos is to take note of real repetitions, such as 2M 32:1 repeated in v. 23. When people are quoted directly, %:eLooHil"M<rv> is followed by %:aShae"R<mh> ~<p\$> <zq> (a configuration appearing again later in v. 1). Whed Aaron quoted them in v. 23, %:eLooHil"M<zq> is succeeded by %:aShae"R<mr> ~<7f> ~<at> (but the next portion makes <mh><p\$> reappear). In terms of the rules that have been drawn from the texts, the alternation is entirely regular, triggered by L:PhaaNeE"NuU <zq → at>. But formal rules are no commentary to the sense. Should the quoted speech have sounded differently from the direct speech? It often happens in languages and differences can be dramatic. If we were to insist the speeches sound identically, <mh> would be a drop if <mr> was, too. But it would be a shaky assumption. Clues from context are often contradictory, too. 1M 1:21 has <qd><mh><p\$>. The high rise on W:%ae"Th<qd> seems to hint KoL_&oO"Ph<mh> should be falling, such as in 5M 31:21. But the KoL_ &oO"Ph KaaNaaPh<p\$> phrase might have been a slow take-off to a <zq> point, such as in 5M 31:17. Something similar might have happened in Is 8:6 where Kil"<mh> though syntactically belonging to Ja"&aN<rv> from which it would drop down, could in fact be intoned as rising to the next verb Maa%aS<p\$>. If it were a drop, the < shape might indicate the fall need be cut and not allowed to drop too low as the melody was to rise again on <p\$><zq>. (A similar function might have been fulfilled by the <pz> in v. 2, cf B1c5 above.)

Quite a strong evidence is provided by standard combinations with <ct>. *M:cunnaeraeth* versions are available only for <mh> and <mr>. While <mr> has been established as descending (see iF3.4.3(11) and iB1c2), what distinction would be in <mrMc> and <mhMc> if both would have been <ct.drop>.

Often, a TN"K reader meets <mh> on locations where a rise seems more probable than a drop. Not so much between two highs, such as <p\$>s in Josh. 15:18 where <mh> is syntactically attracted to the latter <p\$>, which, as shown above, is not as secure a basis, though between lows such as <7f><7f> <mh><p\$> in 1M 40:13 it appears credible in contexts where intonation can be supposed to keep calm. But it is especially opening expressions (1Sam. 3:10), quite likely if they happen to begin direct speech, such as in Josh. 9:6, or a contextless proverb, such as Prov. 16:32 and 1Sam. 29:5 (please note how it parallels with <7f>). In Is 7:6, the direct speech follows LEEMoo"R<sq># in v. 5 and is opened by the call Na&:aLae"<mh> BhiIHuUDhAa"<p\$> ~<zq>. A descent is improbable. The latter half of the verse might have its rise deferred by <mr> and climb only at Mae"LaeKh<p\$>. If the <mh> and <mr> verbs should differ, having a similar position, the same idea and speech, they would not differ by stress nor tempo, it would be only intonation. The meaning could be something as "if we indeed do this, it ends in setting up our own king." See possibly similar contour in 7:13, and 1Kings 8:23ff for speech.

Instances such as Ps 24:9 appear to give further possible explanation for the shape. 5:%uU"<mh> ~<azLg> ~<rv> uU5:%uU<dx> ~ ~<at> with its parallel invocation suggests parallel intonation. The former part looks as a short rise taken up by <azLg>, the latter one might be a longer ascent on <dx>. If <mh> is iconic, it could be $\bar{\wedge}$ or \sphericalangle , or for \sphericalangle as if a \sphericalangle lever. Even shorter, for <mh><7r> connection in Prov. 25:28, 26:25 and 29:13 in a single expression. Can a <mh=rise> be the winning hypothesis?

While it seems so, without considering properly all the occurrences, it cannot be responsibly done. Moreover, there are quite a few places where <mh> could be interpreted as having it both. Which is not impossible as intonation can well be a small slump at the start before it begins to rise again. A fall-rise, though often associated with prolongation, a reverse may be true in a language. This is what might be a distinction of <mh> against <p\$>, <dx> and <mr> that were possibly prolonging. In 2Kings 14:26, <mh> and <mn> appear to have similar functions: speed the speech to a cadence. A distinction is to be found also from <gl> and <ah>, graphical fall-rises. It is typical of <ah> to go on to in <olJr>, so the two legs could have been roughly equal. <gl> might be introducing <pz>, so either a proportionate fall-rise, or a longer fall; or perhaps the difference might have been elsewhere (rate or rhythm) since <gl> is a conjunctive and <pz> a disjunctive. <mh> in turn was a frequent entry to <p\$> so the rise might have been the main feature. Higher rate is unsustainable due to e.g. a <mh.mr> in Ps 13:6.

The fall-rise contour can be sometimes suggested by surrounding melodemes (though there is often more interpretations at hand and only practical testing by TTS with appreciating the sense can suggest what is really to be preferred). A hard issue is high rise to <mh> to high rise sequences where the words obviously belong together, such as <qd><mh><p\$> in 5M 31:17 and 1Kings 9:19. A fall-rise <mh> is in a better condition to do well in such contexts. <gm><mh><p\$> in 1Kings 22:12 could cope with a sharp break but a smoother contour is no less probable, especially if it covers an annexation (construct, *smixut*) such as MaL:KheE"<az> J:HuUDhAa"<mh> in 2Kings 23:11; or 10:29 X:a7aa%eE"<gm> JaaRoBh&aa"M<mh> BaeN_N:Bhaa"7<p\$>, and especially, in Is 13:4, QoOL<Tl> Sh:%oO"N<gm> MaML:KhoO"Th<mh> GoOJi"M<p\$> Nae%:eSaaPhi"M<zq>, which are long descending-ascending

lines that could hardly be halved by a break. Configurations like that are frequent as can be seen in 2Kings 23:33.36, 24:8, Is 8: 14 etc. It may be interesting to note that the ‘saddled’ member (the one with <mh>) seems to be the stressed one, such as N:KhOo"<mh> in v. 23:33. While PhaR&Oo"<az> N:KhOo"<mh> here belongs together, at other times the grammatical link points to the other direction, such as LOO_Ji5AA"<az> GhoO"J<mh> %aeL_GoOJ<p\$> in Is 2:4. A context-free particle, such as %aa"Z<mh> in Ps 2:5 at the beginning of the verse might have sounded emotive if not almost threatening (and possibly not shortened, but prolonged, as <mn><mn> follows). In the context, e.g. in a narrative, a fall-rise may sound inviting to listen more. There are two such stretches in 2Kings 11:11, around HaBBa"JiTh<mh> and &aDh_Kae"ThaePh<mh>, seem similarly intoned with the same effect.

The surrounding melodemes can be quite a subjective guide in guessing the proper intonation. If one can find a parallelism in intonation, it may be more helpful (such as in guessing the meaning of hapax legomena). Is 5 in 12b seems to have two fall-rises, the latter is low and doubled, <mr><7f><mr><sq>, the former appears higher, <az><mh><p\$><mn><zq>, raised on W:%ee"Th<az>, then slumped on Poo"&aL<mh>, raised again on Y<p\$> (and open to what is next through <mn><zq>). <mh> is easy to see as a dropped mid-rise, otherwise the jump from a supralinear to sublinear and back again is hard to justify. If <pz> was an upward pointed descent, a take-off from a slide, <mh> as a rise entered from above had no counterpart in supralinears so its usage among them is reasonable and the contour was smooth. Is. 2:6–9 are a chain of higher and lower fall-rises. The falls are made of <mr>s or <mh>s, the rises consist of <7f> and <p\$>s. Parallelism in words is strong and it may be supposed that the <mh>s do not climb from the bottom just as the <mr>s need to start from somewhere up. More parallel phrases are found in 3:24. W:Tha"XaTh<qd> X:aGhoORAA"<mh> and W:Tha"XaTh<qd> Ma&a5Ae"<mh> are phrases just as Tha"XaTh<qd> Boo"5aeM<gr>, W:Tha"XaTh<mr> P:ThilGil"L<7f> as well as _Tha"XaTh<7f> Joo"Phil<sq>. The contour has to go down from <qd>, then up to <p\$>, so a simple picture is to think of <mh> as a mid-low fall-rise, which is in line with the calm manner this prophecy is presented (cf 4:4 sublinears). Unlike <pz>, rising seems the more important direction in <mh>. (Though it is not so obvious what was the feature of <mh> in Ps 11:2's <mh><gl><pz><il><rv> sequence. But please note the mid-high placement of the whole phrase. <mh><gl> seems the lowest.) Is. 2:7-8 shows two phrases where <mh><p\$> (<zq>) contrasts with the points, <mr><7f>. Actually, the phrase WaTTiMMaaLEE^ %aRCoO^ ~^ is repeated three times and the third one, in v. 8, lowered the voice to <mr><7f><at>. The previous <mh><p\$><zq> raise expectation, the last one makes the point. A somewhat similar structure can be seen in 2Kings 11:17—BeE"N<mh> Y<p\$> uUBheE"N<mh> HaMMae"LaeKh<p\$> ~ uUBheE"N<mr> HaMMae"LaeKh<7f> uUBheE"N<mr> Haa&aa"M<sq>. 5M 34:4 may suggest <qd><mn><p\$> form a unit in intonation as it does in meaning. Josh. 5:9 makes one think if Shee"M<mn> HaMMaaQoO"M<mh> HaHuU"(%<p\$> does not in fact show that <p\$> covers the whole phrase regardless if the key word is under <p\$> (often) or <mh> (here). The contour would be an upswing with the low point the focus. In Josh. 7:11, please note the rises W:Gha^M first in <p\$> (as it shows, not always with autosemantic words, here it is due to intonation), then <mh> twice, then <mn> (to put it close to <zq>) and finally, <7f> to descend through <mr> to <sq>. In 3'b, the rise can be achieved with <7r>, such as in Job 21:9. (Again, please note the ‘depressed’ tenor in sublinears.) Ezech. 20:31 is rare Ni7M:%il"M<qd:mh> with <mh> and <qd> sharing the same letter, syllable and word. No syntactical meaning can justify that (cf Yeivin 1980 #245 p:197). Prosody could theorize the contour can rise throughout all the nine syllables between <tl> to <p\$> in *either* a high *or* a low pass.

B1c11 M:huppakh L:gharmee | <mhLg>

Unlike <drLg> (iiB1c4) and like <azLg> (iiB1c7), this melodeme is usually included in standard lists of ‘poetic’ ‘accents’,¹²⁷ so there is no need to dispute it as an entity. Unlike <azLg>, which seemed natural to have its high rise concluded somehow, <mh> often appears smoothly to be taken up by the following melodeme, especially <p\$>, that it is reasonable to doubt were it not just <mh> + |, after all. The statistics by Price 2010, tab. 78, shows no consistent pattern of collocation, appearing before 9 disjunctives (not counting 2 ‘virtual’ ones) and having no conjunctive (except Prov. 6:3), claims Price, which, however, Wickes countered with almost two pages of examples (p:92–94). What is undisputed

¹²⁷ Wickes 1881 p:92 No. 2; Yeivin 1980 p:264 #357; Joüon | Muraoka 2003 §15.11a; Dotan (2007) Masorah (in *EJL*, 5.1.3.3.1 p:269); Price 2010 p:223; Jacobson (2013) Biblical Accents: System of Combination (in *EHLI* p:301); to name a few. The tradition is old, notably if מורה ומערב ~ פונה מורה in *Diqduqe ha7e&amim* (Baer, Strack eds. §18 p:20) includes <mhLg>.

is the variety of contexts it occurs in. This makes it appear as king, duke and officer in the established terminology. It is desirable to take note of instances where | seems to be motivated by a pause (real or virtual, i.e. a break) rather than other reasons (such as a visual separation¹²⁸). One such place seems to be Job 20:29 where ZAE" <mhLg>| can at least accept a pause quite naturally. In Is 10:14, <mhLg> in KhaQQee"N <mhLg>| JaaDhiI" <p\$> separates an adverbial KhaQQee"N <mhLg> (“as a sort of nest”) from the subject JaaDhiI" <p\$>. This Lg i.e. | is important since KQN_JDI or perhaps KQN <mh> JDI <p\$> might have appear the same, but a very different sense would possibly have quite a different melody (so one may ask if there were KQN <mh>). It is an interesting speculation: <mhLg> might have had different sound than <mh>, and possibly should have had. In Job 20:23, J:Hi" <mhLg>| is counter-balanced by J:,ShaLLaX_BoO" <mr> and the intervening <il><rv> could well be detached by a pause. One can imagine an unbroken intonation, too, and to check if a shade of the meaning is lost then, it is better to leave to practical testing. Job 21:28 where <mhLg>| <il><sq> is a single annexation with any pause inside improbable seems to show how easily ‘mental intonation’ can get misled. Safer is to admit reasons for some <mhLg> appear opaque (or are not Lg at all). Only, were it not a general tendency to detach an initial word from the rest of the sentence (initial expressions do seem to be special in Msh prosody). In Ps 13:6, Wa%:aNil" <mhLg>| (<mn><cn>) appears to be set off quite naturally, as well as Prov. 27:27. (Please note they also exemplify reasons for a raising contour, W:DheE" <mh>| appears to introduce the higher level of X:aLee" Bh <il> ~ <rv>.) A less natural pause appears in Prov. 16:11, so it may be a better example of an initial set-off: a short low rise, break, a longer low rise. A pause justified by syntax is in Prov. 28:24, # GoOZee" L <mh>| '%aaBhiI" W <mhM> W:%iMMoO <rv> as GoOZeeL was to be linked to the whole unit of %aaBhiI W:%iMMoO, so it is unrelated to the beginning. Also Is 3:7, # Ji55AA <tl> Bha" JJoOM <qd> HaHuU" (%) <mhLg>| LEEMooR <p\$> is an oratory pause if not syntactic. (Again, please note the high <qd> ~ <p\$> surrounding.) Noteworthy are also sequences of two <mh>s made into <mhLg><mh> as in Ps 135:11 and Job 28:3 where the words were probably to be rendered as two separate rises rather than a single long rise noted down in two marks. Prosodic rather than syntactic is the whole <mhLg><p\$><zq><tv><mr><7f><at> section in Is 4:5. It is striking how divergent the melodemes are from syntax. Whereas [[<mhLg>] <p\$>] [[<zq>] [<tv><mr><7f>] <at>] are units of syntax, the logic of melodemes seems to run counter to it. The standard ‘accent’ syntax appears not of much help,¹²⁹ but if it was motivated by a recommended manner of reciting, the prosodic values of melodemes are able to create an interplay of breaks (such as <mrLg>) and virtual pauses (such as <p\$> lengthening) that can assist in aurally capturing the meaning of this complex expression: &aaNaa"N <mhLg>| <=low rise to break> JoOMaaM <p\$> <=rise to top, a pause made by the prolonged [...aa]> W:&aa\$aa"N <zq> <=a high fall, no cadence> W:Noo"GhaH! <tv> <=breaks the low fall to mr> %ee"\$ <mr> <=takes up the zq-tv contour> LaeHaaBhAa" <7f> <=this makes the conclusion that is usually done by zq, only lower> Laa"J.LAa <at> <=closes the whole 7-word unit>.

B1c12 J:thiiv < <jt>

The site www.rakkav.com/biblemusic/pages/attempts.htm claimed boldly (on Dec 16, 2011¹³⁰): “But in eleven cases noted by the Masorah (Leviticus 5:2; Deuteronomy 1:4; Isaiah 5:24; 30:32; Jeremiah 14:14; 16:12; 22:30; Daniel 2:10; 7:27; Ezra 6:8; 9:4), mehuppakh is replaced by yetiv and is immediately followed on the next word by pashta (Yeivin 1980 p. 199)! Moreover, the rest of te`amim used in all the accentual-verbal phrases where these substitutions are found are exactly what are used elsewhere in parallel circumstances with mehuppakh. In effect, in the eleven places cited above, the one thing that really differs in the accentual-verbal phrase is the verbal accentuation -- and the melodic accentuation is merely shifted in position to account for that change. Is this not evidence that mehuppakh and yetiv are really one and the same ta`am, and that yetiv is not a musical variant of pashta, but simply mehuppakh in a different position?” As far as I am aware, accentuologists do not support that statement. They notice another equivalence. Yeivin 1980 #248 p:198, suggests: “*Yetiv* has the same pausal value as *pashta*, but indicates a musical variant.” Price 2010 also claims: “*Yethib* is the substitute accent for *Pashta*” (p:83). Both then go on to define conditions under which it can happen. Also Wickes 1887 observed that “*Pashta* appears ... under two forms, *Pashta* proper and *Y`tibh*”

¹²⁸ Such as in Is 6:2 where ~M MM~ probably needed ~M | MM~ though <mhLg> would be possible here, too. A final letter shape {M;}, ~{M;}, MM~ by usage, is a late graphic variant (Persian times), cf Is 9:6, L:{M;}aRBEE, inconsistent till as late as Dead Sea Scrolls, cf Tov 2011 p:210. Anyway, ~{M;} | MM~ would also have a reason.

¹²⁹ { {<mhLg><p\$> } <zq> } { {<tv> } {<mr><7f> } } <at> } with <zq> and <7f> units, not corresponding to meaning here.

¹³⁰ The Johanan Rakkav’ site was still there in Jan, 2017, but reorganized and the text unavailable to check again.

(p:99 ftnt 1) and elsewhere “the substitution is entirely on musical grounds” (p:106).¹³¹ Only the features that can help recognize <mh> from <jt> are dealt with later in the texts mentioned. Were it true what Rakkav suggests,¹³² <jt> should show conjunctive properties, or <mh> should work disjunctively, or a mixture of the two properties should be observable. Leaving this task to later digital analysis, here are a few probes: Jer. 34 :3 LOO<jt> ThiMMaaLee7<p\$> and 37:7 KOo<jt> ThOOM:RuU<p\$> are instances (the only two that BnaA found) which prove <jt> was not (always) disjunctive (such as in 1Kings 12:10 which can represent the regular configuration by KOo" <jt> T:DhaBBee"R<mn> with T~ rather than Th~). No instance of a <jt> word beginning with a spirant was found¹³³ which suggests <jt> started new prosodic units (such as in Judg. 9:2 and 1Sam. 20:8) rather than continuing some. It is in fact implied in Yeivin’s condition that if “no servi precede it” (p:198), <jt> can replace <p\$>. This replacement thesis (put down by Yeivin more clearly than by Wickes 1887 p:106) led Yeivin to explain <jt><p\$> sequences by supposing two units of an equal value. Even the examples he himself provides (1M 22:16 Ja&aN<jt> %a:Shae"R<mh> &aa5il"Thaa<p\$> and the 11 listed in Masora), to which I can add my own, Ja&aN<jt> Kil" <mh> ~<p\$> in Is 3:16, have one ask why formal words such as conjunctions should demand to split a single <p\$> unit in two. A reverse case, such as (in Yeivin) %a,X:aReE<p\$> DaeRaeKh<jt> M:BhoO"(<mn> ~<zq>), does not seem more compelling (why %a,X:aReE<p\$>?) though, admittedly, Dae~ rather than Dhae~ supports there a break, be it a minor one, was felt. On the other hand, <jt> seems to have much narrower distribution than <mh>. It makes a break *in front of* <jh> rather than following it as typical disjunctives do (so that Jer. 34:3 and 37:7 do not disturb). What Rakkav claimed above, however, is apparent: <jt> and <mh> are visually identical and differ by placement only. His claim might get some support if their respective intonations could be also believed to be identical (admitting that placement differences can cause minor contour differences, too).

Concerning intonation, 1Sam. 26:25 provides three similar clauses, two of which are syntactically analogous and allow to believe their melodies were alike, <jt><mn><zq> and <7f><mn><at> (here, 7f is no disjunctive, at least syntactically), notably <jt> might have been a similar low rise as <7f> was. All the three clauses, actually, might have had a comparable rising contour concluded by small cadences. In fact, ascents seem to be a typical context, cf 1Sam. 22:13. Low starts are typical of calm reservation, such as in 1Kings 11:11, <jt><mn><mn><zq>, please note also <mh><p\$>; and a signal: more is to come, such as %il"Sh<jt> W:KheeLaAW" <mn> B:JaaDhoO" <zq> in 2Kings 11:8 introduces the point in <mr><7f><at>. In Is 7:9, it is as if <jt> provided low base for longer climbs, %iM<jh> LOO<mn> Tha%:aMil"NuU<zq> so that <zq> with <jt> and <zq> as the endpoints while <mh><p\$><zq> as if composed the line of components. This way perhaps the Rakkav’s surmise could be reconciled with the features other accentuologists have observed: <mh> and <jt> may relate to similar low rises but the difference in position is more fundamental¹³⁴—while <mh> is stress-related, <jt> is phrase-related.

B1c13 Shalshaelaeth q:7annaa ## <sh>

This melodeme might not seem to be of a *&oolae* type (4) at the first sight. But, taking a second look, it can be found the ‘chain’ consists of three small < stacked one on the other. We have earlier tentatively divided the tone range in three belts or bands, ☐ a low, mid and high ones. It is only consistent to think of < as related to each of the bands, three stacked rises, or rather one long upswing from bottom to top.

As the melodeme is found only eight times in TN"K (all in 3'b), it is easy to check all of them manually (Ps 3:3, 34:8, 65:2, 68:15, 72:3, 137:9, Prov 1:9 and 6:27). Mostly, the context seems to support the speculation concerning what the shape means: Most of the occurrences are between <mh> and <il> (or <mhLg> in Ps 137:9) or <mh> and <ct.~> (<mhMc>, Ps 34:8, 68:15 or <mrMc>, Ps 65:2, 72:3). The only one instance that appears to elude the simple interpretation is Ps 65:2. It is to be taken seriously as <sh> has no | (unlike <Sh>|), hence no break or pause can step in for rescue. The conjunctive <sh> is

¹³¹ This opinion seems especially reverberating. Drescher (1994) *The Prosodic Basis of the Tiberian Hebrew System of Accents (Languagev:70 no:1:1–52)* explains that <p\$> changes into <jt> in front of one-syllable words as <p\$> cannot stand on the beginning of words for musical reasons [°jh: which ones?]. It is unnecessary in my view if assumed <p\$> is a rise of which <jt> could be the beginning, so across a short, one-syllable span, <jt> is what remains of <p\$>.

¹³² Unless I misunderstood Rakkav he misunderstood that <jt>, not <mh>, replaces <p\$> in the texts mentioned.

¹³³ The search pattern was a crude one, \s"[BGDKPT]h\S* <[^>]*jt. But even that can indicate at least a low incidence.

¹³⁴ Obviously the issue is also one of categorization: What makes a single melodeme, and what the differentiation is. We are free to define and regroup prosodic units as we like. Still, keeping the MsH categories has some merit.

expected to create a smooth contour with no sharp breaks. The 65:2's <mh><il> <sh> <ct.mr=mrMc> has probably a syntactic juncture, anyway. It depends on the manner the noun Dhu,MiJJAa"<il> is linked to the noun Th:HiLLAa"<sh>. There is no direct annexation, but still, there is Th~, not T~, so if there is a break, it cannot be strong. The intonation probably rised from L:Khaa"<mh> up toward Dhu,MiJJAa"<il>, then via a minimum phonetic juncture again bottom up through Th:HiLLAa"<sh> culminating on %:eLoo'HiI"M<ct.mr> to get a cadence in B:CiJJoO"N<at>. Other locations appear to be simpler to interpret: In Ps 3:3, it is easy to see %eE"N<mh> J:,ShuU&aa"ThAa<sh> <il> <il> as a slight take-off on %eEN with most of the climb having been done by J:ShuU&aaThAa. The high level is then held by the two <il>s. If a <ct> is to take the tone up as in Ps 34:8, 65:2, 68:15 and 72:3, the contour deflects prior to a next stress (<ct> is to indicate a pre-stress peak). The starting <mh> only marks up the starting point of the rising contour that is to cover all three zones. Or, as in Ps 137:9, the melody can break on <mhLg>| and start all over again. Please note that ShaeJJOOXee^Z W:Ni~ are the syllables through which <sh> climbs up, from stress through stress to stress. A comparable number of syllables are covered by <sh> in Ps 34:8 to be bent in Saa'Bhil"Bh<mhMc=ct.mh> and rise again at least mid-high to get a <rv>cadence. A simpler version of <mh><sh><mhMc><rv> is <mh><sh><il> of Prov. 6:27 where it is interesting that %I\$ %\$ demanded no | and made no <Sh>| of <sh>. There were no reasons for a pause, especially if %iIsh was not to lose its general meaning 'someone'.

B1c14 Shalshaelaeth | # <Sh>

Occasionally, there are reasons for a break and these make <sh> into a disjunctive <Sh>|. Actually, it happens more often, so <Sh>| is not so rare as <sh>. Price 2010 p:71 distinguishes <Sh> in 21'b which are 7 (ftnt 35 lists them all, ref. to Wickes II, 85) while on p:143 <Sh> 3'b occurring 31 times (mainly in Ps). In 3'b, it replaces <rvMg> (p:147, 185) and can accept <mr> as a *servus* (p:148) so a 21'b <Sh> and a 3'b <Sh> are not the same (which might be a reason to accept more specialized terms *Shalshaelaeth* <\$I> in 21'b and *Shalshaelaeth g:doolaa* <Sh> in 3'b); however, *Shalshaelaeths* are served (by <mr>) only in 3 instances (1 in Ps and 2 in Job, cf Price p:186). It is a question if three units in place of two should be introduced, especially if the intonation may be a single one, a large climb, or possibly, if a break follows, a peak contour. It should be reminded Yeivin 1980 counts <Sh>| as a replacement for <sg>, and mentions Masorah speaks of <sg> often as “zarqa” (p:90), or if it needs to single out particularly <sg>, as a “follower of *zarqa* – HaaRoODheePh L:ZaRQAA or &oOQeeBh HaZZaRQAA” (#227 p:188). Hence it seems the tandem <zv> ~ <sg> made a single unit for the Masoretes, perhaps due to intonation, of which, interestingly, the <zv> peak rather than the <sg> cadence was considered the one more prominent. Then, a shorter replacement <Sh>| would be eligible if there was no space for the whole intonation course and what was perhaps only needed was to reach the height and descend. According to Yeivin 1980 #229 it occurs on the first word in a verse (he lists all the 7 cases in p:189).

The replacement can be clearly seen in Ps 29. In v. 1, LaY<dx> ~ LaY<rvMg> are related by its low rise and high fall-rise that creates expectation. It goes like that throughout the psalm in its 9 <rvMg>s. All of them appear expected due to analogy or intonation parallelism, hence we could also expect a <rvMg> in v. 11—but there is a <Sh>| instead, both in #L and #A, so it is by intention.¹³⁵ It appears that <Sh>| marks up a peak of sense. Apparently, it can create contrast where there was none. Job 5:19 starts with B:Shee"Sh<mn> which sounds as an ordinary statement until uUBh:Shae"Bha&<Sh>| comes and makes it a contrast. Or, it brings the repeated word to emotional heights, such as in Is 13:8 W:N,iBhHaa"LuU<Sh>| set off from the next <mh><p\$><zq>. In Ps 13:2, &aDh_%aa"NAa<mn> ~ &aDh_%aa"NAa<Sh>| and again in v. 3, &aDh_%aa"NAa<az> ~ &aDh_%aa"NAa<Sh>| can sound quite emotionally. This can hardly be a result of an impersonal ‘accent’ grammar or syntax rules. Quite unmistakably can a contrast be pointed out in Wa%:aNu"XNuU<Sh>| in Ps 20:8. (Why it could not be <rvMg> as in Ps 66:3 which is also emotional, but not so much concentrated on a word?)

It is worth noting that if phonetically short vowels carry the core of the melodeme, such as in Ps 12:8, TiCC:Rae"NNuU<Sh>|, or M:&a"7<Sh>| in Prov. 24:33, peaking had to be quick. Conspicuousness of uses where it seems emotionally justified, however, works against acceptance of locations with no such apparent reasons for a peak, such as Job 32:6—Waa,%iIRAA"<Sh>| did not need such saliency; or did it, after all? And if it did not, was it not music what helped create all that? Psalms, or at least a

¹³⁵ One could say it is by rule or ‘accent’ grammar (indeed, it is a single word between <at> and <7r><mn> court of <sq>). But this rule or point of grammar is derived from just a few observed cases. I prefer to ask for meaning.

LOO_Baa"%uU<zq> of 7:17, 19 etc. can be explained for <mn> to be pitch-neutral. In some contexts, it demands that <mn> had a contour, such as a rise in N:ThaTTiil"W<mh> LaLLeWil<p\$> W:LaGGeeR<p\$> {please note that <p\$> <p\$> can be two rises, or one} LaJJaaThoO"M<mn> ~ <zq> in 5M 26:13 and 2Sam. 13:5 between <dr> and <rv>. Or, it could mark out beginnings of the following melodeme's contour, such as it can be observed in Job 1:8 (still within the 21'b system) before many of the melodemes, e.g. %iil"Sh<mn> Taa"M<dr>, and very clearly in v. 21 LOO_Xaa7Aa"<mn> %iJJoO"Bh<at> where it is Xaa7Aa, not the %iJJoOBh that need to be emphasized (so perhaps <at> intonation applied into its <mn>). Between <zr> ~ <sg>, it probably had a higher tone than it would seem by its sublinear placement, or otherwise the intonation would be too wavy, which does not seem fitting in some contexts, such as a narrative in 1Sam 11:11 or a description in 1Kings 6:32 (there, it does not fall too much even after <sg>; cf a similar <mn><Tl> on the beginning of 1Sam. 22:2).

Prov. 10:24, 27 and 29 are # <mn> <dx> which is difficult to interpret unless one realizes it cannot be made differently. It is not possible to write (v. 27) JiR%aTh<dx> Y<?> as Y would have to get its own disjunctive, which would break up the nominal JiR%aTh Y and create a different effect, such as in Ps 56:11a, 12a, where <dx> and <mn> switch positions, Bee,(%)LooHiIM<dx> %:aHaLLee"L<mn> (v. 11a), Bee,(%)LooHiil"M<mn> Baa7aXTiil<dx>, in keeping with what is stressed. The structure is # {<dx>} {<mn><at>} ~ # {<mn><dx>} {<mn><at>} ~. One cannot put <dx> forward in Job 3:19, Qaa7oo"N<mn> W:GhaaDhoOL<dx>, and keep W:GhaaDhoOL connected. A <mn> is needed since <dx> covers a word, but not a whole annexation. Configurations such as HoO"N<mn> &aaShiIR<dx> in Prov. 10:15 do not draw on an inherent intonation of <mn> but rely <mn> has no inherent intonation. What, however, long series of <mn>s imply? See 1Kings 6:1 that starts with five <mn>s in a row concluded by <pz> and adding two more. Was the narrative to open in a monotonous voice?

Alternatively, could some **inherent intonation** be assumed for <mn>? Let us get back to Is 8:9 to find out a repetition HiTh%aZRuU"<mn> WaaXoo"TTuU<zq> Hi,Th%aZRuU"<7f> WaaXoo"TTuU<sq>. If we could assume the two phrases are similar, it could be mid-level<mn> mid-rise<zq> low-rise<7f> mid-fall<sq> or something like that to let the listener feel the latter phrase is a more emphatic version of the former one. What was to be the difference between KoL_Haa'&eeDhAa" <mn.zq> in 4M 15:35 and KoL_Haa'&eeDhAa"<rv> in v. 36? Obviously Haa'~<mn.~> in v. 35 was a secondary stress enhanced somehow, and the additional feature might have been intonation, rate or amplitude. In Is 8:7 Haa&:aCuUMiIM<p\$> W:Haa'RaBBil"M<mn.zq>, the <mn.zq> word is no substantially longer than the <p\$> word so there was no inherent need due to an excessive length of Haa'&eeDhAa" and W:Haa'RaBBil"M. The reason could have been prosody. The frequent pattern <p\$><mn><zq> is met again in v. 8 but as early as in v. 9 it can be seen a configuration could well have been different. In Josh. 11:5 # WaJiWwaa'&aDhuU"<mn.zq> starts the verse by ~'~<mn.~> to go on by ~ <7f><mn><at>. What was the need for # ~~~.zq> on the first word (and not, say, <Sh>|)? Why {Waa'}{&aDhuU"} in two consecutive syllables (though the latter has a slow onset {&aDh~})? Other times, the syllables are not consecutive, such as 12:8 uUBhaa%:aSheeDhoO"Th<mn.zq>. Does it contribute to the <p\$> <zq> contour, perhaps with what makes # <mn><mn><pz> of v. 7 a definite, and not variable, start? 5M 24:22 # W:Zaa'KhaRTaa"<mn.zq> could not be <Sh>| as <7f> follows,¹³⁸ but neither it is <Zq>, so apparently <mn.~> affected the selection and was meaningful, not formal. Having earlier decided to disregard differences of 21'b and 3'b (sub)systems in search for the fundamentals of their meaning, we can approach Psalms, where 71:23 and 104:7 offer <mn.mn> words: # T:RaNNee"NNAa"<mn.mn> (~<dx>) and # MiN_Ga&:aRaa"Th:Khaa"<mn.mn> (~<at>), respectively. If <mn> meant just quickly to speed over a word to come to another, concluding melodeme, one <mn> would do. Moreover, Msh had {_}, maqqeph, to make a word a free-rider. TiShKaaN_&aLaA"W<mn> (~<at>) in Job 3:5 shows <mn> differs from ~_~ since here we have both. One could still save the void <mn> hypothesis by assuming ~~(no stress)_~^, which is right, but... Let us come back to long series of <mn> (with which we concluded the previous topic, 1Kings 6:1). In Prov. 13:8 we have it both, # ~<mn> ~_~<mn> ~<at>. It is 6 syllables before <at>, a stress melodeme, is reached. It is hard to think of deriving intonation of them all from <at>, the less so given <at> is a phrase melodeme that marked a conclusion with no obligatory phonetic value of it (assumed so from *PMH I*:232(II),242). The manner of writing ~_~<mn> appears exactly as ~_~<mr> (with a definite contour) in v. 9. It might still have been a descent like <mr> but if a 'level' would be intended, the descent would be less and slower, in the natural decrease of pitch. So if

¹³⁸ Unless the 'accent' syntax is completely invalid, which does not seem so, as it has been derived from the same data. The question is only if the reasons for particular collocations are prosodic, or there are 'just because'.

we supposed there was a melody, we are not forced to exclude falls. Actually, the variety of melodemes that can ‘govern’ <mn> has us think the melody (if it was melody) must have had a degree of flexibility. But an essential melody to <mn> is worth considering. 1Sam. 9:13 mentioned already for <pz> has a series of four <mn> (~<pz>) at the start (6–10 syllables). Was the reader supposed to anticipate <pz> at the conclusion? Or, learn the diction step by step? Josh. 19:51 is an interesting verse by containing so many <mn>s: <mn><pz> <mn><mn><mn><mnLg> <gl><qp> <mn><mn><tl><azLg> <mhLg> <p\$> <mn><zq> <7f> <mn><at> <Zq> <7f><sq>#. Apart from one <gl>, they make almost all the *servi* here. The text introduces (is a heading of) a description, so not very dramatic stuff, by all means. If a <mn> was a skipping melodeme, a lector would have to do a lot of skipping while scanning the text. It could be doubted if the Divine Name should be included in ‘skipping’ such as in Prov. 3:12, ~<mn> ~<mn> Y<mn> ~<at>. It is true the point of the proverb is in a few words in the latter half of the verse including JoOKhil" aX<at>, but a little bit more salient melodemes could have certainly been invented for the former portion, one or two words, would <mn> be so tonally empty mark. Especially in # <mn> verses such as Prov. 10:30, Job 10:4, 5 (2) or 5M 24:4 (3+{ }+<TI>), they probably were to start off in midrange of the band and get modulated later. It can also apply inside e.g. Job 10:1 (2), Judg. 19:9 (4).

Is. 10:19 is interesting in having the core of the meaning on <mn> rather than a ‘higher’ melodeme. In MiSPaa"R<mn> Ji,H:JuU" <at>, *mispaar* was to intone more saliently than *jih:ju*, a formal word. In Job 2:13, W:ShiBh&a"Th<mn> LeELoO"Th<at> has the halves equal in meaning but the worth is in comparing with ShiBh&a"Th<mr> JaaMil"M<7f>. The <mr><7f> is low drop low rise, so the next <mn><at> can be assumed to be a unit both in meaning (obviously) and prosody. <at>, however, is a generally cadential melodeme, a poor guide for the contour. Only, we can reasonably think of a lower shape, just as the <mr><7f> was. Higher levels can be assumed in contexts such as 2Sam. 11:20 where %iM_Ta&a:LaE" <p\$> X:aMa"Th<mn> HaMMae"LaeKh<zq> suggests <mn> was acceptably high as if it were too low, the emphasis would shift to HaMMaeLaeKh, which certainly was not intended; the focus is on X:aMaTh. 2Sam. 17:1 shows in %aeBhX:aRAa" <mn> NNAA" <rv> that the point was not the pitch of the following syllables (they are none here) but rather that the stressed syllable is not lower nor higher than the rest. Such properties could have worked well even in utterances interspersed with <mn> such as 2Sam. 13:4, a mn rv mn Tl mn mh p\$ mn zq 7f mn at series, or Judg. 11:17 et al.

B1c16 Muunax L:gharmee | ǀ <mnLg>

First, <mnLg>| should be distinguished from <mn>{|=*paasaeq*}. This seems easier for syntaxes that made occurrences into rules without paying too much interest in meanings (apart from a few levels in disjunctive power). It is more challenging to an interpretation that takes meanings as primary and only then tries to explain collocations. Taking Ps 35:21 for example: Hae%aa"X<mn> | Hae%aa"X<at> can be <mnLg>| but more probably these two identical words have been divided by *paasaeq* so as not to run together. It is harder to distinguish *paasaeq* cases in two <mn>s on different consecutive words, as it is in 1M 1:30 where uUL:Khoo"L<mn/mnLg> {|=?} RoOMee"5<mn> could well be <mnLg> making uUL:Khoo^L a syntactic unit. But the meaning (“and to all”) does not support it. Also, please note the earlier uUL:KhooL_ in the same verse are *maqqeeph_* connected and unstressed (the first one actually is ~_~<mn>). A <mn/mnLg><mn> case is met also in the preceding v. 29, again with little reason for a *paasaeq* and quite a similar configuration of the melodemes around. There, however, the meaning is apparently more supportive to a <mnLg> syntax unit. A *paasaeq* could well be in Is 4:3 to divide ~H | H~ in W:HaaJAa"(=H)<mn> | HaNNiSh%aa"R<mn>. But initial words (*w:haajaa* in particular) are often set out from the rest of the sentence by prosody (the next v. 4 offers a good illustration, %i"M <mn> | ~<mn>). So prosody and <mnLg> seem to get slightly more points here. A similar condition can be met in 2M 20:4 (see Decalogue’s Double pointing—the upper melodemes, B2c2.1 below): the two latter words of the three, Wa%:aShae"R<mn> BaMMa"JiM<mn> | MiTTa"XaTh<mn> ~<rv> are visually close enough to warrant a *paasaeq*, but <mnLg> makes a good sense for BaMMaJiM, too. The issue is compounded in 1Sam. 30:21 where four solutions are possible, <mn> | <mn> | <mn> (<rv>), <mnLg>| <mn> | <mn>, <mn> | <mnLg>| <mn>, and <mnLg>| <mnLg>| <mn>, with some reason each. The question then is: Does <mnLg> provide grounds (by combining melodeme syntax, word syntax, semantics and what is known on intonation from other languages) to believe it has a specific melody of its own? The melody of <mn> cannot hint much since it was hypothesized (c15 above) as too flexible to derive from it a disjunctive cadence easily. What could be hypothesized is a sort of a level melody on a flexible pitch ending with a break.

B1c17 &illuuj ˘ <il>

The striking feature of <il> is that it appears as <mn> shifted above the line. It prompts a question if the two can be related. Co-occurrences such as Prov. 17:12, on the other hand, suggest a meaningful difference. # <il><mn><mn><at> must have had a reason why <mn> could not cover it all (if indeed there was also a similarity, apart from the difference). Please note how the verse diverges from syntax. If intonation-driven, B:%i"Sh<at> could remain with the former half, and off from the latter half. Note also the identical melodeme composition in 21:29a apart from ~<at> that belongs to v. 29a, not 29b as one would expect if syntax was in control. The <il> in both 29a and 29b are found on the rheme (focus) so possibly intoned higher. Ha%i"M<il> in Job 6:13 is an emphasis (cf Gesenius 1909 §150g ftnt 6, “could it be true that...” as in 4M 17:28) contrasting with v. 12 (%iM_Koo"aX<mn> and %i,M_B:5aaRil"<mr>) possibly in a higher tone. Compare also Ha%a"Ph<il> in 34:17. The distinction though not contrastive would work well in 21:19, XoNNU"Nil<il> XoNNU"Nil<mn>(<mn><at>). The similarity part of the question can be illustrated on Job 10:17 where <il><azLg> seems to function in a similar way to <mn><dx> in 17b. Just as <mn> attaches W:Thae^RaeBh to a low rise <dx>, the <il> word could be attached to a high ascent to make a T:XdDee"Sh<il> &eeDhaE"Khaa<azLg>| ~<rv> unit. This 3'b refinement of the <mn> function makes sense especially in front of phrasal melodemes which do not specify whether a cadence (v) or anticadence (ʔ) are to be applied (cf if3.4.3(6) p:242–245), such as <il><rv> ~ <mn><at> in 10:15 where only this difference would suggest if the phrasal tone is high or low. But even with a low phrasal tone, <il> can be a prefinal peak such as in <mhLg><il><sq> of Job 15:24 and Ps 18:31.¹³⁹ Or possibly it just took up the ascent such as in 26:14, or 33:15 where <mhLg><il><rv> differs from <mn> in v. 15b and similar to <mh><azLg> in v. 23 (but v. 17 shows this does not apply always). Also Ps 1:3 ~<mh> ~<azLg>| JiTTee"N<il> ~<rv> appears of that kind: keeping the pitch. Psalm titles that start with LaM:NaCCee"aX have often (not always) <il><il><sq> or <il>|<il><sq> structure. <il><il> is in 44:1 and 69:1. <il>|<il> is found in 36:1 where | could be *paasaeq* to separate two L:~ nominals (though 44:1 would have the same reason but still does not have | between <il><il>), then 47:1, 49:1, 61:1, 81:1 which has no reason for | at all (can we assume <iLg>, then? see c18 below) and 85:1. If the <il><il> was to mean keeping the pitch high, a few other combinations could support it, such as Job 16:10, # Paa&aRuU"<il> <azLg> <rv> or Ps 79:3 with the same configuration. It might suggest <il> is a bit lower than <qd=az(incl. Lg)>.

B1c18 &illuuj L:gharmee | ˘ <iLg>

The topic of <il> | vs <iLg>| has already been touched on in c17 above. The combination <il> | is not recognized as a unit in traditional treatments. It is configurations such as in Ps 55:24 that seem to beg for reconsideration, at least within the present hypothesis. In the three words, %:eLooHil"M<azLg>| ToORidhee"M<iLg>| LiBh%ee"R<il>, there is not much that could justify the second | apart perhaps from dividing <il> and <il>, which, however, was not done regularly as it was pointed to above. Not even a break is a syntactic necessity. It could have been an option that, as it was shown, could well have materialize as prolongation, an intonation break, an emphasis, a pause, or nothing at all. Given such a wide range of manners of how to express that, it does make sense to consider it a modification of the melodeme, a ~Lg> type; here then derived from the basic <il> melodeme. Quite a few examples were quoted in c17 from Psalm's LaM:NaCCee"aX<il(Lg?)> heading such as in 61:1. Due to uncertain meanings of the words, it is hardly possible to conclude if | made a cesura (then it could be a *paasaeq*), or the title is not to be divided (then an <iLg> would be better).

¹³⁹ A prefinal peak can be a sentence final if the hypothesis can hold in Ps 68:10. The verse has a few difficulties. Its intonation does not seem to fit, at least the current interpretation of the melodemes. The ~<il> Sae,LAa<sq>#, nevertheless, does not quite support syntactic interpretation, not even sorting into disjunctives and conjunctives, provided one may draw conclusions based on a word as uncertain as SaeLAa. Also Baa'RU"Kh<'mh"mn> is an accentuation hard to explain as <mh.~> on a prestress open syllable reminding *m:cunnar* melodemes <mhMc> and <mrMc>. (Incidentally, *merkha mahpakhatum* used to be a European name for <olJr> whereas this is neither *merkha*, nor “*mahpakhatum*” as it was meant, <Jr>. Closer could be *psik mahpakhatum* for <mhLg> (cf e.g. Philippo Ouseel (1714) שער הטעמים של אבות / *Introductio in Accentuationem Hebraeorum Metricam...* (Lugdunum Batavorum [Leiden]: Luchtmans, p:4 §11 Compofiti). Still, there is no reason to establish a preset combination on this pattern.)

B1c19 Galgal √ <gl>

The alternative name *j:rax baen joomoo* that refers to moon, as well as *galgal* that refers to wheel, seem to point to the graphical shape that might have originally been ∪ or even ∘ as in #A but later, to make the distinction from *athnaax haphuukh* √ clearer, the pointed √ established though it is not always kept and the two shapes are merged.¹⁴⁰ Otherwise,¹⁴¹ <gl> serves <pz> and <qp> (a ‘great <pz>’) whereas <ah> links to <olJr>. This view was accepted for PMH as it seems to have a sort of logic (not implying that logic is absent in other views). The reasoning is based on *j:rax_baen_jomo* which apparently means ‘a new moon’, lit. “a moon the day it was born” (cf the expression “*baen jomo*” in Job 1:4 and 3:1).¹⁴² Since *athnaax* appears as a mark inversed to *j:rax_baen_jomo* and since a new moon comes when the moon is found at the point of its track which is opposite to the top of its orbit in the middle of the sky (a circular track of the moon is an idea not necessarily connected with the belief the Earth is round; the moon simply alternates its phases making it obvious that it as if walks a round way), we can conclude the early mediaeval Masoretes probably had an idea of a heavenly cycle when they marked the verse’s prosodic pattern. A verse regularly culminates on *athnaax* and dies out. This half-cycle has also its local maxims at one-dot *rvia&s*, two-dot *zaqeph*s and three-dot peaks of *segoltas* and also *shalshélet*s that may have originated from three dots stacked on each other. All these remind of constellations, half-circle ascents and descents. Prosodically demanding texts (poetry) might employ the whole cycle where the full moon i.e. a zenith of the moon is complemented by a nadir i.e. a new moon. Individual stopovers in the prosody of a poetical verse might be more convenient to project on a circle rather than an arc. Of course, *j:rax baen joomoo* which is *galgal* (a name also compatible with a cyclic model), can represent a sort of intonational bottom even without adopting a cyclic verse model, simply by thinking of intonation as ‘sinking into darkness’ similarly as a new moon passes through dark. If another phase is absent, it may be analogous to an absence of an intonational peak. But a cyclic model is more visual.

Of my excerpts, <gl><qp> in 2Sam. 4:2 can illustrate a possible initial value to start with. The verse starts explaining a sideline of a story, # <mn><mn><mn><gl><qp> (Now, “the son of Saul had two company commanders”). It might have ended with a low fall-rise to a higher but slow fall-rise so as to be taken up by a higher, flat arc, <tl><qd><gr> (“one named Baanah”), to conclude in a low register, <dr><mn><rv> (“and the other Rechab;”). The initially flat start ended to raise expectation. Putting <gl> in front of <qp> doubled the shape as a precursor to the great *pazer*, <qp>. Whether <gl> was to warn and keep the pitch low, or really demanded a slump, should be experimentally tested. The milder version would be better in keeping with <gl><pz> combinations (e.g. Ps 44:4) as less conspicuous.

B1c20 %athnaax Haaphuukh+&oolae <ah.ol>

There may be a similarity in sound between <gl> (c19 above) and <ah> so perhaps mixing the two is no serious drawback. For the purpose of arriving at reasonable initial values to prime the experiments it is, however, sound to respond to differences in shape as well as syntax, even if results at some later stage cluster in fewer categories. In excerpts that the present research draws on, <gl>/<ah> marks were met frequently enough with <olJr> and specifically in a configuration with in a word and <Jr> in the next one, ~<gl>/<ah.ol> ~<Jr>, that it deserves a special category (special melodemes have been put forward tentatively due to much weaker evidence available), the more so that the distinction between <gl> and <ah> has a tradition (see c19).¹⁴³ The typical pattern frequently met is ~<cn> ~<ah.ol> ~<Jr> such as in Ps 18:44, 28:3 and 56:9. That configuration seems to spread the emphasis, stressing either the <ah.ol> word, or the <Jr> one. The peak between, however, is clear and recognizable in the contour

¹⁴⁰ In #A, ∘ is <gl> and √ is <ah>. Also #L distinguishes them. Yeivin 1980 points to the distinction in shape in #272 (p:212), #361 (p:266): the √ serves <olJr>, the ∪ <gl> serves <pz>. [As in #A.] Price 2010 makes no such distinction and considers <gl> a conjunctive serving the 21'b <qp> (p:116, cf Wickes 1887, p:114) and the 3'b <olJr> (p: 191, cf Wickes 1881, p:54, 88). Neither use any other name for both. Aron Dotan in BHL restores the ∪ as <gl> and √ as <ah>. Joshua R. Jacobson (2005) *Chanting the Hebrew Bible / Student Edition* (Philadelphia: Jewish Publication Society, p:76), considers <gl> a disjunctive (but describes its shape as <ah>) within <qp>. More on names and shapes cf Wickes 1887, p:26. Unicode provides U+05AA for <gl> and U+05A2 for <ah>.

¹⁴¹ <gl> to <pz> in 21/3'b and <ah> to <olJr> in 21'b is held by Breuer 1981, Richter (cit. in iir) and PMH I p:101, 288.

¹⁴² It has a context-dependent meaning. In 5M 24:15 it means ‘the same day’; 1Sam. 26:10, Job 14:6 and 15:32 ‘the day of his death’; Job 18:20, Ps 37:13 and Ezech. 21:30 is stands for ‘his judgement.’

¹⁴³ A test verse can be Ps 44:4 (easy to remember) if <mh><gl><pz> ~ <cn><ah.ol><Jr> prints as two, or one mark.

without a need to break or even interrupt the contour, though sometimes it is disputable, which syllable was actually the stressed one. (A stress effect is made equally well through dropping as well as raising the tone.) It seems that <ah> is put so as to prevent the melody to stay too high too long after <cn> and smooth out into . Consequently, <ah> does not have to be, and possibly is not, a stress mark, just a sign to make the lector to lower the pitch. Quite possibly that would happen where <cn> and <ah> are close, such as in Prov. 30:16, Sh:%oO"L<cn> W:&oo"Cae'R<ah.ol>. The effect can be most apparent on longer words, such as in Ps 37:7, DoOM<mhLg>| LaY<cn> W:HiThXoO'Lee"L<ah.ol> LoO"<Jr>; though it could well be that <ah> rather than , was the stress, especially given LoO^ . The effect would be the same. was surely unstressed in Ps 142:8 _Sh:'Mae"Khaa<olJr> where '<' is on {;} and '<' on {ae}, also in Prov. 8:34 with on a furtive patach, ShooMee"a'&<"ah'ol>. Please note also that , apart from being away from stress (which is well known, e.g. Prov. 30:16), need not border on <Jr> (in Ps 142:8, %aeTh_ stands in between). Unlike that, 142:7, _DaLLoO"Thil'<"ah'ol> M:%oo"Dh<Jr>, was not put on {;}. The rhetorical effect was, as it seems, emotional. In HeeN<cn> LOO_JaaDha"&NuU'<"ah'ol> ZAE"<Jr> of Prov. 24:12, a high rise-fall goes into a low fall to rise high again and, on ZAE, to fall down—a lively and, here, exclamatory intonation. It is a different type of emotion as in Job 3:6, but still, should the lector read it in a flat voice, he would take much of the effect away. It can also be shown that <olJr> split between two words actually linked them together, as JiQQaaXee"HuU'<"ah'ol> %oo"PhaeL<Jr> in this case. Stressing can have a joining effect if some of the stresses are suppressed. No indication of such a process is found in the record. Intonation achieves joining by its shape. In Ps. 5:11, Mi,MMoo&:aCoO"TheE'Hae"M<ah"olJr> has three marks from two melodemes on a single word. Such density had no syntactic sense and it can be hardly explained from stress patterns. Markings could rather be purely musical, or speech prosody (which are related things). If no space is left for , such as in Ps 30:12, a rise in <ah> is vital: <cn><ah/ol><Jr> (<mr><at>).

B1c21 Zarqaa / Cinnoor ~ <zr=cn>

The two names seem to refer to the same melodeme in two different phonosyntaxes. Usually, <zr> is associated with the 21'b syntax, and <cn> with the 3'b version. For the present stage, however, it is not important which name we use in search for the prosodic substance of the melodeme. The mark is put behind the word, postpositively, so it does not refer to any specific syllable.¹⁴⁴ The most obvious use can be a herald of <sg> in the 21'b system. As it is in perhaps all near disjunctives, it can govern its own domain.¹⁴⁵ In 2M 28:11 ~<mn> XaaRaSh<zr> %aeBhaeN<sg>, the ~<zr>, though a disjunctive, is on a construct since it is only the ~<sg> that concludes the syntagm <mn><zr><sg>. Still, a <zr> was felt to belong even amid a phrase, despite the syntax. A <cn> can also usher in a <olJr>, such as in Ps 24:8, # Mil"<mr> ZAE<cn> Mae"LaeKh<mh> HaKkaa'BhoO"Dh<olJr>, and a longer version of it in v. 10, # Mil"<mh> HuU'(%<mn> ZAE<cn> Mae"LaeKh<mh> HaKkaa'BhoO"Dh<olJr>, where one can feel Mil ZAE and Mil HuU'(% ZAE are phrases, at least for intonation. Apparently, a rise of the former phrase in the two verses (a fall-rise in v. 8) was repeated and concluded by the following <mh><olJr> each time. Two <zr>s or <cn>s following each other may indicate there is an inherent intonation and not just signalling a cadential portion is to come. Actually, in 2Kings 1:16, three <zr>s turn up in close sequence, <gr><mn><zr><zr><mn><zr><mn><sg>. In Ps 17:14, <mr><cn><cn><ah><olJr> shows equivalent marks to be even closer together. It is not rare, cf Judg. 18:14, 1Sam. 2:15 (please note that GaM<zr> B:7aeRaeM<zr> could well be a single piece of contour), 2Sam 26:5 (<zr><zr> leading to <mn><mn><sg> do not appear to be a single doubled <zr> unit), similarly so 1Kings 11:33 as well as 2Kings 7:13. Their separate validity gets more apparent when each <zr> has its own domain, such as in 1M 42:21, Josh. 22:5 (quite long ones) and Is 20:2 (longer domains while <sg> lacks its own; why <zr> should be reintroduced if <sg> follows immediately and all that precedes comes prior to a <zr>?). Also

¹⁴⁴ Apart from Ps. 31:22 which is an exception. Its position can be marked ' in transcription which, missing " in HiPhLil'(%<cn>, can only mean the syllable is marked with something odd, even if it happens to be the last syllable in the word. It looks like an incomplete doubling. For a complete one, see 2Sam. 3:8, %aaNoo"Khil<zr> (no need to use ' there), to which masorah (°Weil, BHS) comments: "8 times this melodeme combination, all with *zaqeph*, *atnach* and *soph pasuq* (=silluq) except (this) 1 case". (The same form appears in Is 28:29 <mn> and 2Chron. 26:15 <mr>.) Ps. 31:22 masorah B~ ML~ in BHS says "twice plene" and concerns the spelling, not the melodeme. #L is unclear, #A, no masorah; #A has no doubling, with the masorah comment "8 times melodeme".
¹⁴⁵ This 'syntactic' terminology is general and shall not imply a sentence syntax interpretation of the melodemes.

<mhMc> and <cn> can be found within a word's distance from each other in Ps 126:6. It is relevant if <mhMc> interprets as a <cn.mh> (<azLg>|) <cn> (<ah> <olJr>) contour: a high fall–low rise in a word.

A few particular instances can be pointed out to in gleaning information on the prosodic content of the melodeme. Ps 27:2 suggests that <cn> is postpositional perhaps because it was small lengthening prior to a potential break. In v. 3, it seems more apparent; please check a clear cesura at an analogous place in the parallel portion of the verse, 3b. ~<azLg>| M:%ooDh<cn> in Ps 31:12 and RaBBiLM<cn> in v. 14 stand at the end of a phrase. &ooDh<zn> in 1Sam. 3:6 carries an emphasis (a high rise-fall), though in v. 8 it does not seem so unequivocal and could be interpreted otherwise. 1Kings 17:1 puts the syntactic structure to a considerable strain. In GhiL&aaDh<zn> %aeL_%aX%aa"Bh<sg>, please note GhiL&aaDh does not belong to %aeL_%aX%aa"Bh (GhiL&aaDh links to the preceding text). It can be tentatively assumed the postpositive <zn> marks out the following intonation (analogically then, the prepositive melodemes might conclude the preceding intonation). This would disturb current concepts of 'accents' as syntactic markers, so it needs further checking. &aDh_MaaTha"J<gm> in 1Kings 18:21 is no yes/no question, so no rising intonation can be expected. Still, the end of the question appears so emphasized that a rise to a higher pitch and then descent between <zn> and <sg> could be considered. It would make <zn> ~<sg> configuration a rise-fall contour. 2Kings 4:29 seems to indicate a probable rise, too. Ps 93:1's MaaLaaKh<cn> is a pausal form of a 3ms pf q verb (MaaLaaKh is the context form). The configuration—

# Y<mn> MaaLaaKh<cn> [!]	Gee%uU"Th<ah> Laa'Bhee"Sh<olJr> [!]
<i>"The-LORD <mn> is-king<cn>!!</i>	<i>In-grandeur<ah> He-is-robbed<olJr>!"</i>
LaaBhee"Sh<mn> Y<dx> [.]	&oo"Z<mn> HiTh%aZZaa"R<at> [.]
<i>"Robed-is-he,<mn> the-LORD<dx>,"</i>	<i>by-might<mn> he-is-girded<at>."</i>

—makes quite obvious the melodemes are not restricted to their classes conventional today. One can think of it as follows: **(1a)** <cn> triggers a rare (i.e. strong) pausal form to make an introductory break. Unless the tone dropped, it would probably sound as a question, which would be most inappropriate. So the <cn> signalled a rise for <cn>Gee~. Then it fell on ~uU"Th<ah>, rose on Laa'~ and fell on ~Bhee"Sh<Jr>. **(1b)** After the Lord has been heralded with that exclamation, the next line can have a calmer development: LaaBheeSh Y ascended to raise expectation, fulfilled with &ooZ HiTh%aZZaa^R cadential descent. 2M 18:22 and 26 is relevant for another reason: The initial portion is repeated first with <zn>, then with <7f>. Its literally identical wording (apart from the melodemes) has the following configuration: first ₁<mn> ₂<zn> ₃<sg>,
 next ₁<mr> ₂<7f> ₃<at>. If at least approximate correspondence can be assumed for

the two configurations, intonation slowly descends on the word 1 (through a natural loss in <mn>, due to a prescribed descent in <mr>, perhaps a deeper one). It starts to climb on word 2 (mainly after <zn> while <7f> marks out a clear rise in pitch during ~&aa^M already). Word 3, B:KhoL_&ee^Th, makes a cadence: all possibly ran on a higher level in <sg> while <at>'s cadence was low and clearly conclusive. V. 26 describes what had happened as done whereas v. 22 has reasons to raise expectations, so it is not certain what type of cadence a near-native speaker selected. Locations such as Job 16:4 <mhLg> <zn=cn><gl> and 15:28 <mhLg><ct.mh> can be helpful in considering a difference between <cn> and <ct>. It is obvious <ct> affects a syllable it is attached to (&aa'Ril"M<ct.mh> in 15:28 does not offer any other option as the next syllable is on <mh>) while <cn> reaches to the next word. In 16:4, it is the syllable Kaa~ what is affected in %aaNooKhil<cn> KaaKhae"M<ah>.¹⁴⁶ 2M 34:10 adds another piece to the puzzle: HiNNEe"<mn> %aaNooKhil<zn> KooRee"Th<mn> ~<sg> shows <zn> as a disjunctive with a low but effective divisive power. It can be seen from ~il Koo~ (it is not ~il Khoo~). Despite that %aaNooKhil KooReeTh is all a verbal form (a participle meaning immediate future), %aaNooKhil is emphasized both with HiNNEe (please note the linking <mn>), and the disjunctive <zn> (please note another <mn> linking the participle to the next expression on <sg> and closing the whole phrase). So it can perhaps be tentatively concluded that <zn=cn> effected a slight prolongation of the last syllable of the word (cf Ps 27:2.3 above), which could have a disjunctive effect (cf the pausal form in Ps 93:1 and ~il<zn> K~, not Kh~ in 2M 34:10) and a <zn> intonation could start already in this lengthening (it could perhaps explain about a hundred of cases of neighbouring melodemes, 24 of which is not <mn>).

¹⁴⁶ The search zr.?[<^>]*[!]" in BnaA, however, shows 109 instances (including a few with the Divine Name that do not count) when a <zn=cn> precedes a syllable with a melodeme. It was <mn> in most cases, with the following exceptions: Job 7:11 <mh>, Ps 6:3, 12:3, 13:6, 16:11, 24:8.10, 28:7, 31:10, 32:9, 49:15, 53:5, 68:20.21.22, 78:5, 79:13, 100:3, 137:7, Prov. 30:15 <mh> Ps 51:19, 68:14, Prov. 23:31 <gl> Prov. 30:19 <mr>. These demand more research as it seems to refute the idea <zn=cn> affects only the next syllables. A possible solution is offered above.

B1c22 Cinnooriith ~ <ct>

The mark has the same form as cinnoor, <cn> (c21 above), which may suggest a similarity in sound even though the phonosyntactic positions of the two differ. (Wickes 1881 had the same idea, p:23.) Yeivin 1980 remarks on a graphic distinction not usually (as far as I know) observable in printed documents: “a sign like that of *šinnor*, but slanted to the right” (#372 p:273).¹⁴⁷ All of the scholars consulted on melodemes seem to confirm my, so far incomplete, research observing the <ct> appears only jointly with <mr> and <mh>. The <ct.mr> and <ct.mh> combinations are well-known by their traditional names, *meer:khaa m:cunnaeraeth* <mrMc> and *mahpaakh m:cunnar* <mhMc>, respectively. These melodemic units apply even if the <ct> being pre-stress has no syllable left and has to settle on a preceding word. This is why searching through BnaA data were not exactly simple. Seeing that Price did the job already in 2010, I take the liberty to draw heavily from his results in this section.

“*Sinnorit* also differs in that it is not a separate accent, but rather augments another conjunctive, either *Mereka* or *Mahpak*. When the *Sinnorit* augment is required on a word with the stress on its first syllable and the preceding word is joined by *Maqqeph*, the *Sinnorit* rests on the word joined by *Maqqeph* and the *Maqqeph* is dropped. Wickes stated the rule: [...] ... Sinnorith joins the words so closely together, that *Maqqeph* is no longer needed. <ftnt 29—Wickes, I, 23 [ftnt 64][...]>” (p:242)

“*Sinnorit* augments *Mereka* eighteen times in the books of poetry. It augments *Mereka* eleven times when it is preceded by an open syllable with a full vowel. <ftnt 30—Psa 41:14, 72:19, and 89:53 (after the double amens[...] that close the first three books of the Psalms); 65:2 and 72:3 (both follow *Little Shalshleth* with its special meaning); also Psa 5:7; 10:3; 70:4; 118:25 (twice); Job 20:27.> It does so twice even when *Mereka* is on the first syllable and *Sinnorit* is on a preceding monosyllabic particle where *Maqqeph* is expected but lacking. <ftnt 31—Psa 18:20 and 22:9 (both have a similar expression of deliverance).> Five times BHS and BHK have *Mereka* on one word and *Sinnorit* on the preceding word, whereas B and MG [unexplained] have different accents. <ftnt 32—Psa 2:7; 5:5; 18:1; 31:22; 66:20.> The augmentation is not consistent throughout the text, but occurs in only these few instances, suggesting that the *Sinnorit* in these cases may attach some special meaning to the passage.” (p:243)

The table that follows on p:243 shows <ct.mr> combination to be almost exclusively the domain of Psalms (apart from Job 20:27 once). *Silluq* prevails (9), with 4, 2, 2 distribution in other ‘accents’.

“*Sinnorit* augments *Mahpak* whenever the stressed syllable is preceded by an open syllable with a full vowel; this is true even when the stress falls on the third or later syllable. <ftnt 37—I have checked [says Price] every instance of *Sinnorit-Mahpak*. In six instances in BHS and BHK, *Mahpak* appears on the first syllable of a word and *Sinnorit* appears on a preceding monosyllabic particle with no other accent mark of its own where *Maqqeph* is expected but lacking: Psa 95:7; 147:20; Job 18:19; 32:5; 37:21; Prov 6:3; in most of these cases B and MG have the expected *Maqqeph*. In Psa 42:9 and 62:9 the same phenomenon occurs with a preceding multi-syllabic word having no other accent of its own where *Maqqeph* is expected but missing. In Psa 68:20 *Sinnorit-Mahpak* seems to serve defective *Ole-WeYored*; however, this should be regarded as *Sinnor* followed by *Mahpak* with *Paseq*. The *Paseq* marks redundancy in the text.> Thus *Sinnorit-Mahpak* serves essentially the same disjunctives as *Mahpak*: <ftnt 38—Twice *Sinnorit-Mahpak* occurs on the same word with *Great Rebia* (Psa 20:6; Job 6:10), and once it occurs together with a *Metheg* on the ultima (Job 31:35).> (1) *Sinnorit* augments *Mahpak* serving *Virtual Dechi* in a *Virtual Rebia Muqrash* segment. (2) It augments *Mahpak* serving *Great Rebia*. (3) It augments *Mahpak* serving *Azla-Legarmeh* or *Virtual Legarmeh*. (4) It augments *Mahpak* following *Little Shalshleth* according to musical context.” (p:244)

The table that follows on p:245 gives a very different picture from that on <ct.mr>. <ct.mh> appears to be an ‘accent’ distributed fairly evenly among the 3 books and a couple of dominating ‘accents’, viz. <Rv> 65 times, <azLg> 59, two “virtual” ones (i.e. replaced by real ones by complex rules), 7, 37, and “other”, 9 (from ftnt 40: <rvMg> 7, <at> 1 plus a few “virtual” ones. “It is possible that these unusual instances of *Sinnorit-Mahpak* may attach some special meaning to the text as in the case of *Sinnorit-Mereka*.”). Though Psalms, again, use <ct.mh> the most (138), Job (22) and Proverbs (16) are certainly significant.

It is of interest that while Price, *op. cit.*, calls <ct> “augmenting”, Wickes remarks: “Ben-Asher names it M:MaLLEE, because it serves as a *complement* to these accents. Yet it had its own modulation, which must, to some extent, have resembled that of *šinnor*” (1881, p:23). This is reasonable to suppose. We can start off with a tentative assumption the intonational meaning of <ct> was a high peak that was to descend into either a <mh> climb, or go down on, in a <mr> style (i.e. possibly with a slight protraction). The graphic distinction found in some mss as mentioned above might have only helped to recognize it more easily from <cn>.

¹⁴⁷ If shapes were indeed iconic, observations that would be trivia for syntax-based approaches should not be easily dismissed. In my excerpts, there was a note claiming that “<ct> can have a shape of a tighter loop in mss than the arc open downwards of <cn=zr> as it is in printed editions of TN”K.” Regrettably, I have no source to cite (though Wickes usually brought forward such information, I failed to find it there; and it was before I got Yeivin). I am only sure the remark was not mine, I have met no such a shape so far (but cf ftnt 144). (Checking Ps126:6 for both, one can see in #A a <ct> slanted to the right and <cn> upright, both tighter loops than in prints, ♪.)

B1c22.1 Meer:khaa M:cunnaeraeth <mrMc>

A <mr> can be ‘augmented’¹⁴⁸ by <ct> in such a way that the fall makes the word salient. It shows on Ps 5:7, a verse that has both <cn> (in 7a) and <ct.mr> (in 7b). Concerning <cn>, a reference can be made to c21 above. The <ct.mr> | <sq># deserves a comment here. First, it is interesting to note <mr> is followed by a | which can be hardly justified by anything else but content. # “You doom those who speak lies (7a); murderous, deceitful men *he-abhors, the-LORD*. (7b) #” is an adapted word order in English to correspond to the original ~ J:Thaa'&ee"Bh<ct.mr> | Y"<sq># (7b). The conclusion could be read in a way that the sentential accent would fall naturally to the Divine Name as it is in a cadential position. In English, it could be simulated by a passive: “(such men) are abhorred *by the LORD*.” Yet this is not the way to read and understand the verse. Not “it is the LORD who abhors,” rather ... (them) “the LORD *abhors*.” In the Hebrew text, both | and <ct.mr> made sure the verb, even though it is not the last word in the verse, received the focus. The *paasaeq* was to stop | the lector’s anticipating eye and prevent him from running to the last word too quickly. The melodeme instructed him to intone a high fall with a low runoff to leave for the last word. The prosody should tell *what* the LORD does rather than *who* abhors. If only unaugmented <mr> was put on the verb, the contour would mildly descend from <rv> (which was probably also high but lower than <ct>) into the <sq> without stressing the verb enough.

Job 20:27 is the only <ct.mr> outside of Psalms (Price 2010 p:243 fnt 33). The focus placement appears somewhat similar to Ps 5:7 above: It is MiThQoOMaa'MAa"<ct.mr> that should carry most of the slide while LoO"<sq> took up the leftover. *What* will the Earth do, rather than against *who* the Earth will rise up. It might have been understood at most places where enclitics were attached to a word that it was the main word that was accented rather than the enclitic which carried the main melodeme. It well might have been the purpose of the more refined and less regular 3'b system to make possible that this was explicitly put down in the record rather than left to common sense. And it is quite imaginable that such explicitness was most appreciated or even required by musical rendition in Psalms as music is a learned expression, not ‘natural’ like speech prosody. In singing, it must have been unequivocal where the melody should peak, fall and tail. It was not advisable anymore to rely on the intuition of speakers if the text was not spoken. Now, we can hardly learn (though we can always guess) if it were the musical passages from which such explicit notation spread throughout the Scriptures or the other way round.¹⁴⁹

B1c22.2 Mahpaakh M:cunnar <mhMc>

As pointed out in c22 above, <mhMc> (i.e. <ct.mh>, analytically) is a melodeme of wider distribution than <mrMc>. If <mrMc> was more relevant for chant while <mhMc> was appreciated in speech we can only speculate (until perhaps testing provides a more secure ground). The high point of <ct.~> can be especially useful at the beginning of a verse, such as in Prov. 19:24, # 7aa'Ma"N<'ct"mh>, Job 7: 5 # Laa'Bha"Sh<ct.mh> ~, 16:12,13 (note the almost parallel structure), # 19:15 (the peak is dominant) Gaa'ReE"<ct.mh><mn><dx><mn><at>. Similarly, it can follow a (virtual) break, such as in Job 15:28, | &aa'Ril"M<ct.mh>, 19:12 <mhLg>| Jaa'Bhoo"%uU<ct.mh> and 31:34 <mh><azLg>| Haa'MoO"N<ct.mh> (a slightly and strongly anticipated peaks, respectively) as well as, in Psalms, 19:5 | 'JaaCAA"<ct.mh>. If <pz> can be assumed to be a *meteg*-type, slightly cadential melodeme (cf c5), then Job 24:14 falls in the same category: <pz><ct.mh><rv>. The <mhMc> structure naturally applied also for two short words, such as Job 18:19, # LOO'<ct> Nil"N<mh> which is, effectively, a <ct.mh>, too. (And, it might prove the <ct> was to affect the syllable it wrote over rather than a modification of the <mh> or whatever later on.¹⁵⁰) Still, <ct> had to be close to the main melodeme rather than the beginning of the verse, such as in Prov. 8:29, # B:5uU'MoO"<ct.mh>, or beginning of

¹⁴⁸ Augmenting is not peculiar to <ct.~> melodemes. Some other melodemes are regular augments, such as <ga> in <rvMg>, *passim*; or just at times, such as <azLg> in °oo'Mee"R, Prov. 24:24, is augmented by <mh>. While <ga.~> appears to point out a high descent to a lower high, <~.Rv>, <mh.~> makes sure the lector starts low.

¹⁴⁹ Studies of the alternative marking systems (and especially the Palestinian one of which every single ms seems to be an alternative of sorts) may reveal more devices to refine precision and/or categories once considered vital. Wickes 1881 p:70 fnt 10 (p:69) mentioned mss that used an alternative to <ct>, a supralinear stroke slanted to the other side than <ct> (if slanted), <~\, allegedly “something quite distinct” from <ct>. Some mss were reported to use this mark called *m:thigha* to augment <mr>, some used <ct>, and some used just the plain <mr>.

¹⁵⁰ This fits ‘accent’ assumptions, too. But such approaches strive hard to explain e.g. B:,HeE'Kha"L<mhMc> in Ps 11:4 where every syllable has a sort of ‘accent’; or cf Job 31:35. These are no issue for prosodic assumptions.

the latter half, such as Ps 28:8 <at> uUMaa'&oO"Z<mhMc> and 31:16 <at> HaCCiI'Lee"NiL<ct.mh>, also 74:10. If the preceding syllables, however, were without any other clue, the anticipated <ct> possibly applied to them, see Prov. 24:12, ~ H:,aLOO_Thoo'Khee"N<ct.mh> LiBB"oOTh<azLg>| H,uU(%)_~<rv> where H:aLOO_Thoo~ possibly anticipated the <ct> intonation. The rise through <azLg> to <rv> can start only from ~Khee"N<mh>. A modified repetition such as in Ps 75:2, HoO'DhiI"NuU<mhMc> LL:Khaa<azLg>| ~ HoODhiI NuU<dx>, seem to confirm that a rise was involved (a high rise in the former portion, a low rise in the latter one). An unmodified repetition was possible in parallelism, such as JiShKaa'Xee"HuU<mhMc> ~<azLg> M:Thaa'QoO"<mhMc> ~<rv> in Job 24:20. It should be realized the <ct> as well as, possibly, | make the contour discontinuous: Job 15:28's <mhLg>|<ct.mh><rv> might well be read as a single <mh><mh> ascent to <rv> without the intervening | and <ct> (the sense of this particular verse would make it possible).

The reason for such a 'rugged' intonation may again be its saliency useful for contrasting. The almost identical proverbs in 19:24 and 26:15 put 7aa'Ma"N<ct.mh> in different contrastive pairs. In 19:24 it is 'PiI"HuU<rvMg>, "the lazy man ... (will not even bring it) to his mouth." In 26:15, 'NiL%Aa"<rvMg> is the contrasted concept, "the lazy man ... (even to bring it to his mouth) he is too lazy." In 27:14 the pair is also clear, M:'BhaaRee"Kh<mhMc> Ree&ee"HuU<azLg>| (the *paasaeq* here refers to the concept as a whole) and 'Q:LaaLaa"<rvMg>. This is where a theory of meaning of Msh melodemes could be helpful to translators and expositors of the Holy Scripture. Still, it did not apply everywhere. The proverb in 28:23 is an antithesis but 'MoOKhiI"aX<mhMc> with its high–low rise seems to find its complement in either Xee"N<mn>, or Mi,MMaX:aLiI"Q<mr>, both being inconspicuous (and XeeN with one of the lowest marks, which is syntactically unexplainable). In the next verse, 28:24, the word at the end of the verse is the one to provide contrast to GoOZee"L<mhLg>| '%aaBhiI"W<mhMc> W:%iMMoO<rv> (the whole phrase).

B1c23 T:liishaa G:dhoolaa <TI>

The lollipop shape of both <TI> and <tI> can be a circle before a word for <TI> and following a word for <tI> in mss (such as in #A). A simple circle, however, could be easily mistaken for a reference to a marginal note (Mp), traditionally also marked up with a circle (*circellus*). That is why the circle of <TI> and <tI> is extended with a slanted stroke toward the word. In #A, the *circelli* are widely detached while the circles of *telishas* abut to the upper right or left corner of the letter, at times almost imperceptibly connected with a short tiny hairline with the word, as can be seen e.g. in 5M 28:22 Y<TI>, 2Sam 24:16 WaJJOOMaeR<TI> and Is. 66:22 HaX:aDhaaShiIM<TI>. Similarly for <tI>, see e.g. 2Sam 24:17 WaJJOOMaeR<tI> and Zeph 1:10 W:HaaJaa<tI>. In Song 2:17, the circle of <tI> is close to a *circellus* {0}SooBh<tI> (Mp "6 times") so it can be seen the difference appears to be only in how close it is to a letter. <tI> touches Bh as if almost forming one shape, {Bh<tI>}, a *circellus* and S are separate, {0}{S}. Yeivin 1980 #270:211 notes down a few locations where #L and #S1 (similarly as in mss with non-standard pointing) repeat <TI> on a stressed syllable (#L and #S1 Jos 2:3, #S1 2Kings 17:24, 23:27).¹⁵¹ In #L, it can have the shape of a circle with or without a stalk but, again, unlike *circellus*, attached to a letter, such as in 2Sam. 14:32 where all the three shapes are found close to each other: B{0}OO"<mn> HeeNNAa<TI=circle> W:%aeShL:XAa<tI=lollipop>. The location has virtually the identical shape also in #A with the sole difference that the two <T/tI>s are closely sessile (an ~L{0}~ has also a *circellus* to Mp "twice" and as unequivocally detached as it shows with Bh{0}~). These observations are important as circular shapes can suggest anything or nothing in music, tones and prosody. The reasonable line to follow might be the virtual identity (apart from placement) of the circles. A solitary circle ° used to refer to a marginal note, similarly to how asterisks * refer to footnotes nowadays. At times, we can attach an asterisk to mark out* or *stress something or print it *bold*. In some early mss, ° divided verses (Yeivin 1980 #75). What if a tail° circle was to mark a starter unit to be continued in mss (<tI>) and an °initial circle was to close a unit of prosody off (<TI>)? Does it correspond to the way it was actually used?

¹⁵¹ Of these, only 2Kings 17:24 employs the Michigan University code 44 for internal <TI> and was processed in BnaA as 'Mi'-KuU`Th+Aa<TI.TI> whereas the correct form should have been 'Mi"-KuU`Th+Aa<TI> (with " and <TI>). But it should be pointed out " is not a stress position but a main melodeme position. The input data present the word as unstressed (Mi^N+KuUThAa). In Yeivin's rendering of #S1 it is 'uUMi"KKuUTHAa<TI>, #L's picture is different: 'uUMiKK°uUTh|Aa<TI> with ° sitting at the top left of K, which could be either <tI> (it is improbable), or a note's too low *circellus* (BHS "once", dubious to me), or an erased circle (it is unusually thin). In #A missing.

In Josh. 15:12, ~<at> ZAe<TI> G:BhuU"L<dr> manifests by marking G~ instead of Gh~ that <TI> carried out a break. In the syntactic unit <TI><dr><tv>, °ZAe<Tv> is the subject and stands apart. It is in line with uUL:%ae"BhaeN<mn> NaeGhaePh<TI> (<qd><gr>) in Is. 8:14 where <mn><TI> makes a noun phrase inside a larger nominal. Here, too, °xx as if indicated the yyy °xx unit is about to close. It could be speculated that “a stone<mn> of offence<TI>” was a high fall while “a rock<qd> to stumble<gr>” made a high arc with <gr> concluding the whole nominal. Hee%aaSooPh<TI> Jee%aaSee"Ph<qd> in 2Sam. 17:11 puts the verbal adverb (inf abs) under <TI> slightly off the phrase though the two forms of the verb <TI><qd> clearly form a unit inside a larger one.¹⁵² Similar mild, only slightly offsetting division can be found in Is. 21:5, 8, 10; a stronger one in 2Sam. 17:25 (W:,HaaJAa<TI> introduces the clause that follows so it should not sound too conclusive, anyway). In nominals, something similar is met in Josh. 21:5 where Ma77Ee,_%aePhRaJiM<TI> (for a longer yyy-°xx pattern, cf 10:37) ends a sub-phrase in a larger nominal phrase. If the weak conclusion was to be indicated by a fall (a natural assumption that is unrelated to the shape of the ‘stalk’ which is probably accidental, a typographic embellishment), it must have been only a short drop somewhere around the middle or mid-high zone of the pitch band. A complex noun phrase with two <TI>s is found in the next verse, 6— (~<mn>~<rv>) ((~<mn> ~,~<mn>) (~,~<TI>) (~<qd>~<gr>) (~<TI>~<qd>~<mh>~<p\$>) (~<zq>)) (~<7f>~<mr>~<sq>) #. The relationships are more complex but these suffice to show <TI> closes a unit and opens another one. Syntax then does not appear as a sure guide to reach a meaning. One can, however, consider <TI> as a lead-in to the <qd><gr> arc and the <qd><mh><p\$><zq> dropped ascent motives in the assumed intonation contour. If it represented a movement or just set a pitch is difficult to decide. Verses can also begin with <TI> such as in 2Sam. 14:15 where # W:&aTTAa<TI> %:aShaeR_BAA"Thi<gr> are quite possibly a single intonation unit. If a movement, <TI> would (could) be higher than <gr>, but that is unnecessary to conclude; the phrase could have levelled till <gr>. Unlike <mn> in 21'b, it could have a specific pitch and could have been somewhere between <mn> and <il> in 3'b. Sequences such as <TI><gm><mr> ~ ~<rv> in 2Sam. 15:21 would support the assumption of a <TI> high drop at the start of a depression. Is. 13:4 with (~<at>) QoOL<TI> Sh:%oO"N<gm> MaML:KhoO"Th<mh> GoOJi"M<p\$> + another absolute, Nae%:eSaaPhil"M<zq> is compatible. The <TI><gm> on short words that stand in parallel to # QoO"L<mr> HaaMoO"N<tv>, so two falls, the initial one low, the one after <at> more emphatic and higher support a <TI> gliding from high to lower high. Also configurations where single melodemes cannot be connected so easily in concavities or convexities, such as 1Kings 5:15, #<TI><qd><mh><p\$><zq>, can accept a descending <TI> model. What may be concluded is only that the circle does not represent anything that preceded since the verses are relatively self-standing units and hardly ever can the <sq># barrier of the strongest phrasal melodeme be overcome. Only contours that appear to undulate neatly, though in the opposite direction than the hypothetic <TI> drop, such as #<TI><qd><gr><dr><tv><7f><at> in Is. 10:16, those are ones that suggest a sort of a ∪ into which it is difficult to fit a ∩ <TI> concept seamlessly. A set pitch seems more compatible for them as well as for sequences where an arc appears to be the main motif such as (<at>) “ten<mn> cubits<TI> brim<qd> to brim<gr>” in 1Kings 7:23 to which <TI> seems to lead in. Another <TI> after <at> is found in 1Kings 8:27 where HiNNEe<TI> set in a higher pitch corresponds to the exclamatory nature of the rhetorical question (cf also v. 30 W:%aTTAa<TI>). The melodeme is weakly disjunctive to the effect that a longer stretch of syllables, such as in 1Kings 9:11, is ended up by <TI> even if <TI> inserts between *meteg* and the word. A conjunctive version of the melodeme, <tl>, in the verse links a construct *noun<tl> noun<qd>* (similarly to the following *noun<dr> noun<tv>*) and *verb<tl> subject<qd>* but it seems to have otherwise the same prosody. A similar ~<mn> ~<mn> ~ ~<TI> lead-in to a ~<qd> ~ ~<gr> arc can be found in 2Kings 9:21.¹⁵³

¹⁵² Wickes 1887 p:116–117, pointed to a vanishing dividing force, “the dichotomy generally fails in their clauses”.

¹⁵³ In 1M 5:29, the usually prepositive <TI> actually seems to follow <gm> over ZAe"<gm>TI>. Mp in BHS claims that it is “5 times following a melodeme” (hence, in #R, to read “*geresh* [sic] prior to *tlisha*”), which confirms this special combination (though not necessarily it justifies the note that it may be later and speak on a musical rather than speech interpretation of the two melodemes). Mss and editions differ in the order they show <gm>TI>. In #L, <gm> appears prepositive while <TI> looks somewhat unclear and makes the impression it was erased (either imperfectly, or the photocopy captured what did not meet the eye). So was <gm> and <TI> switched by mistake, or <gm> was replaced by <TI> in the final correction? (#L was adjusted)—or do I misread a circle as the <TI>, in which case a Mp note “unique” would refer to ZAe"<gm>? It is not very plausible. More probably, the editors of modern editions are right: BHL, BH3, BHS (ed. Weil, n. v.) “5 times double melod.” (Mm *contra textum acc invers.*, 3M 10:4, 2Kings 17:13, Ez 48:10, Zeph 2:15), also ירושלים (2000) הנ"ך האוניברסיטה העברית בירושלים / כתר ירושלים. Regularly, <TI> comes first and then <gr>, so this is the order ZAe"<TI>:gm> and four more locations are

B1c24 **T:liishaa Q:7annaa** ^א **<tl>**

How close <tl> may actually have been to <Tl> can be shown on a special instance. In 2Kings 17:13, only a single internal ^א is found, on a short word together with <ga> (for the *Garsha* Melodeme, see *PMH I* F3.4.3(8) p:249). #A is unavailable for the text, #L has {Sh<ga=right branch*, dot=middle branch, circle=left branch*>}u{Bh<0=note “8 times”, |, !=erased*(from B to Bh)>}uU {*=possibly erased(?)}.¹⁵⁴ which adds up to Sh'u"B(h)uU<ga.Tl>. BHS prints 'Shu"Bh⁰uU<'ga"tl(!)>'.¹⁵⁴ Checking the resources quoted in the footnote¹⁵³ above, BHL prints {Sh<ga:Tl=internal>}~, ירושלים כתר and תנ"ך סימנים {Sh<Tl:gr>}~, Holzhausen {Sh<Tl>}{Bh<gr>}~, so unlike BHS, they interpret שבו as <Tl>, but BHL keeps the order of the melodemes in #L.¹⁵⁵ It can be seen that <Tl> and <tl> are substantially a single mark interpreted by its position in a word. If it was painted clearly before or behind a word, modern editors were sure what to select. When the placement was unequivocal, the editors were embarrassed which sign to choose. The ‘stalk’ in printed editions is then only to connect the circle to the position it was attached in mss. It cannot be taken as iconic for any movement in tone. In fact even the name *t:lisha*, poor guide as names given to marks are, does not suggest any contour: “plucking, tearing off” might refer, if anything, to how a tone was set. Melodies are not so abrupt. <ga> put in front of <T/tl> and sharing the same letter {Sh} in 2Kings 17:13 (see above) might do what it did also for <rv>: set the tone lower than usual for <rv> and <T/tl>, respectively. This way, it might have helped, in Josh. 13:8, to set the <qd><gr> unit following <at>. Josh. 5:4, on the other hand, suggests for a similar configuration that <mn><tl><qd> held together more firmly than <qd><gr> (as <gr> relates more to what follows). Syntactic divisions are not upheld in this place. Rather it appears as if <tl> somehow glued the preceding syllables to the beginning of the melodic arc despite that the latter half of the arc was only freely attached (but also that is valid in prosody, and of course, in music, too). The approximate pitch of <tl> could be estimated (or at least experimentally tested at a later stage) from (<at>) <pz><tl><qd> as <pz=high drop to mid> <tl=middle high> <qd=high rise>. A similar condition is found in 1M 1:21—as <pz> checked its slide, <tl> made it ready for a <qd> ascent, again. If other prosodic features have to be engaged to make all <tl> occurrences sound naturally, only experiments will perhaps be able to tell.

B1c25 **Qarnee Phaaraa** ^{א,א} **<qp>**

This melodeme sign is also called *Paazer Gaadhool* (and could well have got a <Pz> tag here). Wickes claimed “Little Pazer might be substituted for” every instance of the sixteen occurrences of <qp> (1887 :114). Price believes “its form suggests that it may be a *Double Telisha*” but admits it “functions as a rare substitute for *Pazer*, but I have found no explanation of the circumstances under which substitution takes place” (2010:100). Yeivin substantiated Wickes and gave credit to the latter statement of Price by asserting <qp> “is marked in MSS by a “v” shaped sign above the stress syllable, (...), and in printed editions by the same, with circles added ... In masoretic treatises, *pazer gadol* is described as being ‘like *tet*’ in form (ט=v)” (1980:212 #274). Also its conjunctive ‘herald’ (the final one in a row of *servi*) seems to support the <qp> graphic substance by its own shape, ן. Their relationship can be seen in Josh.

printed in non-diplomatic Bible editions starting as early as with #R (Mp: “5 times” and <Tl> is over Z, not prepositive, so <gm> is hence over H), usu. incl. the warning <gr> is exceptionally to be read before <Tl>. Other Rabbinic Bibles follow #R and reverse the order in print, <Tl:gm>, e.g. ירושלים תנ"ך סימנים (1979) Feldheim Publishers; and *Die heiligen Schriften des Alten Testaments / hebräisch und deutsch* (1891) Wien: Adolf Holzhausen. By correcting #L they put the <Tl> to preposition and the <gr> to its syllabic position as regular. It is due to exceptions like this one that it makes sense wherever it is not obvious to mark out a prepositive place with ' , or even make it explicit in the tag what is what, e.g. 'ZAe"<'gm"TI> or 'ZAe"<'TI"gm>.

¹⁵⁴ Mp “5 times after the melodeme [like in c23 note, above] and once of the 5 is defective in the (same) form.” Please note לישון / לישנא can mean both ‘a similar *form*’ and ‘the same *meaning*’. In search for meaning, I do not take melodemes formally, so בליש could mean either. But as it was not qualified, ‘form’ is to be assumed first.

¹⁵⁵ The Michigan University code 24 for internal <tl> (apart from 04 for the prepositive one) made possible to find a few instances coded as exceptional. They are Gen 48:7, Deu 21:13, Est 6:13 and Jer 11:10 for doubled <tl>, 2Ki 17:13 as a real exception treated above; and Jer 44:17 that is represented in BHS with <Tl> above K. Both BHL and ירושלים כתר regularize it (from K'I<Tl>) to KI<Tl>. #L, however, offers a clear Kil<tl>, i.e. {K!i}{I<tl>}, unless the editors were puzzled by the placement of the circle over J rather than behind J. Definitely, it is far from K. (And it refers to no masorah.) #A provides a virtually identical picture, only clearer yet, Ki{I+°=<tl>}.

19:51. Three subjects instrumental in getting assigned hereditary portions (<mn><pz>) of the Land to the tribes of Israel were <mn><mn><mn><mnLg>| (the priest Eleazar), <gl><qp> (Joshua son of Nun) <mn><mn><t><azLg>| (and the heads of the ancestral houses). 2Sam 4:2 makes apparent that <gl><qp> is a unit of meaning separate from the following <t><qd><gr> and <dr><mn><rv>. Considering the circles on the two ‘horns’ a later embellishment thus seems justified.¹⁵⁶ If the shape can be any clue, a high fall-rise comes to mind first. It has to be tested, especially for the <gl> intonation since a low fall-rise followed by a high fall-rise seems to be too much. Ushering in would not need low-key copies of the more prominent melodemes. It is acceptable the herold melodemes might not affect the contour in any special way themselves (such as a special <gl> intonation), only by helping the lector to anticipate what kind of the main melodeme is to come. A fall-rise is an intonation salient enough to put an emphasis to whatever is found under it and closely before. Wickes refers to *Manuel du Leteur* that <qp> were “to draw attention to something which seemed to the accentuators *noteworthy* in the verse” (1887:114, italics his) יותר ונגבהין יותר הרוק ביותר. Yeivin (1980:213 #275) quotes that *Man. Lect.* p:91 for “special emphasis so the voice was raised more than usual, making (ordinary *pazer* into) *pazer gadol*”.¹⁵⁷ The sign is visually conspicuous enough to induce such opinions but they can be admitted until aural testing has possibly made some other pieces of intonation more prominent than this (rare) unit. Its usage does not seem to warrant overemphasizing the <qp> words at the expense of other units or their combinations.

B2 Combinations

The limited space for the present genre does not allow to treat combinations of the melodemes in such an extent that the chapter would deserve. It is combinations of the basic units what makes notes, motifs and rhythm into a score of speech. More than that, it is only the interplay of prosody with the meaning and form, semantics and syntax, of the spoken text that is the real tool for communicating. That is why the chapter must not be missing, in spite of the limited space and time available and the inadequacy to meet the task through manually made excerpts. Given that the dissertation is inevitably bound to reveal weaknesses of traditional methods, the chapter have simply had to be included even if all too short. The method in approaching excerpts has to be adapted to the constraints. Whereas the notes to individual sounds and melodemes needed to be subcategorized and then looked up and reconsidered one by one, the still unprocessed 868 notes to this topic (not counting irrelevant ones) do not allow such treatment. I am going to divide this chapter into three parts, (a) a few typical combinations, (b) combinations that caught my attention as they illustrate an important point even though (or because of) they are rare, and (c) a connected text that can show best the idea how the melodemes and combinations might work. I will also have to select only notes that have been developed in full already when put down, so if a note of potential interest was recorded only concisely, expecting me to come back to it later, such note is lost for this chapter. This will, regrettably, cut the volume of notes to be processed quite substantially but also provide a natural filter: If the phenomenon was really interesting (back then), it was developed and qualifies for consideration. For this purpose, I will have to adjust the technical language of description. Instead of using English words ‘high’, ‘mid-high’, ‘fall’ etc., the zoning system that has been already prepared for both AH# and Glossa transcriptions will enable to put contours in the coded text concisely and still with a comfortable range that sharp lines could not provide as they would be too specific. Glossa provides 9 pitch zones in 3 bands (see CD1b2.2.7.5(vi)) onto which practical levels for MsH can be mapped. In MsH, levels i–ii (i.e. 1–3 in Glossa) cover the sublinear melodemes, iv–v relate to supralinear melodemes and the level iii is available to overlaps from both sides. ► The distribution has an advantage to be sensitive to the margins and less sensitive around the middle band, which is

Glossa		AH#	
9	higher	high	
8		mid-high	
7			iv
6	middle	middle	
5			iii
4			
3	lower	mid-low	
2			ii
1		low	i

¹⁵⁶ Unlike the <T/tl> with the circles apparently hinting at the substance and ‘stalks’ being accidental, cf c23–24.

¹⁵⁷ Wickes’ cit. 1871 Derenbourg ed., Paris, ms: Ox.1505 p:92, Yeivin 1980 “Derenbourg, 1870, p. 400.” Checking on my copy of *Man. Lect.*, they both seem to refer to the same place atop p:400 (p:“91, 92” in the same *Journ. asiatique* are unrelated).

apparently the way the melodeme record worked: The lector took notice of the extremes and filled the middle band with movements that followed from the highs, lows and passes.¹⁵⁸ The pitch categories (as well as other prosodic features if needed) will be placed in the <tags>.

B2a Initial Value Estimate of the Melodemes

First, all the melodemes should be assigned some initial values, with which to compose the contours.

In order to keep a minimum structure, seeing the traditional both 21'b/3'b and nobility rank division has intentionally been disregarded for this stage of research, we should start with the main disjunctives that has been termed *phrasal melodemes* in *PMH I* F3.4.3(6):242–245. Unlike neat syntactic approaches to ‘accents’, this prosodic category is uncomfortably fuzzy (so far), but at least four of them seem to align in a 2×2 scheme of stronger and weaker × conclusive and inconclusive melodemes, <sq>, <at>, <zq> and <rv>. This orderly file is disturbed by a couple of melodemes whose rank is not so and/or not always clear. <sg> probably belongs to the unit, <olJr> apparently does not, <rvMg> quite certainly not and, to make it fuzzier more, there are those ‘near’ units that I have termed ‘heralds’: if it shows they (or some of them) make a unit with their superior melodemes, they should be counted in; otherwise, they do not belong among the phrasals and should be treated separately as having its own prosody. For the description of the contour-making properties, the Roman numerals cannot be used. The phrasal melodemes make a cadence of any contour that they append to, for which || or | symbols will be used inside the tag. The cadence can go down (a conclusive one), marked by \; or up (an inconclusive one), marked by /. Even this direction can, possibly, be discarded at times, so that <sg> or <at> can make a question and raise the voice. The \ and / then are only auxiliary features. || or | is what always applies. Some melodemes have a stand-alone version which can be assumed identical but possibly lengthened (by whatever means) to compensate it, some are longer by nature. A couple of appended .. or ... mark it.

<sq=\||> a strong conclusive phrasal melodeme
 <at=\|> a weak conclusive phrasal melodeme
 <zq=/\||> a strong inconclusive phrasal melodeme¹⁵⁹
 <Zq=/\||..> a strong inconclusive phrasal melodeme lengthened (possibly /\||!=Zq, too)
 <rv=/\|>¹⁶⁰ a weak inconclusive phrasal melodeme

Conclusive melodemes can be thought of as falls to =\i (an initial movement sign, such as \, means the start of the movement is not set but depends on a preceding value) while inconclusive ones reach no extremes, =~iv (~ means ‘even the movement direction depends on what precedes,’ though here for ~iv it is often /iv). Cadences are phonetically complex, may involve more features (such as emphasis, !).

Now, pitch levels or movements between levels can be assigned to non-phrasal melodemes, though for some with considerably less certainty than for some others. These are all, however, tentative initial values to prime the testing for incremental refinement and corrections. The order of *PMH I&II* is kept.

<sg=/v\iv> a peak climbed to from <zv> (formal placements are possibly <sg=/\||> just like <zq>)
 <rvMg=iii> (indetermined if <rvMg> was cadential or not; if/where so, <rvMg=iii|, iii; or iii\i>)
 <ga=iv\iii_> Or just sets the pitch at =iii_ (_ means ‘the level is to be kept on throughout the word’)
 <gr=v\iv> <gm=v\iv..> possibly lower at the beginning of an intonation unit, -v\iv..
 <tv=ii\i..> (it is possible that some cadential properties shared with <rv> will improve the sound)
 <mk=ii..i..> there are probably more differences between <mk>, <mr> and <tv> so far unexpressed
 <mr=ii..i> <tv> and <mr> may distribute their falls jointly, <tv><mr> or <mr><tv> =ii..i..
 <7f=i/ii> <7r=i/ii> are the same (they may differentiate in debugging, such as <7f=i/ii..>)
 <dx=i/ii_> applies to the whole word (ii_)
 <olJr=/iv\ii> unlike 21'b <sg>, this melodeme can be distributed into <ol=/iv> and <Jr=iv\ii>
 <mrLg=ii..i>; (the appended “;” marks up a position of a possible juncture, a potential break or ..)¹⁶¹

¹⁵⁸ The i–v numerals can be supplemented with a few auxiliary symbols. For a complete list of them, please refer to AH#—a list of Hebrew intonation contour *simple marking* at the beginning of the book. Most of them are self-explanatory and all will be explained as they are introduced in the text, so there is no need to deal with them now.

¹⁵⁹ Please note it is no ranking; no ||||, ||| is needed. | relate to pausal queues, || to intonational queues (iiB1a1.2).

¹⁶⁰ <rv> in 3'b comes immediately prior to <olJr>, all the other are <Rv>. Here, <rv> is a general concept that includes all in 21/3'b. If further analyses or TTS experiments demanded to refine the <rv><olJr> contour, a <rq> (*r.via& qaa'aaan*, a *Small Revia*) could be introduced. So far, given the <rv>'s phrasal nature, it seemed redundant. Its estimated pitch appears to have been quite low despite being supralinear, iii or lower yet, -iii or even +ii.

- <dr=iv\ii> A simple mid-fall is assumed unless a need for a composed version becomes obvious.
- <drLg=iv\ii;> It may well be all <drLg>s were actually <dr>s with |. More research is desirable.
- <pz=iv\iii/+iii> Possibly <pz> and <qp> might have been weaker and stronger same-pitch versions.
- <qd=iv/v> <azLg=iv/v;> Sometimes, the peak might not have been so high, -v or even +iv sufficed.
- <p\$=iii/iv> Actually, the beginning seems to depend on what precedes. <=ii/iv> is also possible.
- <mj=i/ii> The same as <7f> and <7r> unless more research and experiments show otherwise.
- <mh=ii/iii> Or possibly +ii\ii/iii—verbally: ‘not high anymore (as the preceding word) but rising.’
- <mhLg=ii/iii;> The ; may have involved a small cadence, <=ii/iii\iii> or a stronger stress.
- <jt=;ii/iii..> I could not use _ as the contour moves, so .. or perhaps only . was the only option.
- <sh=ii/iv> The characteristics might have been the steepness of the rise. More research is needed.
- <Sh=ii/iv;> The ; may include \iv but that should be covered in the phonetic means for junctures.
- <mn=~_> In 3'b, the ~ is within limits from i to iii (as there is <il> also). In 21'b, ~ is from i to v.
- <mnLg=~_;> The main difference from <mn> seems to be stress. But a cadence ~_ is an option, too.
- <il=-iv_> -iv might also include pitch levels above, from iv to v, making sure it does not go down
- <ilLg=-iv_> The difference from <il> might have been in a greater stress or a cadence, <=-iv_\>.
- <gl=ii> Or possibly =ii/iii, but with the function to mark out ‘<pz> is to come’, cf Prov. 23:29.
- <ahOl=ii_/iv> The pitch of can be as high as =v and as low as =iii (nothing dramatic, Prov. 30:19).
- <zr=cn=..iii/iv> Another option is to bend the earlier high melody <v\iv> or </v\iv> down to <sg=iv>.
- <ct=ii/iii> <mrMc=ii/iii\ii..i> <mhMc=ii/iii\ii/iii> (So the *m:cunnaeraeth* versions are /\ and /\.)
- <Tl=iv;> <tl=;iv> Actually, <Tl=iv\iii> and <tl=iii/iv> can be more explicit versions of the same.
- <qp=v\iii/v> Possibly too conspicuous a melodeme value and will need to tone down, closer to <pz>.

B2b Combination Examples

It needs to be realized first that the i–v values and movements of individual melodemes mutually interact i.e. adjust its pitch and movement to each other. A lector was no robot putting melodemes together as bricks, it was a speaker perceiving melodemes as pointers on a track controlled by himself. So if we then read uUSh:%aa"R<mr> &ee"C<tv> Ja&RoO"<7f> in Is 10:19, we do not assemble <mr=ii..i><tv=ii\i..><7f=i/ii> but rather <mr=iii..i><tv=ii\i..><7f=i/ii> so as for <mr> and <tv> to tie together. <tv> allows the melody to drop in order for <7f> to pick up. <tv><mr> (5M 22:22) would then result in <iii\ii+ii\i>, and also <mr><tv><mr> provides iii\i, only across more syllables. <7f> in fact means a slight rise in melody before the drop in the end, hence also <7f> has to tie to the melody in a smooth, not severed manner. Similarly <Tl gm dr tv mr> in 2Sam 23:20 gives <iv;v\iv\iii\ii\i> as it was <dr=iv\iii> and <tv=iii\ii> which adapted. Bridging over is intuitive, so e.g. <mh.azLg> in Ps 65:6 of 'NoODhaa%oO"Th joins <ii/iii+iv/v;> together. A program can do the smoothing automatically while an interpreting human needs to take care not to approach the reading mechanically. The i–v pitch levels are only auxiliary tools. What decides is the idea of sound (i.e. a ‘sense’¹⁶²) that is behind. Somewhere, an assumed iconicity fails to provide a clear picture (so far) of how a smooth transition should look like, but still there are passages showing the transition was felt as smooth, such as MiI,_JOOma"R<mr> '%eeLaA"W<rvMg> Ma,(H)_~<sq> in Job 9:12 suggesting the break that apparently occurs inside <mr><rvMg> was no break. Such one would start only on the beginning of the direct speech before Ma(H). In a schema, cases like that can be dealt with by inserting \ or / though it is nothing else than getting graphics closer to a possible reality. Also in Job 5:22–23, <mr><rvMg> certainly make a single intonation contour as uU,MeeXaJJa"Th<mr> 'Haa%aa"RaeC<rvMg> (v. 22) and W:XaJJa"Th<mr> 'Ha55aaDhAe"<rvMg> (v. 23) constitute a single text unit, with the words closely linked in content and form (annexed, Heb. *smichut*, in grammar). See the CD for more on Job.

Concerning formal aspects of melodeme combinations, their distribution among supralinears and sublinears appears very fortunate since (provided the symbols are iconic) the melodic pattern can be spotted immediately (and also other features apart from melody, covered only marginally so far, might be detected) in a single movement of the reading eye with no needs of retracing, anticipating, analysing or other disturbing actions. To give an example, in Prov. 31:15, #<~><il><rv> appears in place where

¹⁶¹ Sometimes ; only has to match a disjunctivity in parallel verses, such as Prov. 30:14 <mhLg>|<mn><cn> is a punchline of vv. 11, 12 and 13, <dx><mn><at>. Please note transpositions <dx> to <mhLg>| and <at> to <cn>. Other times, it depends on speech style, such as if fronted temporal 'W:%aX:aRoO"N<rvMg> Jb 19:25 is set off.

¹⁶² This mutual adjusting is analogous to word meanings adapting to the overall sense on the level of semantics.

<olJr> usually stands, a </iv\ii> contour. It can be perceived quickly a <v_iii> contour have replaced it, made of <il=v_(up a level)><rv> since the rise was substituted by a <mhLg>| rise and B:&oDh needs to keep the level, not to rise further. Repeating the same word N:ThuNilM as a means to put the passive participle more forcefully in 4M 8:16 did not require | to insert in between, they differ enough by <qd><mr>. If syntax were the purpose, we might expect the latter word to carry a disjunctive. This, however, is not the case, a <iv/v\ii..i> intonation contour closes the couple well to make it a unit in sound. The difference between the two words cannot escape the eye before it reaches the ears thanks to the different placement of the melodemes. Shaa"M<zq> W:Shaa"M<7f> in 1Sam. 6:14 may not fuse as they belong to different sentences, and in fact they cannot if lectors follow the marking. (Sometimes, however, only a shape difference is there as the values are closer to each other, such as, in 4M 17:28, HaQQaaRee"Bh<dr=iv\ii> | HaQQaaRee"Bh<tv=ii\i..>, and then | is inserted between, to help split the couple better.) 1Sam. 20:11 shows the usefulness of the two registers, the upper and lower ones, when a clause rises to a pitch the next clause cannot start from: ^{clause1}[<mh> <p\$> %aeL_DaaWi"Dh<zq> (p\$+zq indicates that zq closes to high after an ascent, iii/iv/||)]^{clause1}^{clause2}[L:KhAa" <7f=i/ii> <mn=~_> <at=\|> (i.e. rising start, mid-low and, given the type of clause, a drop on <at>; using the bottom register is graphic and simple)]^{clause2}. Some melodemes seem to be postpositive also in order to indicate their contour affects the next word and even the next melodeme (in fact, _ and | are postpositive symbols, too). <p\$> has been mentioned: In 1Sam. 20:3, repeated and single marks are found. The single <p\$> on XeeN determines where the following <zq> is to start, resulting in a <iii/iv/||> unit that may reach =v and not get much lower then. WaJJOO"MaeR<p\$> first expresses what the ~JOO"~ syllable does, <iii/iv> (it might well have been the same as the preceding <qd> though we declared =iv/v initial values for it in iiB2a). The latter sign of <p\$> may signal the relationship to JaaDhoo"a&<qd> to make it sound higher so as the whole chain rise to <gr> this way: <p\$=iii/iv qd=iv/v gr=v\iv>. Neither postpositive nor prepositive marks make any sense if it were accents; but melodemes may be employed as accent marks at least for two reasons: the intonation is most likely to turn on the accented syllable, and the position of accent may change for the reasons of euphony or stylistics. A euphonic reason is to avoid a close contact of stresses by shifting the earlier one back (*nasog axor* in Hebrew). A good example is in Is 15:6, ~^<p\$> Kaa"LAa<mn> Dhae^ShAE<zq> where the verb KaaLAa is affected by the following noun Dhae^ShAE rather than by the preceding noun XaaCil^R<p\$> as the rhythm inside the <mn><zq> unit takes priority over the effect of <p\$> from the preceding unit. The rule is not hard and fast, though. In Ps 31:4, *nasog axor* was not applied, uUM:CuUDhaaThil"<mn> %aa^TTAa<at> has word accents one next to the other (if <mn> represents a real accent or only stress in sound and, if again, melodemes inside words can be relied to sit regularly on stresses) despite that the <mn> is a conjunctive and %aa^TTAa is an optional form, a 'pausal'. In Ps 25:16, W:&aaNil"<mn> %aa^Nil<sq>, the rule was again violated, perhaps due to the word play. In 2Kings 1:11, M:HeeRAa"<mr> Ree"DhAa<sq> is a strict command (which also the contour <ii..i\||> confirms) with words tightly united. Yet no *m:hee^raa* appears, for reasons not clear to me. Cases like this can be observed also in *meteg* placement provided it is a potential position of stress (or a secondary stress) such as J:5aMMa,X_Lee"Bh<at>¹⁶³ in Prov 27:9, while in 1Sam. 10:24 a *nasog axor* applied: Baa,XaR_BoO"<mn>. The latter example is interesting for another reason: It has been already mentioned (B1c22.1) that enclitics while they carried the main melodeme, might not have necessarily carried the accent. Somewhat contrary to that (linguist's) idea, instances like the latter and a few following ones beg for reconsideration. Why did {,} move to Baa,~ (provided it reflects a stress, which is not at all certain, see e.g. Yeivin 1980 #311:248-#357:264) though its normal position is ~^? WaJjiShShaa"Bha,&<mh> LaaH<p\$> in 1Sam. 28:10 is one of 20 occurrences of that form, most of which is WaJjiShShaaBha^&+no enclitic (15 incl. 1 non-doubled <p\$> letting assume *wajjiššaabha^&*), twice WaJjiShShaaBha^&+encl.^ (hence no *nasog axor*) and the pattern ~^,~+^ three times including 1Sam. 28 above (enough to have made a scribal error less probable). The retreat of stress to the penult due to an enclitic suggests enclitics might be accented after all and melodeme placements are true to it.¹⁶⁴ It can be seen on two similarly patterned words in a sequence that *nasog axor* demand was strong

¹⁶³ A secondary stress may affect the contour (or has the potential to do it). Though the 'simple marking' of prosody is comfortable, applying it to secondary stresses is awkward. The 'analytic marking' had to be used, or should a description of prosody be really made in detail, using full Glossa devices is recommended (CD1b2.2.7.5).

¹⁶⁴ A question that cannot be dealt with here due to limited (spatial and other) capacities is how to interpret {,} in such patters. Did it make the stress backshift optional? Did it allow to take away the accent from the clitic?

(so reasons to break it had to be stronger): W:JeeL:KhuU<7f> W:Jee"Sh:BhuU<mn> Shaa"M<at> in 2Kings 17:27. In Job 3:14 & 17, the demand was observed, W:Joo"&aCeE<mn> %aa"RaeC<at>, and Xaa"Dh:LuU<mn> Roo"GhaeL<at>, respectively, whereas BaaTTeEHae"M<mn> Kaa"SaePh<sq> in v. 15 appears to have violated it. Was the pausal strong enough to make a difference in stresses?

While there seems to be flexibility to move stress between the ultima and penultima in Hebrew, with the penult as the basic form in most of the vocabulary (or all, provided *segolates* are reinterpreted phonetically)—a phenomenon explicable by assuming the accented foot that can be iambic or trochaic depending on the context—yet another phenomenon can be observed in melodemes' *form* of placement that apparently follows from melodeme interactions, and that seems to disturb established theories: antepenult placements. In interpreting such phenomena (infrequent but not too rare), we should bear in mind melodemes are graphic pointers, assumedly to prosody, not necessarily related (so possibly quite unrelated) to stress or accent positions. While *nasog axor* instances appear to reflect stress behaviour, expected and understandable, earlier placements do not seem to be necessitated by assumed phonetics of the token, so distinguishing graphics and melody from rhythm may be helpful if all other explanations fail. I am going to include the phenomenon here even though it is not certain it follows from melodeme combinations. But it is still possible (and it does not fit anywhere else anyway).

Some of the instances can be interpreted as penultimate if we assume C:CV as a regular structure of one syllable, such as J:ShaBB:XuU"N:Khaa<sq> in Ps 63:4 (which cannot be explained by *nasog axor* skipping shwa e.g. in W:JiThBaa"R:KhuU<mr> BhoO"<at> in Ps 72:17 and W:Joo"Sh:BheE<mn> Bhaa"H<sq> in Ps 98:7 (the shwa is not 'skipped' if it is included in the syllable's onset, anyway). The shwa was, or more probably had not to, be sounded as the fricativized Kh and Bh (printed in medium bold above) could themselves maintain the illusion the shwa was kept in higher speech rates. Some C:CVs, however, they as if broke out of, or disturb, this neat category, too. In Ps 60:9, the ~Q:Qil of M:Xoo"Q:Qil<sq> could hardly be ~QQil or ~Q(.)Qil. It is still possible that the real pronunciation differed from spelling, especially in quick speech (probably not acceptable for public lecture), so Q:Qil would be an acceptable explanation (as no {,} could conserve {;} after <sq>) if it were a solitary case but cases are more and varied. Some of them could be viewed as *nasog axor* skipping *xatephs*. This is easier to explain for a theory considering *xatephs* variants of a vocal shwa. (Here, they are considered full vowel alternatives to a vocalic shwa, see iiB1b.) Ps 83:13 has Nil"R:aShAa<mn> LLaa"NuU<at>, 92:8 KoL_Poo"&aLeE<mn> %aa"WaeN<at>, the same but <mn><sq> in v. 10 and the same then in 94:4, Job 19:18 has Maa"%:aSuU<mn> BhiI"<at>. Sometimes, however, full vowels with no alternatives are in the syllable count. MoO'Caa,%eE_Bhoo"QaeR<mh.7r> in Ps 65:9 appears as if the Masoretic scholars did provide options: to select from a penultima (with =ii.../iii), an antepenultima (=i/ii.../iii), or an unstressed form (=~ii.../iii). Ha"MQaaRae,<mr> in Ps 104:3 has, however, its melodeme on Ha~ following which are one long open syllable and another, open, too. If the {,} was to offer an alternative is a matter for discussion but certainly the melodeme was placed on Ha~, not on ~RAe. And the next word is BhaMMa"JiM<rv>, so no reason for *nasog axor* at all.¹⁶⁵ If *meteg* can be taken as an optional stress, 1M 38:23 would have three stress positions in a row: Ti,QQa,X_Laa"H<zq>. There, _Laa^H is the probable reason. Some words, however, may be ambivalent by nature. %aa'NNAa"<mn.pz> in 1M 50:17 and %aa,NNAA"<mh> in Neh. 1:5 is the same word and the {,} seems to confirm it can be taken as an optional stress position. It is worth consideration if patterns such as ~^~,~ e.g. Is. 7:2 (~<zq>) Naa"XAA,<mr> (%:aRaa"M<7f>), do not indicate the stress was not decidedly settled on one syllable only, but could affect two adjacent ones equally well? (It is typical of languages with a weak to zero

¹⁶⁵ I came across a web discussion with quite a few antepenultimate examples. I failed to keep the citation and date, but as I still can honour the authors, I decided to include the references. Henry Churchyard listed cases with a penultimate syllable closed (please note mine above has that one open): Nae"&aeRMuU<mn> Ma"JiM<zq> in 2M 15:8 [°jh comment: %aPPaE"Khaa<p\$=iii/iv> <this mn=~> Ma"JiM<zq=/||> should perhaps result in a mid-high kept across the three words], Ja"&aR.PhuU<mr> 7aa"L<sq> in 5M 33:28 [°jh: ultimate<7f> this<mr> 1-syll.<sq> could be explained by *nasog axor* if Ja&aR/~ could be considered a single (*segolate*-like) syllable and ~R:PhuU the other (regular one with extended onset); the <7f=i/ii> could attract an earlier <ii...i\||>], Is. 40:18 with ~<7f> Ta"&aR.KhuU<mr> LoO"<sq> [°jh: the same pattern, both the melodemes, the stress positions as well as the virtual shwa (psychologically if not physically present, so effective (Kh) anyway)], Is 50:8 (~<7f> on ultima again) Na"&aM.DhAa<mn> JJa"XaDh<at> [°jh: virtually the same], Job 12:15 (~<7f> on ultima) W:Ja"HaPh.KhuU<7f=i/ii> %aa"RaeC<sq> [°jh: this one is different as <rv> though lowered by <ga> does not seem to attract an early rise; the pattern is the same as Nae&aeRMuU and Ja&aRPhuU]. Peter Kirk (SIL) added Jos 10:23 (~<7f> on ultima) #) WaJJa"&aSuU<mn> Khee"N<zq> [°jh: the *xateph* category above], but 2M 7:10 (~<7f> on ultima) WaJJa"&aSuU<mn> Khee"N<zq> [°jh: same word but for {a}, not {;a}, so a clear antepenultimate (BHS: not all mss)].

fixed stress as Czech but a similar effect can be considered also in vowel-reducing languages, hence a seemingly strong stress—while stress reduction and strength do not have necessarily to correlate.) It could be an option how to deal with the apparent last enclitic accented even if it were a pronoun (which tends to be unaccented in European languages), e.g. *Kil_CaR_LiI*"<rvMg> in Ps 69:18. Should we suppose *LiI* carried all the accent, or was there a sort of sharing, and only graphics concentrated on *LiI*?

Before we start to deal with how melodeme combinations affect the content, there is another facet in the treatment of form: melodemes doubled on a word. One of the reasons for it is simply that they are actually two words compounded, or that the word is suggested to be understood as two. Such is the case in 5M 33:2, %ee"ShDaa"Th<mr.7f>, whose *k# %ShDTh* was probably difficult to interpret for the Masoretes or the earlier tradition, so the *q#* and the *Mp* instruction have the lector read it as two, better known words %eeSh DaaTh with a melodeme for each, though maintained as a single word-like unit in graphics, %ee"ShDaa"Th<mr.7f>. Ps 55:16 seems to be another such case. That reason is rather rare.

More often, the word is single and two melodemes is a method of making the word more salient by means of prosody. In 1Kings 17:23, *WaJJOO"Maer<p\$> %ee'LiJaa"HuU<mn>zq>*, it is %eelijaahuu what has the main stress, not *wajjoomaer*. In Hebrew, the more important points tend to move forward in a sentence (that is probably why connectors get special prosodic treatment as if fronted, as we will see below, though it is their regular position). <olJr> is no higher class melodeme than <at> in 3'b. The impression is caused by using this salient intonation for the important piece of information that tends to be found in the former part of the verse (actually, <cn> and <ol+Jr> form a sort of melodic bracket). <at> in 3'b is the same level as in 21'b, second to <sq>. In Prov. 25:7, <olJr> is found distributed over two adjacent words (as often), &aLEe" Hee"NNAA<Jr> (a phrase too short to bracket by <cn>). The <ol=/iv><Jr=ii> compound contrast 'Mee,HaShPiI"L:Khaa<dx.mn=i/ii><mn=ii><at=iv>. The melodemes are interpreted to show the two contours as alike in shape and unlike in pitch. Just as <dx> does not mark a particular point of break, so is put prior to a stressed syllable in <olJr>. Though it occupies the stress here, it possibly also relates to the whole of &aLEe^ . A similar contour is found in Ps 119:98, # 'Mee%oo"J:BhaJ<dx.mn>. Here, no syllable separates 'Mee~<dx> and ~%oo~<mn>, so it cannot be easily interpreted as a =i/ii_+~_ compound (7r could be better). Perhaps, <mn> put into a <dx> contour operated as a sort of pitch limiter to help keep the <dx> ascent more flat.¹⁶⁶ That seems to be confirmed by Ruth 3:9 in %:aMaaThae"Khaa<zq> ~ ~ &aL_%:aMaa"Th:Khaa"<mn.zq> where the two words do NOT contrast. It is the former one (as the 'pausal' form confirms) that is taken up by *Kh:NaaPhae"Khaa<p\$>* which is the next peak (mind the form). The whole *p\$ mn zq mh p\$ <mn.zq>* contour comes out as something like =iii/iv+iii+IV//+ii/iii+iii/IV<iii||>. The capitals are the peaks (possibly all the *iv* but the first one is topical). Please note how <mn+zq> had to be re-interpreted so as not to peak what would sound as mindless repetition. In 4M 9:13, *B:Moo"&a"DhoO<mn.zq>* would have us hesitate if that, or *HiQRiBh<p\$>*, was to be the peak. If the <mn> effect is applicable, *hiqriibh* is to be preferred.¹⁶⁷ An effect on the outer side of <dx> can be met in Ps 18:32 where <mh><mn><dx> appears to result in <ii/iii><iii><ii><at least>+iii>, so a delayed ascent to form a low peak. Another possible effect of <mn> can be noticed in 2Sam. 16:21. The <zq> of *W:Xaa'Z:QuU<mn.zq>* might have fused with the preceding <zq> but for the <mn.~> component (an exact contour is difficult to draw, perhaps something like =iii/iv<iii/v>). A similar purpose may be sensed in Is 11:11 where the preceding ~<p\$> would certainly join the next ~<zq> as if in a unit whereas *uUMiShShiN&aaR<p\$>* and the following

¹⁶⁶ Alternatively, compounding may be options for the lector to select from. The former has the advantage to let treat intra-word sequences the same way as all the other ones. Words such as *'uUL:xa77AAThiI*"<dx.mr> in Job 10:6 appear to support the assumption that <dx> ended in <mr>. But it is wise to keep the latter on a backburner.

¹⁶⁷ Alternatively, a conjunctive before a disjunctive could be a replacement for a *meteg* (e.g. Yeivin (1980) *passim*, on <mn.zq> #221(j):183–184). In the present framework it could mean a recommendation to read *xateph* as a full vowel, such as in 10:3, *W:NoO,&aDhuU*"<mh> <IPA>[noaˤdu]_{IPA>}, or a slow-down instruction, possible in 9:13 for the same reason that is well apparent in 2Kings 10:25—*W:HaShShaa'LiShiI*"M<mn.zq> concludes a long clause before starting another one that concludes in v. 26, so <mn.zq> is a border. Other times, a slow-down may be due to a more difficult word, such as *HaMMu'Maa(W){ThTh}il*"M<mn.zq> (#q *hammuumaathim*) in 2Kings 11:2. It is, though, not a systematic means since v. 4 marks up a problem-free *W:Laa'RaaCil*"M<mn.zq> that way while a mildly tough *HaMMee%(J)oO*"Th<rv> gets by with only a single melodeme mark. But instances such as 1Sam. 4:6 show the <mn.~> component is not secondary as ~<zq> *WaJJOO'M:RuU*"<mn.zq> should trigger the latter <zq> to be <Zq> which did not happen (also ~<at> *WaJJe'Dh:&uU*"<mn.zq> in the same verse). The idea of a slow-down fails at 1Sam. 19:7 where *J:HoO'NaaThaa*"N<mn.zq> can hardly indicate a slow-down since the name is repeated three times (a European stylist would prefer pronouns).

W:Xaa'Z:QuU"<mn.zq> are two different units of meaning and have to be intoned as such. Interesting examples that may fall into the same category are <qd.zq> combinations. In 1Sam. 6:14 (referred to already for a different point) the <qd> in W:%aeTh_Ha'PPaaRoO"Th<qd.zq> helps keep the two <zq> melodemes apart. Beside that it seems to have an additional function. It is not easy to imagine what the most natural rendition of the utterance would be (a few experiments could help) but it should create an expectation something more is to come. This is usually if not universally made by raised intonation in the languages of the world. Here, an initial guess would raise the <qd.zq> above the level of the earlier <zq>, such as <=iii/iv||> <=/iv/v||>. ¹⁶⁸ Or, slow-down could have been the effect apart from, or beside, the shape of the peak (contra the ¹⁶⁷ footnote) as it would fit the narrative. It would fit less in 1Sam. 20:23, # W:Ha'DDaaBhaa"R<qd.zq>. It is even hard to think of any intonation that <zq> alone could not provide. The only undisputable effect of <qd.zq> is that it has not become <Zq>. Was then any relevant difference between <zq> and <Zq> that <qd> had to be used? And why <qd> and not <mn>? No slow-down but a <=/iv\><iii/iv> distinction seems appropriate for 1Kings 1:37. The <qd.zq> word links to the next one by an annexation construct, which is appropriate for <qd> but strange for <zq> provided syntax was not considered so much as prosody. Syntax was hardly the reason for the intonation bracket in Josh. 2:1, WaJee"L:KhuU"<qd.gr=iv/v.v\iv>, again in 1Sam 17:13. W:La'DD:BhoORAa"<qd.zq> in Is 7:18 reflects the earlier Y<p\$> LaZZ:BhuU"Bh<zq> in the same verse, <=iii/iv||> ~ <=/iv/v||>. An interesting example of melodeme interaction is found in Job 12:6. The verse is pessimistic and the assumed intonation appears depressed: # ~<mh> ~<azLg> L:Shoo'Dh:Dhil"M<'mr"rv> ~<dx> <mn> <at> <mh> <7f> <mn> <sq>#, mostly low pitch though not entirely flat, three slow ascents repeat (cf 38:11). The <mr.rv> unit could be interpreted mechanically in line offered in B2a above, <ii..i/|>, which gets a too salient peak that does not seem to fit in this low key verse. Or, <mr.~> could be understood as a tool to set <~.rv> lower than a regular <rv> is. With <mr=ii..i> it would mean much lower. This way of fine-tuning a <rv=|>'s cadence may be analogous to <rvMg> where the <ga.~> component is taken as a means to set <rv> a level or two lower, <ga.rv=iii>. Possibly, this <mr.rv=ii> may be analogous. More melodemes suggest the possibility to have been used to set <rv> by a sort of signature. <dx> in Ps 89:29 creates by 'L:&oOLaa"M<dx.rv> a counterpart to a <rvMg>. Visually, the two appear almost as inverted images of each other. Occurrences of <dx.rv>, however, are not tied to <rvMg> as it can be seen in Tee"%aaLa"MNAa<mr.rv> of Ps 31:19. Doubts may rise over a frequent connection of <mr> with <rvMg> if it is interpreted sequentially, <ga.rv>. If <ga.~> is understood as a signature, <mr> does not create so sharp a step in sound. Job 9:35's <mr><mr><rvMg> that may mean a slow descent to which <~.rv> is accommodated by <ga.~>. Other two-melodeme units, however, support a simple sequence as making the most sense, such as uUBhiM&oO'NooThaE"Haa<7r.mn> ~<sq> in Job 37:8, frequently in Psalms: W:Joo"Shee"Bh<mh.mr> (13:6), W:Joo"Shee"Bh<mh.mr> (55:20), Jaa"%ee"R<mh.mr> (67:1), Haa"JuU"<mh.mr> (83:9) and NoO"DhAa"<mh.mr> (79:13). These are mostly short words where it looks like a lowered version of <olJr> (which is also interpreted sequentially). ¹⁶⁹ Apart from melodemes close to each other, intonation can explain well accumulations of more melodemes, such as Bi'ShuU"&aaThae"Khaa<mhMc.rv> that looks like <ct.mh.rv>, ¹⁷⁰ and four marks across two words, such as %aa"Z<qd:mr> 'JaaShuU"BhuU<ct.mh> in Ps 56:10. This might be alternatives how to pronounce %aa"Z, <qd=iv/v_{or lower?}=ii/iii> to bind to <mhMc=ii/iii\ii/iii>, or <mr=ii..i> easy to pick up by <mhMc=ii/iii\ii/iii>. Experiments with sound are needed to confirm.

Perhaps somewhat surprisingly, the lack of melodemes can also support intonation hypotheses well. Concatenations such as %aeTh_KoL_HaZZaaHaaBh_'W:HaKKaeSaePh<TI> in 2Kings, 8 syllables to 1 melodeme, speed up the pace if prosody is the principle. They make sense also as a syntactic marking but the question then is why only infrequently is the whole noun phrase lumped together. Phrases not that long are not rare at all, e.g. JiTh&aLLaeM_Shaa"LaeGh<sq> in Job 6:16, but it joins a verb and a noun, so the question would be why it was necessary in such analytic marking. Elsewhere, such as Job

¹⁶⁸ Actually, <rv> seems to me to fit better to the latter <zq>'s place. One could speculate <qd> might repaired the two dots made earlier. However, there are more <qd>s used like that of its 319 instances so possibly this is a vain speculation. It would be interesting to know how many. That is why the corpus approach needs to develop.

¹⁶⁹ Given that especially <mr> and {,} are difficult to distinguish even in the best Ms mss (#A, #L), there is always the need to check mss and editions before trying to dwell too much on individual instances. I better do not include more <mr> compounds. By way of an illustration: W:Ghoo"Lee"L<mr.mr> of Prov. 26:27 by BHS, probably bizzare according to standard syntaxes, looking like a slip of a pen, is <mr> and {,} by BHL edited by Aron Dotan.

¹⁷⁰ Please note ' and " placeholders, mostly equivalent, are functional in instances like this (and a few others).

13:13, Wa%:aDhaBB:RAa_%aa"Nil<at> even 3–5 stressless syllables seem to be acceptable for syntax and for prosody. At other places, such as %iM_B:JiR%aTh_'Y"<rvMg> in Prov. 23:17, it is easy to explain the string of syllables as a part of speech than by prosodic needs (no reason to speed up). Prov. 24:21, however, shows a potential problem for interpretations by syntax, which appears as a long flat intonation of a verb phrase with objects split up by a vocative, J:RAA,_%aeTh_Y<mn> B:Nil"<mn> WaaMae"LaeKh<at>. Vocatives integrate well into prosody but stand apart from syntactic relations.

Concerning content, melodeme combinations frequently set out the front portion of a verse: a word (often including connectors), a part of speech, a phrase, a clause (as mentioned above). Consequently, a disjunctive between the first and second phrase or clause tends to be stronger than between larger units (such as clauses or sentences, respectively). In Judg. 5:18, LaaMuU"Th<7f> ends a sentence, W:NaPhTaaLil"<at> starts another. Syntactically, we might feel <at> <7f> would be more appropriate (also in v. 30, probably v. 13, too). However, this is not so. In poetry, it is well apparent (and possibly a *raison d'être* of <olJr> as mentioned already) but as a tendency it is general. On the other hand, melodeme marks seem as if distributed formally in some passages, or at least with no concern for the content that would be readily apparent to me. It is visible best on accenting: 4M 22:3 has Kil"<mn> RaBh_HuU"(%<at> while it might be obvious it is RaBh that should carry the accent, not HuU(%). Also <p\$> BiShMooNil"M<mn> Kae"SaePh<zq> and BaX:aMiShShAa_Khaa"SaePh<sq> in 2Kings 6:25 appear to carry accents on KSP, not on the numeral as possibly expected. But perhaps the reason that melodemes are no accents may suffice. Another manifestation might be that occasionally the same or very similar pattern of melodemes keeps repeating over and over. But again, this can be witnessed in speech with intonation patterns, too, so perhaps neither this reveals formality in distribution. Certainly no formal treatment is when word and intonation patterns were adapted to align so as for the prosody to repeat. 2M 30:4 and 37:27 are almost the same in words and melodemes but for a few details. In 30:4 Ta&:a5Ae"<7f=i/ii> &aL_Sh:NeE"<mn=~_> CiDDaAW"<at=\\> lost the verb *ta&:a5ae* in 37:27 and turned into &a"L<7f=i/ii> Sh:NeE"<mn=~_> CiDDaAW"<at=\\>. The <7f=i/ii><mn=ii><at=ii\i> contour did not change. But so as to keep it, the proclitic &aL_ had to become a separately intoned &a"L<7f>. The changes like these in almost identical texts bear a witness to a purposeful effort to maintain the repetition of prosodic patterns even if syntax altered, and seem to support the concept the melodemes were not syntax-driven (otherwise they would mark syntax as syntax; there is no reason to make repeat what did not repeat). If the instruction and the implementation, however, read with the same intonation, same prosody, the message ‘the children of Israel did exactly what God had told them’ is enhanced. The effort was not mechanic. More profound changes could not be repaired. (It could, in music. Sung texts need not care for syntax, missing syllables supply easily. Not so in speech.) A 25:19 string Wa&:a5Ee<TI> K:RuU"Bh<qd> %aeXaa"Dh<mh> <p\$> <zq> (i.e. <TI=iv>; <qd=iv/v> <mh=ii/iii>) was cut to K:RuUBh_%aeXaa"Dh<mh> <p\$> <zq> in 37:8. The *k:ruubh* was no longer the salient focus (as its *maqquph* makes known), a <mh=ii/iii> was enough. When, on the other hand, a word was added, such as a new subject in 37:1 missing in 25:10, the otherwise identical contour had to be extended, too. Instead of <mr><7f> (25:10), <dr><tv><7f> is read in 37:1. The proposed framework of interpretation allows to infer <dr=iv\ii> provided the upper half of a drop while <tv=ii\i..> took care of the lower one whereas the <mr> had originally (in 25:10) covered it all, <=-iii..\\i>.¹⁷¹ Sentence accents are often missing, such as in J:HuUDhAa"<mn> Ja&:aLAe"<at> of Judg. 1:2, it is *J:huudhaa* who should have had the focus, not *ja&:alae*. But phrase melodemes mask these shades of meaning (cf *PMH I*:232–233, 242–245). That is why we cannot tell if LaZZaa"HaaBh<at> in Prov. 17:3 was to be read with a rising or falling melody since <at> makes it opaque (it is mostly falling but not necessarily). Also, it is clear Y"<sq> bears the focus. But <sq> is the strongest disjunctive always, even if the focus would be away from it. The secondary melodemes (cf *PMH I*:233–234) that have filled the space divided up by the phrasal melodemes can inform of content-sensitive accenting (and also where it appears not sensitive) but if the structure coincides with phrase, it is lost (such is the present assumption unless or until the follow-up research shows otherwise). Prov. 18:10 demonstrates that a simple ascent (as an anti-cadence, non-conclusive one) can mark up a focus, not a topic (<7r=i/ii>). But v. 11 shows that an

¹⁷¹ The next v. 37:2 compared to its counterpart 25:11 seems to reveal this is over-simplification: Where in 25:11 there is <dr><tv> (a verb and &aaLaA"W<tv>), 37:2 has <mr><tv> (a verb and LoO"<tv>). Considering that <mr> often, in fact typically, follows <tv> (also in the two vv), claiming that <mr> expressed a long descent is an overstatement. Rather, it might mark up a general low fall while <dr> and <tv> made the fall in a way more specific. <dr> may really be a fall across the middle, <=iv\ii>. <tv> may be a fall modified by a pause or break.

ascent can also be topical, as in e.g. Czech. It is a question if seemingly ignoring the beginning of the direct speech in Josh. 6:16—^{<phr1>}[WaJJOO"Maer<qd> J:HoOShu"a&<mh> %aeL_Haa&aaM<p\$>]_{phr1}^{<phr2>}[HaaRil"&uU<zq> Kil,~]_{phr2}—can be taken as a sign of a formal approach, or a proof of a prosodic nature of the melodemes.¹⁷² Also comparing two very similar texts to find out how changes in wording affect changes in (assumed) prosody, as we did here a few times already, is not so easy when the difference affects phrasal melodemes. In 2M 25:11, <mh><p\$><mn><zq> appears basically as a long climb. But 37:2 lacks the <zq>-phrase and concludes the phrase with <at> instead, this way: <tv><mr><7f><mn><at> where the former <mh><p\$>, a verb with an independent pronoun, is replaced by a verb with a pronominal suffix, <tv>. The unit ending in a phrasal cadence, <mn><zq> from 25:11, is discovered as <mr><7f> in 37:2, and what used to be an independent sequence away from phrasal cadences, MiBBa"JiTh<mr> uUMiXuU"C<7f> in 27:11, makes a cadential conclusion of the long phrase, <mn><at> in 37:2. Another example on dropping a word out of an otherwise identical passage: 2M 26:27b WaX:aMiShShAa"<mn> Bh:RilXi"M<rv> L:QaRSheE"<p\$> Cae"La&<mn> HaMMiShKaa"N<zq> LaJJaR:KhaaTha"JiM<7f> Jaa"MMaA<sq># (please mind the differences from v. 27a) while 36:32 has a word less, WaX:aMiShShAa"<mh> Bh:RilXi"M<p\$> L:QaRSheE"<mn> HaMMiShKaa"N<zq> LaJJaR:KhaaTha"JiM<7f> Jaa"MMaA<sq>. Comparing with the 26:27 version that has two non-conclusive phrasal melodemes ~<rv> ~<zq>, the 36:32 has but one, ~<zq>. The bi-phrasal version consists of <mn><rv> <p\$><mn><zq>, the mono-phrasal version is made up of <mh><p\$><mn><zq>, but not in the manner that <mn><rv> would replace <mh>, rather that <mn><rv><p\$><mn> as if condensed into <mh><p\$><mn> by means of <mn> converting to <mh>, <rv> converting to <p\$>, <p\$> into <mn> and <mn> dropped. The longer L:QaRSheE"<p\$> Cae"La&<mn> HaMMiShKaa"N<zq> in 26:27 appears intended to keep raised also in 36:32 by means of <p\$> that precedes (~<p\$> L:QaRSheE"<mn> HaMMiShKaa"N<zq>) as Bh:RilXi"M<rv> turned into Bh:RilXi"M<p\$>. Consequently, also the first <mn> turned into <mh> since the attraction of the weakly inconclusive <rv> fell away. The alteration consists then only from: <mn>→<mh> <rv>→<p\$> <p\$>→<mn> and a deletion of Cae"La&<mn>. On the other hand, merely prolonging a word by e.g. a longer ending was not observed to trigger a change. W:%aeTh_7aBB:&oo,TeEHae"M<p\$> in 2M 26:29 has the same melodeme as W:%aeTh_7aBB:&ooTaa"M<p\$> in 36:34, only a {,} more on the antepenult to anticipate its different rhythm correctly.¹⁷³ 2M 36:25 unlike 2M 26:20 prolongs the sequence of <7f><sq> to <7f><mr><sq> while <7f> moves to a newly inserted verb from the original numeral whereas the original numeral obtains a <mr> melodeme thus: from 26:20 &ae5Ril"M<7f> Qaa"RaeSh<sq> to 36:25 &aa5Aa"<7f> &ae5Ril"M<mr> Q:RaaShil"M<sq> (changing Qaa^RaeSh sg. to Q:RaaShil^M pl. is irrelevant for melodemes just as changing consecutive imperfect to perfect, e.g. in 36:20 unlike 26:15, even as replacing the whole verb such as in 36:29b from 26:24b). If the verb in turn is left out, such as in 36:29 from 26:24 (since the previous verb JiH:JuU changed to &aa5Aa), the sequence <mr><7f><sq> in 26:24 changes into <7f><sq> in 36:29. The numeral in place of <mr> gets <7f>, the noun replaces <7f> for <sq> as it concludes the verse. The 26:24 <sq> carried a verb that was left out in 36:29. If a larger phrase or a clause has been dropped, such as in 36:30 from 26:25, melodemes need larger editing. The whole 26:25b is as follows: Sh:NeE"<mn> %:aDhaaNil"M<rv> TaXaTh<jt> HaQQae"RaeSh<mn> Haa%aeXaa"Dh<zq> uUSh:NeE"<mn> %:aDhaaNil"M<zq> Ta"XaTh<7f> HaQQae"RaeSh<mr> Haa%aeXaa"Dh<sq>#. Comparing to this, 36:30 left out the first TaXaTh<jt> HaQQae"RaeSh<mn> Haa%aeXaa"Dh<zq> uU~ and has to adjust melodemes in what was left: Sh:NeE"<mh> %:aDhaaNil"M<p\$> Sh:NeE"<mn> %:aDhaaNil"M<zq> Ta"XaTh<7f> HaQQae"RaeSh<mr> Haa%aeXaa"Dh<sq>. Particularly <mn><rv> turned into <mh><p\$> (the same alteration as above in 26:27 to 36:32) as if the mild ascent of the left out <jt=;ii/iii..> <mn=~_iii><zq=||=iii/iv> should remain in <mh=ii/iii><p\$=iii/iv> where also the phrasal <zq> melodeme vanished (pitch level iv) and, instead, the phrase joins the next by <p\$> (also pitch level iv).

¹⁷² Or a total failure of the hypothesis. All of that remains to be proven by a corpus approach *PMHII C2* pleads for.

¹⁷³ Possibly superfluous to mention other features observed as irrelevant. Unsurprisingly, they were vocalization differences such as JaaDhoO"Th<rv>, 26:17, and JaaDhoo"Th<rv>, 36:22. No vowel changes were met to affect the marks. Mentioned have been differences in vocabulary and temporal forms in verbs (e.g. &aa5Aa"<zq> and Ta&a5Ae"<zq>), also similar, probably synonymic forms %iShShAa"<7f> %aeL_%:aXooThaa"H<at>, 26:17, compared to %aXa"Th<7f> %aeL_%aeXaa"Th<at> in 36:22 (both meaning 'each other'). Irrelevant were small variant forms and syllables, such as QaeRae"Sh<zq> and Nae"GhBaa<mr> in 26:18 vs Q:RaaShil"M<zq> and Nae"GhaeBh<mr> in 36:23. In all this, however, statistics needs to step in and prove if they do have effect or not.

A greater difference, and possibly more interesting one, is found in 36:16 comparing to 26:9 since the 36:16 is verbatim identical but cut shorter by the whole second sentence (that makes sense only in instructions, not in the production). In 36:16 quoting 26:9 verbatim but the last sentence (<tv><mr><7f><at><mr><7f><sq>), the differences from 26:9 (<gm><mh><p\$><zq><mr><7f><at>) are as follows: <gm> to <tv>, <mh> to <mr>, <p\$> to <7f>, <zq> to <at>, <mr> and <mr>, <7f> and <7f>, <at> to <sq>. Apparently, as little as changing the milestone <at> into an end stone <sq> triggered lowering the less conclusive <zq> to the more conclusive <at> and also caused the low fall-rising <tv=iii\ii..><mr=ii..i><7f=i/ii> (note <tv><mr> were made to link) in front of <at> to shift up in adjustment to the following <zq> that concludes possibly a similar melodic contour shape in a higher pitch, <gm=v\iv..><mh=ii/iii><p\$=iii/iv>. The latter part of the sentence is the same in both versions (<mr=ii..i><7f=i/ii>), perhaps due to the fact that both <at> and <sq> conclude melodic lines in a low cadence (the two conclusives have =\ and the assumption is the fall \ would be much less than v\i).

Exceptionally, a melodeme is changed in an identic couple of passages without any obvious reason. This happened in 26:2 and 36:9 on the first word of the verses, %ooRaeKh—it has <mnLg> in 26:2 and <gr> in 36:9 while all other words, their order and melodemes remain identic. <gm=v\iv..> is taken as a high fall, perhaps somewhat lower at the beginning, -v\iv, and prominent enough to stand alone. <mnLg=~_;> is estimated, not very confidently, as a neutral middle pitch at the beginning, with an optional break afterward. In practice, it may reduce to something like +iii\iii. The two melodemes apparently share some features. More than that would be unfounded speculation.

Set phrases have also been found to vary in melodemes. The following expression occurs more times in passages concerning ephod and tabernacle textiles: ZaaHaaBh T:KheeLaeTh W:%aRGaaMaaN W:ThoOLA&aTh ShaaNil W:SheeSh MoShZaaR. A few melodeme patterns has been observed:

2M 28:6— (following <at>) <Tl=iv;><qd=iv/v><gr=v\iv><dr=iv\iii><tv=iii\ii..><mr=ii..i><7f=i/ii> (then <mr><sq> follows for Ma&a5Ee XooSheeBh)#. (Exactly the same structure is found in 28:15 where it concerns the breastplate of decision.)

36:35— (following <zq>) <dr=iv\ii><tv=ii\i..><mr=ii..i><7f=i/ii><mn=~_><at=\|> (also Ma&a5Ee XooSheeBh follows, but as <mr><tv> ~) ~#. (Exactly the same structure is found (a) in 36:37 on the curtain in the tabernacle entry after which <mr><sq># follow, and then (b) 38:18 concerning the court gate curtain where a long phrase follows the <at>.)

39:2— (following <at>) <rv=/|><dr=iv\ii><tv=ii\i..><mr=ii..i><7f=i/ii><mr=ii..i><sq=\||>#. (Exactly the same structure is found (a) in 28:8 on the front side of the ephod, then (b) 39:8 on the breastpiece, and before it, (c) 39:5 on the waistband of the ephod, which ends in ~ <mn><at> and another sentence follows.)

Disregarding a few more occurrences of portions of the phrase, the whole long phrase responding to the context takes a few forms that show similar contours: a long descent, =iv\\i or =v\\i (this is a rise-fall version with <qd><gr>=iv/v\iv) concluded with a low rise to a following short fall-rising cadence (in variants <mr><7f>=ii..i/ii, <mr><sq>=ii..i|| and <mn><at>=ii\|). Assuming it is generally one varied contour, here is what can be supposed as functions of the units:

<Tl=iv;> and <rv=/|> provide a high start following <at=\|>;

<dr=iv\ii> marks up a start of a fall after <zq=/||> which I assume to be high;

<dr=iv\ii> can also mark up that the drop after <qd><gr>=iv/v\iv follows (these I also assume high).

A characteristic conclusion by <tv><mr>=iii\ii..i^{edited} of a long fall ends up by the <7f=i/ii> rise.

<mr=ii..i> in concluding cadences just as <mn> serves by joining parts together, probably by a fall.

A cadence ends by <7f=i/ii> if the phrase has a continuation, or <sq=\||> or <at=\|> if it does not.

Under these assumptions, this long phrase of an apparently unvaried meaning and low emotionality shows a fairly stable intonation contour, possibly expected. The considered meanings of the individual melodemes appear to meet the assumptions well by their positions in the contour and their values.

It should also be reminded that though the internal syntax of the phrase does not change, its melodematic setting shows differences despite that the present prosodic interpretation categorizes all of them in a single broad category. Prosody-based melodemes should not surprise not to copy syntax.

Still, the melodemes in ch. 26 and 36 are equal wherever it is possible, which is where the wording agrees literally or save a verbal transposition from future to past tense. An exception is &aL 5:PhaTh HaJ:Ril&Aa that carries <mn><mh><p\$> in 26:10 whereas, in 36:17, it obtained <jt><mn><zq>, no doubt due to the fact the 26:10 expression is more developed; the phrase ends by HaJ:Ril&Aa<p\$> Haa,%aeXaa"Th<zq> before it goes on with HaQQilCooNAa"<7f> BaXooBhaa"RaeTh<at> whereas, in 36:17, before it goes on like that, only HaJ:Ril&Aa"<zq> stands there. Reflecting the phrase <zq>

conclusion on the added word demanded <p\$><zq> in place of <zq>. Before it, <jt><mn> prior to the shorter phrase in 36:17 is where <mn><mh> prior to the longer phrase is in 26:10. The prepositive <jt=;ii/iii.> ushers in a shorter and perhaps also milder rise to <zq=/||=/iii/iv\> which is closer. The longer rise in 26:10 is marked up on stresses, <mn=ii?><mh=ii/iii><p\$=iii/iv> (<p\$> is not on stress but differentiates an ultima stress (this one) from the one on penultima).¹⁷⁴

Most of the time, however, prosody aligns well with syntax. In 5M 8:1, ((%aaNooKhil"<dr=iv\ii> M:CaWW:Khaa"<tv=ii\i..>) HaJJoO"M<7f=i/ii>) offers a good picture of how intonation shapes syntactic units in sound, a pattern used frequently, e.g. 5M 16:1. It is even more apparent when the same word is repeated twice as it is not exactly the same, such as Cae"DhaeQ<mr=ii.\i> Cae"DhaeQ<7f=i/ii> in 5M 16:20. For more tokens, see 5M 17:8. In addition, these features catch the eye easily. In fact, the original stimulus for the prosody hypothesis originated with such instances.

B2b1 Where Melodemes Seem to Affect Meaning

The issue that is of natural interest for translators, expositors and theologians is better to collect under a separate heading though the matter is in fact a direct continuation of the preceding section. It should also be reminded that to make (the correct) meaning clear(er) was assumedly not the only purpose of the melodemes. It was rather, to cultivate public reading, especially in challenging acoustic conditions, even more so in a wider geographic setting with dialects and foreign substrates that had started already to inject their influence into the inherited tongue.¹⁷⁵ (For more, please refer to *PMH I* D1.2:60–63.)

We should turn back to the phrasal and secondary i.e. intonational melodemes, touched upon in the preceding section (B2b), as this qualitative difference affects what and how much of the meaning we can draw from the marked up text. The problem can be well illustrated on this short verse in Job 6:1: WaJJa"&aN<mr> %iJJoO"Bh<rv> WaJJoOMae"R<sq># where <mr><rv> is a sequence covering a phrase so <rv> coincides with the phrase's end. What is the contour of the unit cannot be read out of <rv> as the (here assumed) value is =/| i.e. a mostly rising intonation with features that weakly signal conclusion ('a weak inconclusive phrasal melodeme'). Exceptionally, the intonation can fall. What is supposed firmly is there was a conclusion. So, if the melody was =ii\i/iii, *wajjoomae^r* was included. If the two words were intoned =ii\i.i, *wajjoomae^r* started a sentence of its own (the melody of which is uncertain under the present assumption as <sq=\||> is again a phrasal, not intonational melodeme).

The intonational melodemes supposedly were created to remedy that insecurity at least on words by that time unmarked with phrasal melodemes. Prov. 26:4–5 brings forward text that can be one or two proverbs, depending on how we read it (which exactly intonation can express). <7r=i/ii> in v. 4a and 5a indicate the statement is to go on. But if <at=\|> is read as falling, <mn=i><7r=i/ii><at=ii\i>, it makes the proverb feel concluded already by the end of v. 4. Then v. 5 offers another proverb, antithetic to the former, making the reader think if and how they complement. If, however, the v. 4 <at> is read as a rise (which is rare but possible and concluding properties need not be cancelled), =i/ii/iii, and the same is done to the v. 5 <at>, the two proverbs become a single one and the antithesis turns intentional (not by the editors but by the author). Intonational melodemes by modulating the words that come between the phrasal ones can sometimes hint at the desired emphasis especially if it is not at the end of the phrase. 1Sam. 30:18 uses <7f> in 18b to lead to NaaShaa^W as an important concept in focus. If the concept is at the end of the phrase, intonational melodemes can lead the melody to it but have to stop when the phrasal melodeme takes control. In Is. 3:1, Kil<tl> HiNNeE"<qd> Haa%aaDhoO"N<gr> Y<mn> C:Bhaa%oO"Th<rv> leave me still insecure how to intone <rv>. Generally, <rv=/|> so if <mn> took up a level =iii, <rv=iii/iv|>. Here, however, <gr=v\iv..> was a movement down from <tl qd=;iv iv/v>, so if that direction went through <mn=~_>, did it affect <rv> and how? If Y C:Bhaa%oOTh had a special

¹⁷⁴ The same verse has one other melodeme change triggered by inserting &aa5Aa<p\$> in 36:17. Without &aa5Aa in 26:10, the sequence reads: &aL<jt><mn><zq><7f><sq>, so virtually the same as in 26:10a. With the &aa5Aa fronted it reads: &aa5Aa<p\$> &aL<mn><zq><7f><sq>. The logic of the prolonged sequence is then apparently similar but the <jt> melodeme, lost by &aL, was replaced by the <p\$> melodeme over &aa5Aa. More words inserted are in 38:15 over what 27:15 contains: a short p\$><zq> while 38:15 adds four words, turning the original <zq> into <rv> thus: <mn><rv><mh><p\$><mn><zq>. The original climb to <zq> converted to a less prominent <mn><rv> while a more salient rise starts on the added <mh=ii/iii><p\$=iii/iv> to culminate in <zq>.

¹⁷⁵ Christian expositors should also be warned interpretations possible to extract from melodeme configurations most probably reflect views held or inherited by Masoretic scholars in the 6th or 7th cent. CE (or a few hundred centuries earlier for recent heritage). Many of them might or should be acceptable to Christians, too. Some of the issues, however, might reflect what used to be debated between Jews and Christians in those centuries.

accent (as if the phrase were divided with a comma in English), <rv> might have been =iii\ii|. In Is 2:8, WaTTiMMaaLEE"<mr> %aRCoO"<7f> %:eLiLiLil"M<at>, the sentence stress probably does not sit on %aRCoO but rather %:eLiLiLiM where an intonation rise can be expected: \ | This, however, <at|> cannot express (its sublinear position is conventionally established as it mostly stands for a final drop in intonation \ and slow-down in pace |). It is possible that a rise on <at> is expressed in the closely preceding <7f=i/ii> since ascending on %aRCoO gives no much sense in itself. Technically then <at|> would express only the slow-down in line with its general meaning ‘a closing cadence’ | and the fall in intonation \ would be based on context, regardless if explicitly following from what precedes, <\><|>, or such a drop would be only implied by a preceding context, <\|>. Here, it would be an exception: the context has an explicit ascent, <i/ii>, which re-signifies a component of <at> meaning (the other, temporal component, remains valid), </></|>. The end of the verse (the <mr=ii..\\i><7f=i/ii><sq=\\|> sequence) seems to refine it to low rise-fall closing cadences (in both instances, in <at/\> and <sq/\>), since if it is not a question (which it is not in <at> nor <sq>) but an emphasis in a statement, a low rise-fall version ^ of a low rising intonation / (i.e. a phonetic materialization of a phonologic pattern) seems almost necessary (avoiding the sentence would sound as a question, even with no base in morphology).

Nevertheless it appears the conclusion should not be made a rule as it would be challenged as early as by the next verse (2:9). It can be understood at most as an option that Masorete melodemes offer and which might have at times been used in rather conventional combinations <7f><at> and <7f><sq>. Prov. 18:9 could be an example of an utterance where intonation melodemes set a contour for topic and focus to be concluded by phrasal melodemes. GaM<dx=i/ii_> raises a low arc across <mn><at> since the reason from v. 8 needs two more words. %aaX<mr=ii..\\i> 'HuU'(%<rvMg=iii> appears visually as a sharp break in intonation but actually it is =i/iii_, a moderate peak, nothing unheard, and frequent in the 3^b as an anti-cadence referring to the end of verse cadence (an expectation kept to a resolution).

It should be put clearly that to find a ‘question’ intonation, a question without a question word needs to be located away from the phrasal melodemes (so MAa_LL:Khaa"<mr> PhOo"<7f> does not qualify, neither do clauses ending in <zq> or <rv> though the tone may rise). Such ones are not easy to find. One of them might be uUMaE"<7f> in 1Kings 14:14. A longer clause appears in 4M 16:14 (despite the Ha- question particle) Ha&eENeE"<gm=v\iv..> Haa%:aNaaShil"M<mr=iii\ii> HaaHee"M<tv=ii\i> T:NaQee"R<7f=i/ii¹⁷⁶>. The intonation starts emotionally high, <gm>; plumets to <tv> to break on the last word’s <7f> to go up. Thanks to the fact the following LOO"<mr> Na&aLae"<sq> slides down in a categorical denial, the intonation of the question, be it a rhetorical one, can be considered preserved. A similar rhetorical question can be met in Job 14:4 where <mn><7r> ending in <rv=/|>, however, masks the contour; also the denial following it does not appear so emotional (<mn><sq>).

These general issues can be illustrated by a couple of examples where the meaning of the melodemes can be confronted with the meaning of words. Qi,L:La"Th<mr=ii..\\i> XiNNaa"M<rvMg=iii> in Prov. 26:2 demonstrates again the =ii\i/iii contour (actually, longer, ii\i) with <rvMg> closing the unit rather than being a unit in itself, hence “a causeless (undeserved) curse” rather than “a vain curse”.

Where <rvMg> does not have anything to close, it is a unit, such as in Prov. 26:22 (identical to 18:8 verbatim incl. melodemes, but not in a couplet), 'W:Hee"M<rvMg> being a peak, carries a contrastive stress (in relation to the word on <at>), getting the meaning “they also” (‘also’ is the contrastive part).

A contrastive stress in Prov. 29:7 puts CaDDiIQ<dx=i/ii_>, a mild rise to rise expectation, against 'RaaShaa"&<rvMg>, salient enough to attract a focus (e.g. =iii|, iii\ii or even iv\iii/+iii\, to be tested), though here probably contributes something as “on the other hand” (the wicked are not concerned).

Prov. 28:5 illustrates how vital is the topic–focus relationship for exposition of the Biblical text. If M:BhaQSheE"<mr> Y<rvMg> is understood as a unit (=ii\i/iii), its prominence enhanced by meaning in support of it suggests a candidate for an early focus, leaving JaaBhil"NuU<mr=ii..\\i> KhoO"L<sq> as a topic. This way, KoL does not mean “(they understand) everything,” rather “(they understand) all the judgment” as KoL takes up MiShPaa7 to become KoL_MishPaa7.

Clues to discern topic–focus seem especially helpful in Proverbs for their minimum context, but also narratives may at times find them useful (CD PHM_I ft¹⁰). The 1Kings 18:39 twin call is often translated identically¹⁷⁷ despite the fact that the melodemes do not repeat and appear to put emphasis differently:

¹⁷⁶ Actually, the rise might be greater as the utterance was quite emotional. On the other hand, lectors do not act.

¹⁷⁷ It seems to be an understatement. Among the suprising variety of (repeated) renderings I have found only New Living Translation (1996, 2004) Tyndale Charitable Trust (“The LORD—he is God! Yes, the LORD is God!”) and, notably enough, the LXX (ἀληθῶς κύριός ἐστιν ὁ θεός αὐτὸς ὁ θεός) to attempt to differentiate the utterances.

Y<p\$=iii/iv> HuU(%<mn=iv> Haa%:eLooHil"M<zq=/v>

i.e. mid-rise to high to yet higher in the end which is the focus.

Y<7f=i/iii*> HuU(%<mr=iii*.i> Haa%:eLooHil"M<sq=i||>

(*raised from =ii to =iii to express the emotions),

The latter call depends on interpreting <sq> either as focal (then the emphasis is the same), or taking as focal the only visible, non-phrasal <7f>, which leaves <sq> topical, and the articulation is reverse: ^(1st) “The LORD is indeed God!”, ^(2nd) “It is the LORD who is the God!”¹⁷⁸

B2c Decalogue’s Double Pointing

Three passages in Scripture are doubly pointed, three words in Scripture are doubly vocalized. These are PaaNaa';a"J<'at"rv> in 2M 20:3 (Gesenius 1909, 15p, reads <'sq"rv> here), MiTTaa';a"XaTh<'at"gr> in v. 4 and PaaNaa';a"J<'sq"rv> in 5M 5:7. The doubled vowels reflect pausal lengthening (as it was observed already by Wickes 1887, p:130–131) so they were triggered by double melodemes in passages they are contained in. The double melodemes are found in two short sentences in 1M as well as the 2M and 5M famous Decalogue passages. In all three, double reading is offered. Fairly obviously, it is not due to competing syntactic analyses, nor conflicting accentuation patterns; and if two musical scores are to be supposed, one has to ask why only these and no others, given that alternative cantillations are so amply used in synagogue services. Was it for the sin of Reuben? Was it the Decalogue where music started to grow rich? Did they later stop noting the alternative neumes in Scripture but kept them at these three places? It can be tested by the B2a values if the melodemes record alternative prosody which, for some reason, was advisable at these three passages and nowhere else. The reason can be inferred even today.

1M 35:22 starts at WaJiShKa"Bh<Zq:p\$> and goes on to Ji5Raa%ee"L<at:sq> <p=> concluding v. 22 and from <p=> WaJi,HJuU"<mr> that starts v. 23. One of the alternative sequence of melodemes is called *7a&aM TaXToON*, the lower accentuation, which does not refer to physical placement of the melodemes. This manner of reading keeps the two short sentences apart. The alternative sequence runs them both together and is termed *7a&aM &aeLJoON*, the upper accentuation (again not referring to any position in line). The purpose is to read the text as a single verse, or two. Verses 22&23 are to be read quicker in public than in study so as not to call too much the attention of the congregation to the sin of Reuben. “Upper” perhaps means here something as ‘surmounting’ and “lower” might be ‘thorough’. Such a line of reasoning reaches already from Wickes 1970 through Gesenius 1909 (15p, p:63) back to a Mishnah remark (NQR% WL% MTGRM, “read but not interpreted”, *Megillah* 4:10). Wickes 1970 p:130–131, noted “the upper pointing” had been inherited from “the Orientals” and considered it original whereas “the lower pointing” he attributed to “the Occidentals” viz. “the Palestinians” who had divided the Decalogue’s long verses 3–6 and 8–11 and joined in turn the short ones 13–16 into stretches of intonation. Also Pinsker¹⁷⁹ explained a similar phenomenon in the Decalogue of 2M a 5M (see below): the ‘upper’ reading as the older one that can be derived from a Babylonian marking (which wrote above the letters) while the ‘lower’ one as the younger Masoretic division into approximately commensurate verses. The result is similar: the ‘low’ reading is fit for study and reciting the concerned parashas (*Yitro* and *Ve’etchanan*), the ‘high’ one to be recited on Shavuoth.

For easy reference, I include the texts below. Please note in 2M 20:2-15 that v. 2 concludes the verse at &aBhaaDhil"M<at:sq> with a *silluq* in the *TaXToON* reading while the *&aeLJoON* melodemes go on with *revia&* to v. 6 altogether; also vv. 8-11 are joined and then vv. 12-15 again. The effect is either rendering it verse by verse, or as two sections of Commandments.

5M 5:6-19 goes on from MiBBBe"Th<mn:mr> up to Thaa&aaBh:Dhee"M<at:sg> in v. 9 and from L:5ooN:%aa"J<at:sq> at the end of the verse to L,a%:aLaaPhil"M<zq:at>, then from v. 12 to v. 19.

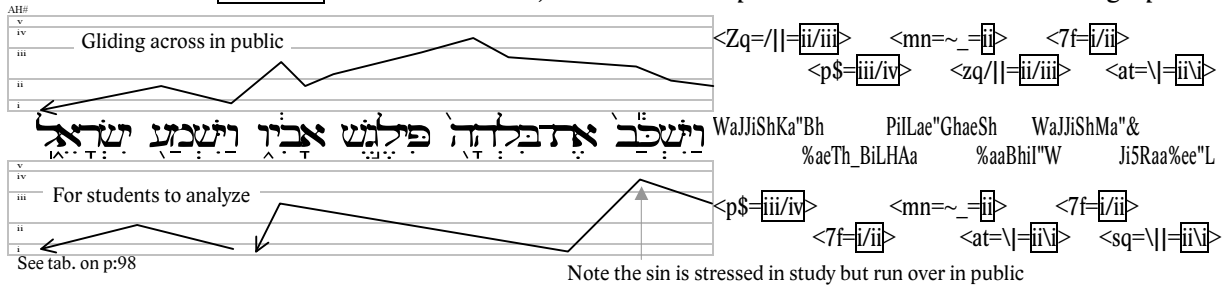
B2c1 1M 35:22

~ WaJiShKa"Bh<Zq:p\$> %aeTh_BiLHAa<p\$:7f> PiLae"GhaeSh<mn> %aaBhil"W<zq:at>
 WaJiShMa"&<7f> Ji5Raa%ee"L<at:sq> <p=> ... and single pointing follows: WaJi,HJuU"<mr> ~
 So the sequences are <Zq=/||=ii/iii> <p\$=iii/iv> <mn=~_ =iii> <zq/||=ii/iii> <7f=i/ii> <at=\\=ii\\i>
 or <p\$=iii/iv> <7f=i/ii> <mn=~_ =ii> <at=\\=ii\\i> <7f=i/ii> <sq=\\||=ii\\i>.

¹⁷⁸ In languages articulating by position, the difference is simple: “Hospodin je Bůh!”, “Bůh je Hospodin!” (Cz).

¹⁷⁹ S[imchah] Pinsker (1863) *Einleitung in das babylonisch-hebräische Punktationssystem* (Wien, p:46–50).

In order to make the code easier to visualize, here is an attempt to render the two versions in graphics:



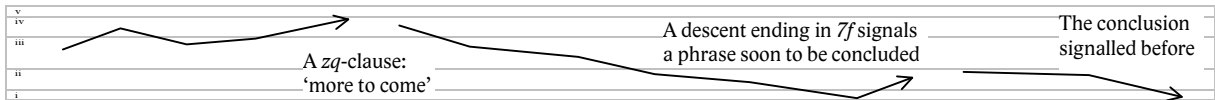
B2c2 2M 20:2-15

The two melodeme versions are provided separately to make it easier to follow, and have been compared with Aron Dotan, ed. (2001) *Biblia Hebraica Leningradensia* (Peabody, Massachusetts: Hendrickson Publishers, p:109, 1227), and RaMBaN (2006) *The Torah: with RaMBaN's Commentary ...* Blinder, Kasnett, Bulman, Gold eds. (New York: Mesorah, *Shemos/Exodus* vol. 1:548 and :478, respectively). The differences are marked up in the text by * and commented below. Please note <qd> is used instead of <az> referring to the same melodeme. Word melodemes need no " (nor ^) unless doubled. The ' placeholder is used if needed.

B2c2.1 The Shabbath/Shavuoth Melodemes

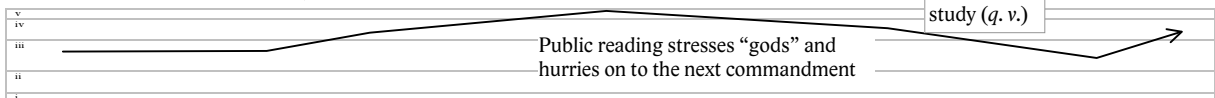
(Ta&aM &aelJoON = upper)

<Exo 20,2=> %aa,NooKhil^<p\$*=iii/iv> Y"<mn=~_ =ij> %:eLooHaE^Khaa<zq*=/||=iii/iv||>
 %:aShae"R<dr*=iv\iii> HoOCEETHil"Khaa<tv*=iii\ii..> Mee%ae"RaeC<mr*=ii..i>
 MiCRa"JiM<7f=i/ii> MiBBeE"Th<mn=~_ =ij> &:aBhaaDhil"M<at*=\|=ii\i|>
 %aa,NooKhil^ Y %:eLooHaE^Khaa %:aShae"R HoOCEETHil"Khaa Mee%ae"RaeC MiCRa"JiM MiBBeE"Th &:aBhaaDhil"M

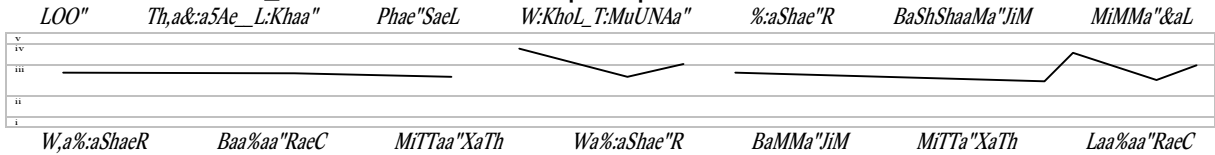


To make it easier to follow the transcription, its left-to-right order is kept. The contour runs right-to-left in Hebrew.

<Exo 20,3=> LOO"<mn=~_ =iii> JiHJAE, L:Khaa<tl=;iii/iv> %:eLooHil"M<qd=iv/v>
 %:aXeeRil"M<gr=v\iv> &aL_PaaNa"J<rv=/|=iii/iv|>
 LOO" JiHJAE, L:Khaa %:eLooHil"M %:aXeeRil"M &aL_PaaNa"J

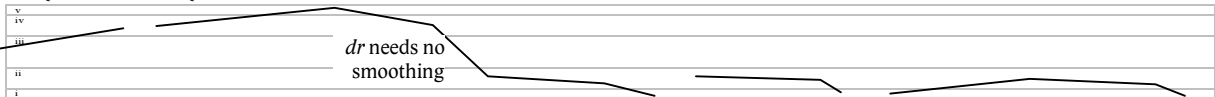
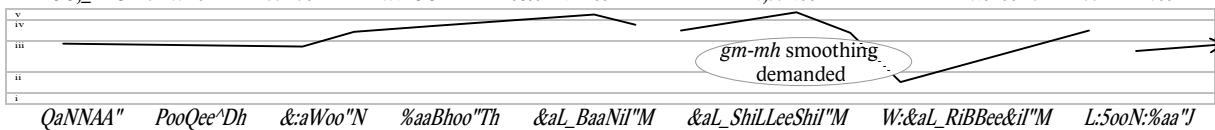


<Exo 20,4=> LOO"<mn=~_ =iii> Th,a&:a5Ae_L:Khaa"<mn=~_ =iii> Phae"SaeL<mnLg=~_ ;=iii;>|
 W:Khol_T:MuUNAA"<pz=iv\iii/+iii> %:aShae"R<mn=~_ =iii> BaShShaaMa"JiM<mnLg=~_ ;=iii;>|
 MiMMa"&aL<pz=iv\iii/+iii> W,a%:aShaeR<tl*=;iv> Baa%aa"RaeC<qd=iv/v>
 MiTTaa"XaTh<gr=v\iii> Wa%:aShae"R<mr=ii..i> BaMMA"JiM<mnLg=~_ ;=i;>|
 MiTTa"XaTh<mn=~_ =i> Laa%aa"RaeC<rv=/|=i/iii|>
 LOO" Th,a&:a5Ae_L:Khaa" Phae"SaeL W:Khol_T:MuUNAA" %:aShae"R BaShShaaMa"JiM MiMMa"&aL

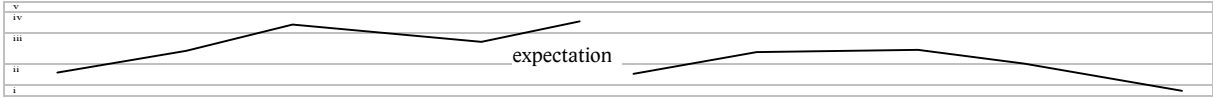


It appears the "waters" phrase is to be intoned as an insertion so as to diversify the list to make it easier to grasp for the listening public

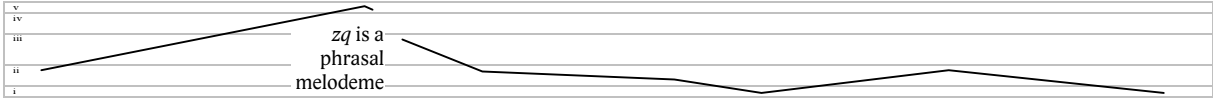
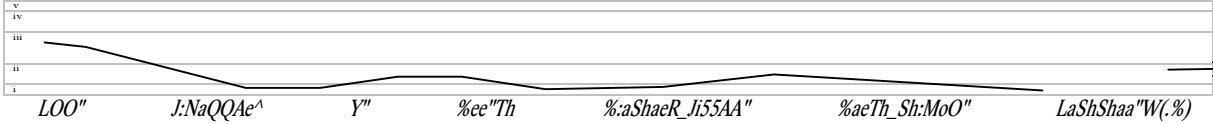
<Exo 20,5=> LOO, ThiShTaXWAE"<mn=~_ =iii> LaaHae"M<zr=..iii/iv> W:LOO"<mn=~_ =iv>
 Tho* &oBh:Dhee"M<sg=/v\iv> Kil"<mn=~_ =iv> %,aaNooKhil"<gm=v\iv..> Y"<mh=ii/iii>
 %:eLooHaE^Khaa<p\$=iii/iv> %ee"L<mn=~_ =iii> QaNNAA"<zq=/||=iii/iv||> PooQee^Dh<tl=iv;>
 &:aWoo"N<qd=iv/v> %aaBhoo"Th<dr=iv\ii> &aL_BaaNil"M<tv=ii\i..>
 &aL_ShiLLeeShil"M<mr=ii..i> W:&aL_RiBBeE&iL"M<7f=i/ii> L:5oo*N:%aa"J<at=\|=ii\i|>
 LOO, ThiShTaXWAE" LaaHae"M W:LOO" Tho&oBh:Dhee"M Kil" %,aaNooKhil" Y" %:eLooHaE^Khaa %ee"L



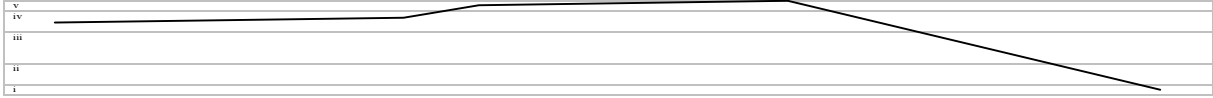
<Exo 20,6=> W:&oo"5Ae<mh=ii/iii> Xae^SaeDh<p\$=iii/iv> La*%:aLaaPhil"M<zq=/||=iii/iv||>
 L:%oo*H:aBha"J<7f=ii/iii> uULShoo*M:ReE"<mr=iii..ii> MiCWooThaa"J<sq=\||=ii||># <s=>
 W:&oo"5Ae Xae^SaeDh La%:aLaaPhil"M L:%ooH:aBha"J uULShooM:ReE" MiCWooThaa"J



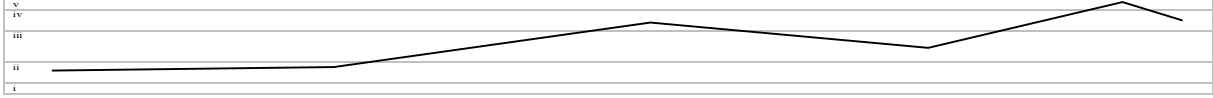
<Exo 20,7=> LOO"<mr=iii..ii> Thi55AA"<tv=ii..i> %aeTh_Shee,M_Y"<mr=ii..i>
 %:eLooHaE"Khaa<7f=i/ii> LaShShaa"W(.%)<at=\||=ii||> Kil"<mn=~_ii> LOO"<mh=ii/iii>
 J:NaQQAe^<p\$=iii/iv> Y"<zq=/||=iv/v||> %ee"Th<tv=iii..ii> %:aShaeR_Ji55AA"<mr=ii..i>
 %aeTh_Sh:MoO"<7f=i/ii> LaShShaa"W(.%)<sq=\||=ii||># <p=>
 LOO" Thi55AA" %aeTh_Shee,M_Y" %:eLooHaE"Khaa LaShShaa"W(.%) Kil"



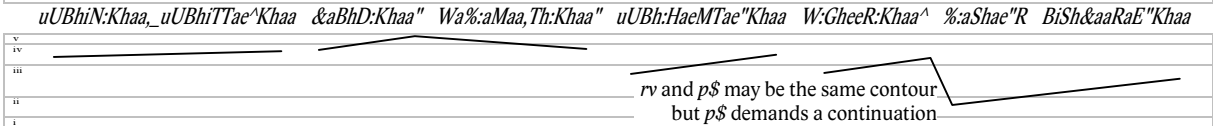
<Exo 20,8=> ZaaKhoO"R<tl=;iv> %aeTh_JoO"M<qd=iv/v> HaShShaBBaa"Th<gr=v\iv>
 L:QaDD:ShoO"<rv=/||=ii||>
 ZaaKhoO"R %aeTh_JoO"M HaShShaBBaa"Th L:QaDD:ShoO"



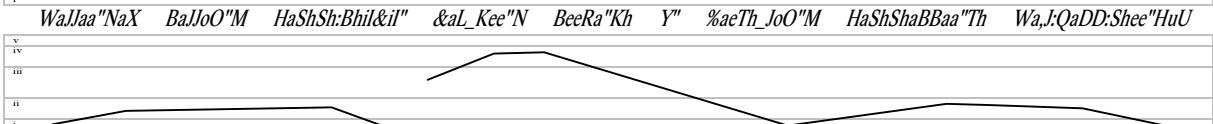
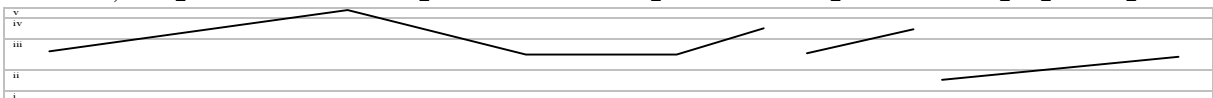
<Exo 20,9=> Shee"ShaeTh<mn=~_ii> JaaMil"M<mn=~_ii> T,a&:aBhoo"Dh<zr=...iii/iv>
 W:&aa5il"Thaa<mn=~_iii> *KoL_M:LA(%)KhTae^Khaa<sg=iv/v\iv>
 Shee"ShaeTh JaaMil"M T,a&:aBhoo"Dh W:&aa5il"Thaa KoL_M:LA(%)KhTae^Khaa



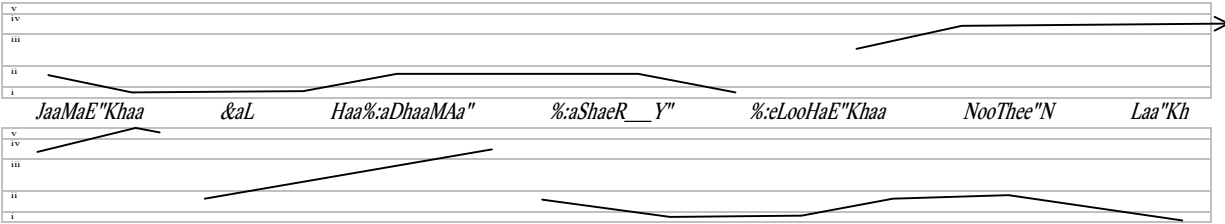
<Exo 20,10=> W:JoO"M<qd=iv/v> HaShSh:Bhil&i!"<gr=v\iv> ShaBBaa"Th<mnLg=~_iii>|
 LaY"<mn=~_iii> %:eLooHaE"Khaa<rv=/||=iii/iv||> LOO<mn=~_iii> Tha&:a5Ae"<mn=~_iii>
 KhoL_M:LAaKhaa"<pz=iv\iii/+iii> %aTTAa"<mnLg=~_iii>|*
 uUBhiN:Khaa,_uUBhiTTae^Khaa<tl=iv;> &aBhD:Khaa"<qd=iv/v>
 Wa*%:aMaa,Th:Khaa"<gr=v\iv> uUBh:HaeMTae^Khaa<rv=/||=iii/iv||> W:Gheer:Khaa^<p\$=iii/iv>
 %:aShae"R<mn=~_ii> BiSh&aaRaE"Khaa<zq=/||=iii||>
 W:JoO"M HaShSh:Bhil&i!" ShaBBaa"Th LaY" %:eLooHaE"Khaa LOO Tha&:a5Ae" KhoL_M:LAaKhaa" %aTTAa"



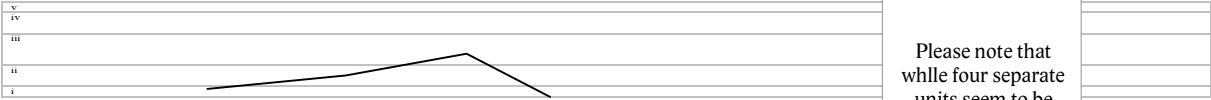
<Exo 20,11=> Kil"<mn=~_iii> Shee,ShaeTh_JaaMilM<tl=;iv> &aa5Aa"<qd=iv/v> Y"<gr=v\iv>
 %aeTh_HaShShaaMa"JiM<mn=~_iii> W:%aeTh_Haa%aa"RaeC<rv=/||=iii/iv||>
 %aeTh_HaJJaM^<p\$=iii/iv> W:%aeTh_KoL_%:aShaeR_Baa"M<zq=/||=ii/iii||>
 WaJJa"NaX<7f=i/ii> BaJJoO"M<mn=~_ii> HaShSh:Bhil&i!"<at=\||=ii||>
 &aL_Kee"N<rv=/||=iii/iv||> BeeRa"Kh<dr=iv\ii> Y"<tv=ii..i> %aeTh_JoO"M<mr=ii..i>
 HaShShaBBaa"Th<7f=i/ii> Wa,*J:QaDD:Shee"HuU<sq=\||=ii||># <s=>
 Kil" Shee,ShaeTh_JaaMilM &aa5Aa" Y" %aeTh_HaShShaaMa"JiM W:%aeTh_Haa%aa"RaeC %aeTh_HaJJaM^ W:%aeTh_KoL_%:aShaeR_Baa"M



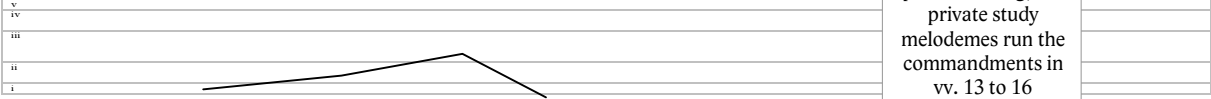
<Exo 20,12=> KaBBee"Dh<mr=ii..i> %aeTh_%aaBhil"Khaa<7f=i/ii>
 W:%aeTh_%iMMae"Khaa<at=\|=ii\i> L:Ma^&aN<p\$=iii/iv> Ja*%:aRiKhuUN"<mn=~_ =iv>
 JaaMaE"Khaa<zq=/|=iv/v||> &aL<jt=;ii/iii..> Haa%:aDhaaMAa"<zq=/|=iii/iv||>
 %:aShaeR_Y"<mr=ii..i> %:eLooHaE"Khaa<7f=i/ii> NooThee"N<mr=ii..i> Laa"Kh<sq=\||># <s=>
 KaBBee"Dh %aeTh_%aaBhil"Khaa W:%aeTh_%iMMae"Khaa L:Ma^&aN Ja%:aRiKhuUN"



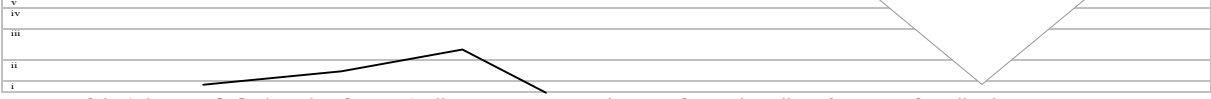
<Exo 20,13=> LOO"<7f=i/ii> TiRCaa"X<sq=\||=iii\i||># <s=>
 LOO" TiRCaa"X



<Exo 20,14=> LOO"<7f=i/ii> TiN%aa"Ph<sq=\||=iii\i||># <s=>
 LOO" TiN%aa"Ph

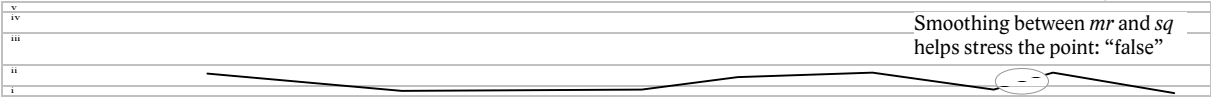


<Exo 20,15=> LOO"<7f=i/ii> TiGhNoo"Bh<sq=\||=iii\i||># <s=>
 LOO" TiGhNoo"Bh



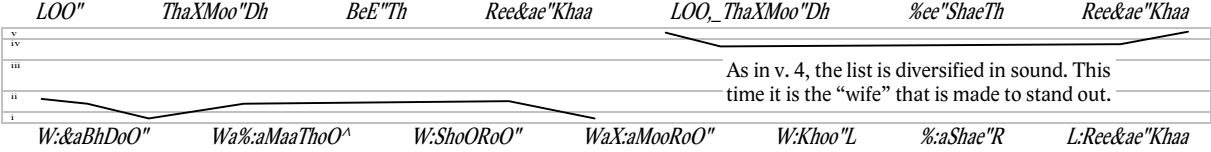
Please note that while four separate units seem to be recommended for public reading, the private study melodemes run the commandments in vv. 13 to 16 together in a single unit.

<Exo 20,16=> LOO,*_Tha&:aNae"<mr=ii..i> Bh:Ree&:aKhaa"<7f=i/ii> &ee"Dh<mr=ii..i>
 Shaa"QaeR<sq=\||=ii\i||># <s=>
 LOO,_Tha&:aNae" Bh:Ree&:aKhaa" &ee"Dh Shaa"QaeR



Smoothing between mr and sq helps stress the point: "false"

<Exo 20,17=> LOO"<mr=ii..i> ThaXMoo"Dh<7f=i/ii> BeE"Th<mn=~_ =ii>
 Ree&ae"Khaa<at=\|=ii\i> LOO,_ThaXMoo"Dh<gm=v\iv..> %ee"ShaeTh<mn=~_ =iv>
 Ree&ae"Khaa<rv=/|=iv/v||> W:&aBhDoO"<mh=ii/iii> Wa*%:aMaaThoO^<p\$=iii/iv>
 W:ShoORoO"<mn=~_ =iv> Wa*X:aMooRoO"<zq=/|=iv/v||> W:Khoo"L<7f=i/ii>
 %:aShae"R<mr=ii..i> L:Ree&ae"Khaa<sq=\||=i/ii\i||># <p=>
 LOO" ThaXMoo"Dh BeE"Th Ree&ae"Khaa LOO,_ThaXMoo"Dh %ee"ShaeTh Ree&ae"Khaa



As in v. 4, the list is diversified in sound. This time it is the "wife" that is made to stand out.

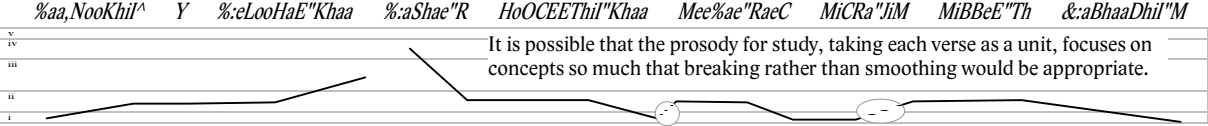
This is to conclude the whole utterance. That is why it drops from the level v to the level i.

20:2 %aa,NooKhil"<7f> BHL :2 %:eLooHaE"Khaa<at> BHL :2 #L %:aShae"R<dr> אֵשֶׁר, #H <dr> אֵשֶׁר, so BHL. #R is illegible (all std prints I checked show <dr>), RAMBAN <mn>; :2 #L HoOCEETHil"Khaa<tv> הוֹעֵתֶךָ, #H <tv> הוֹעֵתֶךָ, BHL <tv>, std rab., RAMBAN <tl>, #R illeg. but certainly not <tl>. All other differences betw. #L with #H on the one side as against RAMBAN on the other side, with #R and std editions agreeing to the one or the other group are also clear, no need to document it explicitly. :2 #L,H,R Mee%ae"RaeC<mr> MiCRa"JiM<7f>, RMBN, std <qd><gr> :2 MiBBE"Th<mr> BHL; :2 &:aBhaaDhil"M<sq> BHL, <at> #L,H,R, <rv> RMBN, std (except Victor Goldschmidt Verlag, Basel, that has <at:sq:rv>); 20:4 Wa%:aShae"R<mn> BHL; 20:5 #R, RMBN Tho,&oBh:DheeM<sg>, #H illeg.; :5 L:5oo,N:%aa"J<at> #R, std., RMBN; 20:6 La,%:aLaaPhil"M<zq> #H, R, RMBN, std; :6 L:%oo,H:aBha"J<7f> RMBN, std., illegible #R; :6 uULShoo,M:ReE"<mr> #R, RMBN, std. (not #H?); 20:9 Kh~ RMBN (Kh|~ #R?) while K~ BHS, K|~ #L, H, std. (some double <sg>); 20:10 %aTTAa"<mn> BHL; :10 Wa,%:aMaa,Th:Khaa"<gr> #R, RMBN, std.; 20:11 WaJ:QaDD:Shee"HuU<sq> RMBN, some std. (#H illeg.); 20:12 Ja*%:aRiKhuUN"<mn *{,}?> #L is possibly erased (like that: יִצְחָק), #H illeg., ~,~ RMBN, std.; 20:16 LOO_ #H?, RMBN, std.; 20:17 Wa,%:aMaaThoO"<p\$> #L erased?, #H illeg., std.; Wa,X:aMooR~ std., #L erased? , BHL has LOO"<mr> JiHJAE,_L:Khaa<tl>. %:eLooHil"M<qd> %:aXeeRil"M<gr> BHL

B2c2.2 The Private Reading Melodemes

(Ta&aM TaXToON = lower)

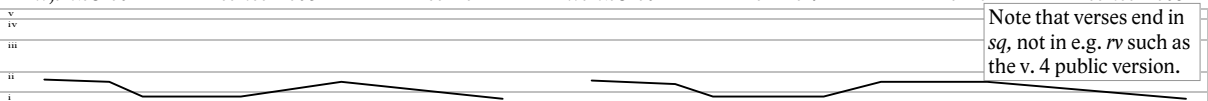
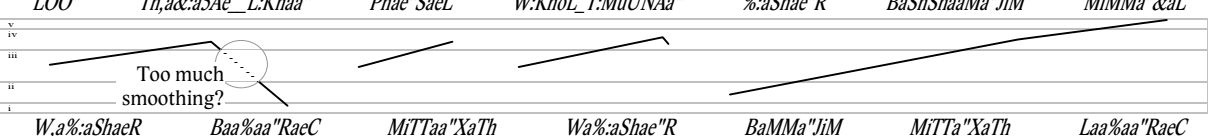
<Exo 20,2=> %aa,NooKhil"<7f*=i/ii> Y"<mn=~_ =ii> %:eLooHaE"Khaa<at*=|=i/iii|>
%:aShae"R<dr=iv\ii> HoO*CEETHil"Khaa<tv=ii\i..> Mee%ae"RaeC<mr=ii.. \i> MiCRa"JiM<7f=i/ii>
MiBBEe"Th<mr*=ii.. \i> &:aBhaaDhil"M<sq*=|=i||>#



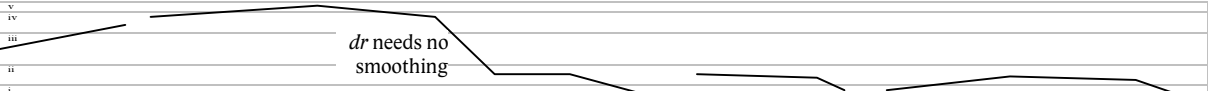
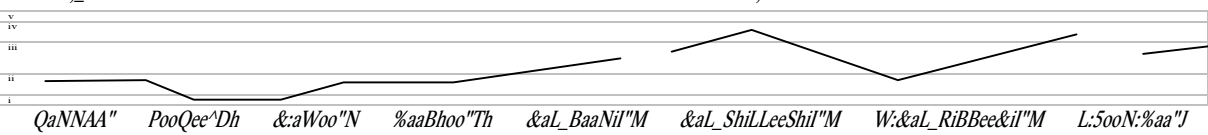
<Exo 20,3=> LOO* _JiHJae"<mr*=iii.. \ii> L:Khaa"<tv=ii\i..> %:eLooHil"M<mr=ii.. \i>
%:aXeeRil"M<7f=i/ii> &aL_PaaNaa"J<sq=|=ii\i||>#



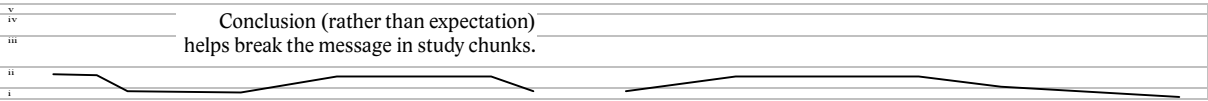
<Exo 20,4=> LOO, _Th,a&:a5Ae"<qd=iii/iv> L:Khaa"<mr=\ii.. \i> Phae^SaeL<p\$=/iii/iv>
W:KhoL_T:MuUNAA"<zq=|=iii/iv||> %:aShae"R<mh=ii/iii> BaShShaaMa^JiM<p\$=iii/iv>
MiMMA"&aL<zq=|=iv/v||> W,a*%:aShae"R<mr=ii.. \i> Baa%aa"RaeC<7f=i/ii>
MiTTaa"XaTh<at=|=ii\i|> Wa%:aShae"R<mr=ii.. \i> BaMMA"JiM<7f=i/ii>
MiTTa"XaTh<mr=ii.. \i> Laa%aa"RaeC<sq=|=i||>#



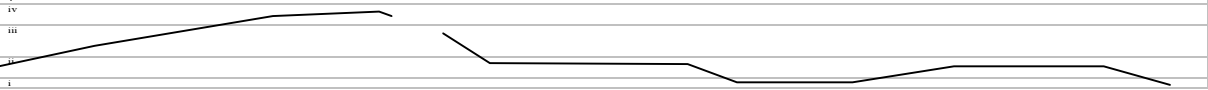
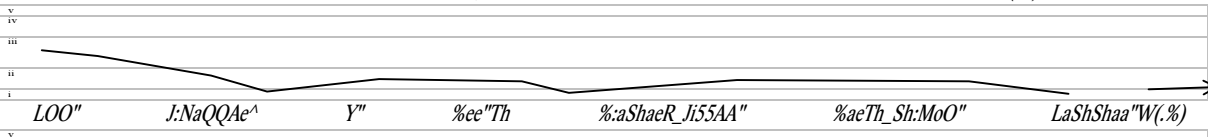
<Exo 20,5=> LOO, _ThiShTa*XWae"<mr=ii.. \i> LaaHae"M<7f=i/ii> W:LOO"<mn=~_ =ii>
Tho*&oBh:Dhee"M<at=|=ii/iii|> Kil"<mn=~_ =iii> %,aaNooKhil"<gm=iv\iii..> Y"<mh=ii/iii>
%:eLooHaE^Khaa<p\$=iii/iv> %ee"L<mn=~_ =iii> QaNNAa"<zq=|=iii/iv||> Poo^QeeDh<Tl=iv;>
&:aWoo"N<qd=iv/v> %aaBhoo"Th<dr=iv\ii> &aL_BaaNil"M<tv=ii\i..>
&aL_ShiLLeeShil"M<mr=ii.. \i> W:&aL_RiBBee&iil"M<7f=i/ii> L:5oo*N:%aa"J<sq=|=ii\i||>#



<Exo 20,6=> W:&oo"5Ae<mr=ii.. \i> Xae"SaeDh<7f=i/ii> La%:aLaaPhil"M<at=|=ii\i|>
L:%oo*H:aBha"J<7f=i/ii> uUL:Shoo*M:ReE"<mr=ii.. \i> MiCWooThaa"J<sq=|=i||># <s=>



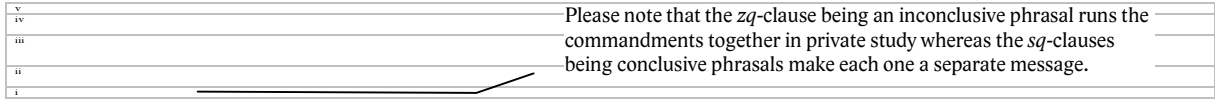
<Exo 20,7=> LOO"<mr=iii.. \ii> Thi55AA"<tv=ii\i..> %aeTh_Shee,M_Y"<mr=-ii.. \i>
%:eLooHaE"Khaa<7f=i/ii> LaShShaa"W(.%)<at=|=ii\i|> Kil"<mn=~_ =i> LOO"<mh=ii/iii>
J:NaQQAe^<p\$=iii/iv> Y"<zq=|=iv||> %ee"Th<tv=iii\ii..> %:aShaeR_Ji55AA"<mr=ii.. \i>
%aeTh_Sh:MoO"<7f=i/ii> LaShShaa"W(.%)<sq=|=ii\i||># <p=>



<Exo 20,14=> LOO"<mn=~_ =ii> ThiN%aa"Ph<at=\\|=ii\\i|> <s=>
LOO" ThiN%aa"Ph

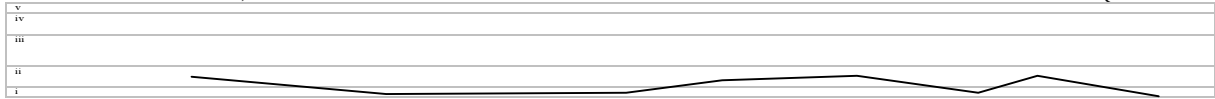


<Exo 20,15=> LOO"<mn=~_ =i> ThiGhNoo"Bh<zq=\\|=i/ii||> <s=>
LOO" ThiGhNoo"Bh

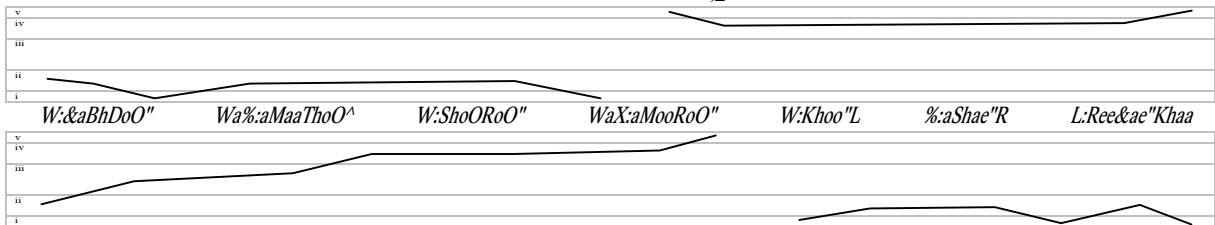


Please note that the zq-clause being an inconclusive phrasal runs the commandments together in private study whereas the sq-clauses being conclusive phrasals make each one a separate message.

<Exo 20,16=> LOO,*_Tha&:aNae"<mr=ii..\\i> Bh:Ree&:aKhaa"<7f=i/ii> &ee"Dh<mr=ii..\\i> Shaa"QaeR<sq=\\|=i||># <s=>
LOO,_Tha&:aNae" Bh:Ree&:aKhaa" &ee"Dh Shaa"QaeR



<Exo 20,17=> LOO"<mr=ii..\\i> ThaXMoo"Dh<7f=i/ii> BeE"Th<mn=~_ =ii> Ree&ae"Khaa<at=\\|=ii/iii|> LOO,_ThaXMoo"Dh<gm=v\\iv..> %ee"ShaeTh<mn=~_ =iv> Ree&ae"Khaa<rv=\\|=iv/v|> W:&aBhDoO"<mh=ii/iii> Wa*%:aMaaThoO^<p\$=iii/iv> W:ShoORoO"<mn=~_ =iv> Wa*X:aMooRoO"<zq=\\|=iv/v||> W:Khoo"L<7f=i/ii> %:aShae"R<mr=ii..\\i> L:Ree&ae"Khaa<sq=\\|=i/ii\\i|># <p=>
LOO" ThaXMoo"Dh BeE"Th Ree&ae"Khaa LOO,_ThaXMoo"Dh %ee"ShaeTh Ree&ae"Khaa



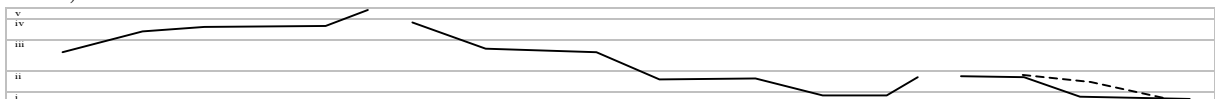
20:2 %aa,NooKhil^<p\$> BHL; :2 %:eLooHaE"Khaa<zq> BHL; :2 HoO,CEETHil"Khaa<tv> #R, RMBN, std.; :2 MiBBE"Th <mn> BHL; :2 &:aBhaaDhil"M<at> BHL; 20:3 Much depends on maqqeph placement: LOO is followed with a line break in #L but should we read LOO, it might suggest LOO,_JiHJAE,_L:Khaa<tv> was meant (as the two perpendiculars look very similar). BHL has LOO,_. BHS interprets the juncture as blank (but what LOO, alone would mean then?), #H looks much the same (incl. the line break), #R (barely legible in my print) offers LOO<?>_JHJH_L:Khaa<?>, RMBN prints LOO_Ji,HJAE"<mr> L:Khaa<tv>, some std. add <mn> to JHJH. It should be noted <mr> may look close to {}, cf also Wickes 1887 p:24 on easy mistaking {}, and <mr> in mss; 20:4 Wa,%:aShae"R BHL (and so consistently elsewhere, not commented here); 20:5 ThiShTa,XWae"<mr> #R, RMBN, std.; :5 for Tho,&oBh:Dhee"M<at> see above; :5 L:5oo,N:%aa"J<at> see above; 20:6 L:%oo,H:aBha"J<7f> see above; :6 uULShoo,M:ReE"<mr> see above; 20:10 Wa,%:aMaa,Th:Khaa"<p\$> as above; 20:11 WaJ:QaDD:Shee"HuU<sq> as above; 20:12 Ja,%:aRiKhuUN<mn> as above; 20:13 ThiRCa"X<7f> i.e. with a instead of aa #R, RMBN, std. (possibly also #R); 20:16 LOO_ #R, RMBN (#H?, not std.); 20:17 Wa,%:aMaaThoO"<p\$> as above; :17 Wa,X:aMooRoO"<zq> as above.

B2c3 5M 5:6-21

The same Decalogue repeated in nearly identical wording is offered here in the 2-in-1 format just as the MsH text has it. The BnaA output was stripped of additional marking of syllable borders, morphological junctures and auxiliary characters. Minor mistakes have been corrected including the <mr> in MiBBETh, v. 6, that was missing in the input BW6 source. <az>=<az>. The only added value is distinguishing the 'upper' melodemes from the 'lower' ones by attaching ^ (according to BHL, p:1228). The contours are also overlaid in a single 'stave': the full line is used for public reading, the dashed line for private reading.

The full line applies to both unless the private contour has a specific shape.

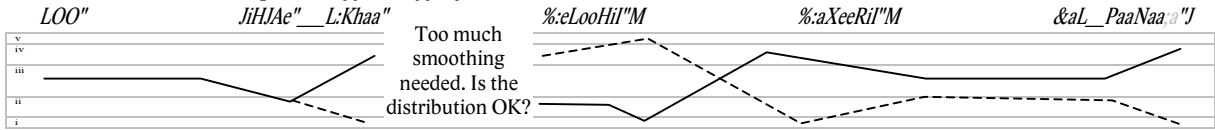
<Deu 5,6=> %aa,NooKhil^<p\$=iii/iv> Y"<mn=~_ =iv> %:eLooHaE"Khaa<zq=\\|=iv/v||> %:aShae"R<dr=iv\\iii> HoOCEETHil"Khaa<tv=iii\\ii..> Mee%ae"RaeC<mr=ii..\\i> MiCRa"JiM<7f=i/ii> MiBBE"Th<mn:mr^=~_ =ii:ii..\\i^> &:aBhaaDhil"M<at:sq^=\\|:\\|^=i||>#
%aa,NooKhil^ Y" %:eLooHaE"Khaa %:aShae"R HoOCEETHil"Khaa Mee%ae"RaeC MiCRa"JiM MiBBE"Th &:aBhaaDhil"M



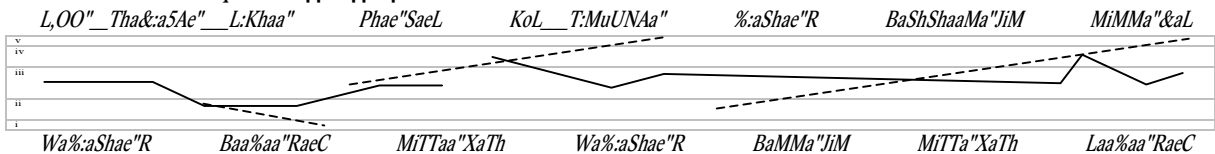
Whereas the rise-fall pattern of this verse shows similarity to 2M 20:2, the contour of the next verse appears unfamiliar. However, stressing %:eLooHiM for public and %:aXeeRiIM for study is the feature met already in 2M 20:3.

The public mr-sq probably indicated an earlier (or also deeper?) final drop.

<Deu 5,7=> LOO"<mn=~_ =iii> JiHJAE"<mr=iii.. \ii (BHL_)>_L:Khaa"<tv:tl^=ii\i...;iv>
 %:eLooHil"M<az:mr^=iv/v:ii.. \i^> %:aXeeRil"M<7f:gr^=i/ii:iv\iii^>
 &aL_PaaNaa;"J<sq:rv^=\||=ii\i|:|/|^=iii/iv^>#

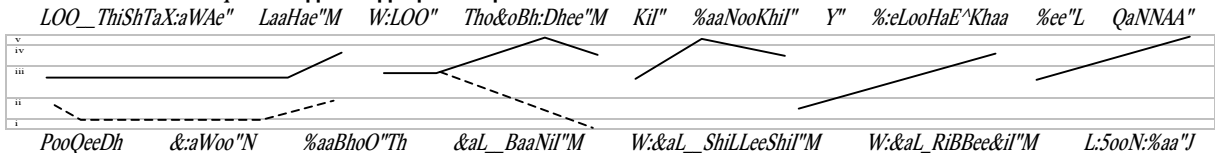


<Deu 5,8=> L,OO"<mn=~_ =iii>_Tha&:a5Ae"<mr=iii.. \ii (BHL ,
 no_)>_L:Khaa"<mr:mn^=ii.. \i:~_ ^=ii^> Phae"SaeL<p\$:mnLg^=iii/iv:~_ ;^=iii;^>|
 KoL_T:MuUNAA"<zq:pz^=||=iv/v|:iv\iii/+iii^> %:aShae"R<mh:mn^=ii/iii:~_ ^=iii^>
 BaShShaaMa"JiM<p\$:mnLg^=iii/iv:~_ ;^=iii^>| MiMMA"&aL<zq:pz^=||=iv/v|:iv\iii/+iii^>
 Wa%:aShae"R<mr:tl^=iii.. \ii;iv^> Baa%aa"RaeC<az:7f=iv/v:i/ii(BHL qd=iv/v)^>
 MiTTaa"XaTh<at:gr^=\||=iv\ii|:v\iv^> Wa%:aShae"R<mr=ii.. \i>
 BaMMA"JiM<7f:mnLg^=i/ii:~_ ;^=ii;^>| MiTTa"XaTh<mr:mn^=ii.. \i:~_ ^=ii^>
 Laa%aa"RaeC<sq:rv^=\||=i|:|/|^=ii/iii^>#



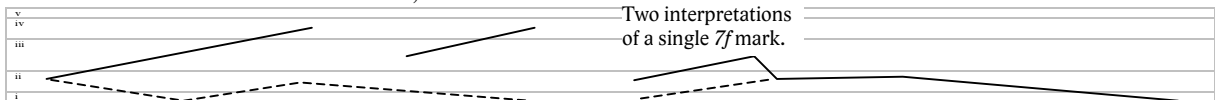
It seems apparent the prosody for study focused on concepts rather than the whole commandment units.

<Deu 5,9=> LOO_ThiShTaX:aWae"<mr:mn^=ii.. \i:~_ ^=iii^> LaaHae"M<7f:zr^=i/ii...iii/iv^>
 W:LOO"<mn=~_ =iii> Tho&oBh:Dhee"M<at:sg^=\||=iii\i|:v\iv^> Kil"<mn=~_ =iii>
 %aaNooKhil"<gm=v\iv..> Y"<mh=ii/iii> %:eLooHaE^Khaa<p\$=iii/iv> %ee"L<mn=~_ =iii>
 QaNNAa"<zq:|=iv/v|> PooQeeDh<tl=iv; > &:aWoo"N<az=iv/v> %aaBhoO"Th<dr=iv\ii>
 &aL_BaaNil"M<tv=ii\i..> W:&aL_ShiLLeShil"M<mr=ii.. \i> W:&aL_RiBBee&iil"M<7f=i/ii>
 L:5ooN:%aa"J<sq:at^=\||=ii\i|:|/|^=ii\i^>#

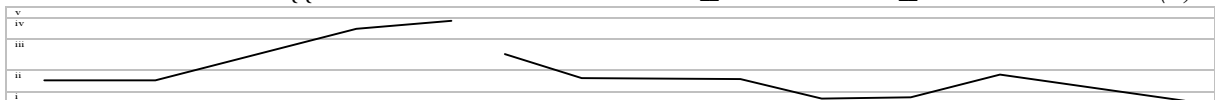
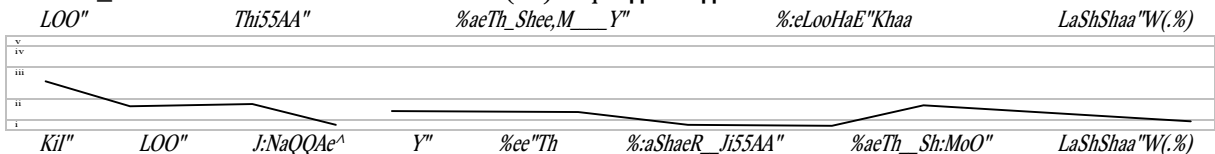


The public reading links to the next verse.

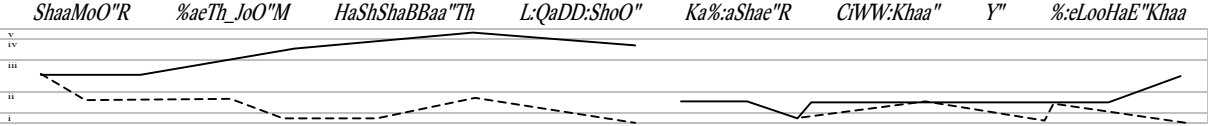
<Deu 5,10=> W:&oo"5Ae<mr:mh^=ii.. \i:ii/iii^> Xae"SaeDh<7f:p\$^=i/ii:iii/iv^>
 L,a%:aLaaPhil"M<at:zq^=\||=ii\i|:|/|^=iii/iv^> L:%ooH:aBha"J<7f=i/ii:ii/iii>
 uUL:ShooM:ReE"<mr=ii.. \i> <k[MicWooThoO]k> <q[MicWooThaa"J<sq=\||=i|>]q># <s=>
 W:&oo"5Ae, Xae"SaeDh, L,a%:aLaaPhil"M, L:%ooH:aBha"J, uUL:ShooM:ReE", MicWooThaa"J



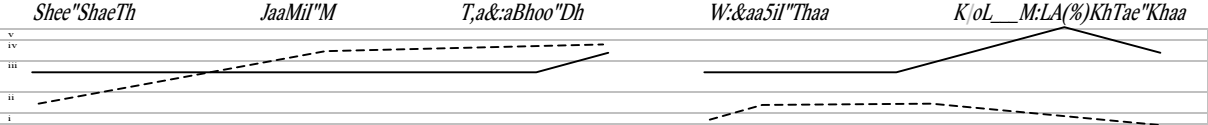
<Deu 5,11=> LOO"<mr=iii.. \ii> Thi55AA"<tv=ii\i..> %aeTh_Shee,M_Y"<mr=-ii.. \i>
 %:eLooHaE^Khaa<7f=i/ii> LaShShaa"W(.%)<at=\||=ii\i|> Kil"<mn=~_ =ii> LOO"<mh=ii/iii>
 J:NaQQAe^<p\$=iii/iv> Y"<zq:|=iv/v|> %ee"Th<tv=iii\ii..> %:aShaeR_Ji55AA"<mr=ii.. \i>
 %aeTh_Sh:MoO"<7f=i/ii> LaShShaa"W(.%)<sq=\||=ii\i|># <s=>



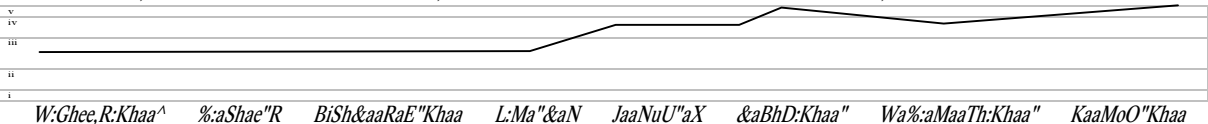
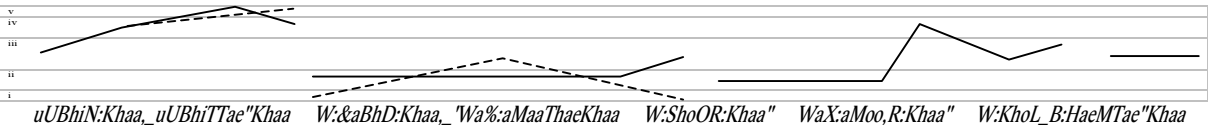
<Deu 5,12=> ShaaMoO"R<tv:mn^=iii\ii..~_^=iii^> %aeTh_JoO"M<mr:tl^=ii.. \i;iv^>
 HaShShaBBaa"Th<7f:az^=i/ii:iv/v^> L:QaDD:ShoO"<at:gr^=|\|=ii\i|:v\iv^>
 Ka%:aShae"R<mr=ii.. \i> CiWW:Khaa"<7f:mnLg^=i/ii:~_ ;^=ii;^>| Y"<mr:mn^=ii.. \i:~_^=ii^>
 %:eLooHaE"Khaa<sq:rv^=|\|=ii\i|:|/|^=ii/iii|^>#



<Deu 5,13=> Shee"ShaeTh<mh:mn^=ii/iii:~_^=iii^> JaaMil"M<p\$:mn^=iii/iv:~_^=iii^>
 T,a&:aBhoo"Dh<zq:zr^=||=iv||:..iii/iv^> W:&aa5il"Thaa<7f:mn^=i/ii:~_^=iii^>
 K|oL_M:LA(%)KhTae"Khaa<sq:sg^=|\|=ii\i|:|/v\iv^>#

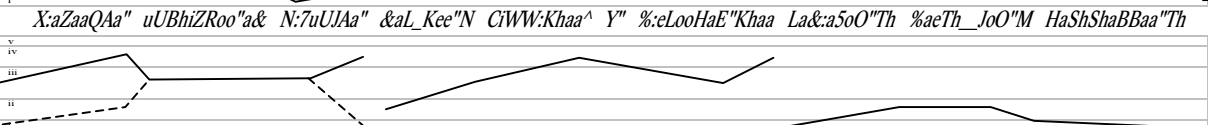
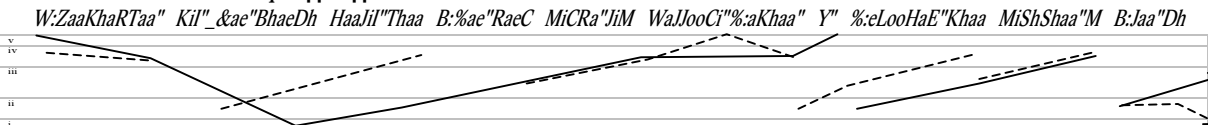


<Deu 5,14=> W:JoO^M<p\$=iii/iv (BHL az=iv/v)> HaShSh:Bhil&i|"<zq:gr^=||=iv/v||:v\iv^>
 ShaBBaa"Th<7f:mnLg^=i/ii:~_ ;^=ii;^>| LaY"<7f:mn^=ii/iii:~_^=ii^>
 %:eLooHaE"Khaa<at:rv^=|\|=iii\i|:|/|^=ii/iii|^> LOO"<mn=~_ =ii> Tha&:a5Ae"<mn=~_ =ii>
 KhoL_M:LAaKhaa"<pz=iv\iii/+iii> %aTTAa"<mn=~_ =iii>
 uUBhiN:Khaa, uUBhiTTae"Khaa<mn=~_ =iii> W:&aBhD:Khaa, _"Wa%:aMaaThaeKhaa<Tl=iv;>
 W:ShoOR:Khaa"<az=iv/v> WaX:aMoo,R:Khaa"<gr=v\iv>
 W:KhoL_B:HaEMTae"Khaa<rv=|/|=iv/v|> W:Ghee,R:Khaa^<p\$=iii/iv> %:aShae"R<mn=~_ =iii>
 BiSh&aaRaE"Khaa<zq=||=iii/iv|^> L:Ma"&aN<rv=|/|=iii..|> JaaNuU"aX<tv=ii\i..>
 &aBhD:Khaa"<mr=ii.. \i> Wa%:aMaaTh:Khaa"<7f=i/ii> KaaMoO"Khaa<sq:at^=|\|=ii\i|:|/|^=ii\i|^>#



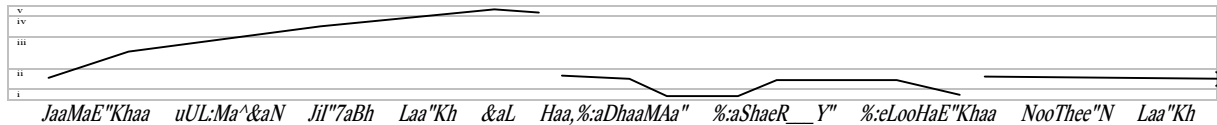
The public reading links to the next verse.

<Deu 5,15=> W:ZaaKhaRTaa"<rv:gm^=||=iv|:v\iv..^>
 Kil"<mn=~_ =iii>_ &ae"BhaeDh<mh:mr^=ii/iii:ii.. \i^> HaaJil"Thaa<p\$:mnLg^=iii/iv:~_ ;^=i/ii;^>|
 B:%ae"RaeC<mn=~_ =iii> MiCRa"JiM<zq:rv^=||=iii/iv|^>|/|^=iii/iv|^>
 WaJJooCi"%:aKhaa"<az.gr:tl^=iv/v\iv;iv^> Y"<mh:az^=ii/iii:iv/v^>
 %:eLooHaE"Khaa<p\$:mh^=iii/iv:ii/iii^> MiShShaa"M<zq:p\$^=||=iii/iv|^>|/|^=iii/iv|^>
 B:Jaa"Dh<mr:mh^=ii.. \i:ii/iii^> X:aZaaQAa"<7f:p\$^=i/ii:iii/iv^> uUBhiZRoo"a&<mn=~_ =iii>
 N:7uUJAa"<at:zq^=|\|=iii\i|:|/|^=iii/iv^> &aL_Kee"N<rv=|/|=ii/iii> CiWW:Khaa^<p\$=iii/iv>
 Y"<mn=~_ =iii> %:eLooHaE"Khaa<zq=||=iii/iv> La&:a5oO"Th<7f=i/ii> %aeTh_JoO"M<mr=ii.. \i>
 HaShShaBBaa"Th<sq=|\|=i|^># <s=>

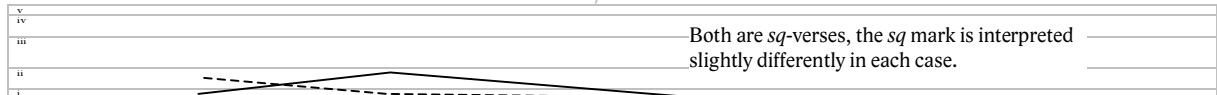


<Deu 5,16=> KaBBee"Dh<mh=ii/iii> %aeTh_%aaBhil^Khaa<p\$=iii/iv>
 W:%aeTh_%iMMae"Khaa<zq=||=iv/v|^>|/|^=ii/iii|^> Ka%:aShae"R<mr=ii.. \i> CiWW:Khaa"<7f=i/ii>
 Y"<mn=~_ =ii> %:eLooHaE"Khaa<at=|\|=ii\i|^> L:Ma"&aN<mnLg=~_ ;=ii;|^>
 Ja%:aRiIKhu"N<mn=~_ =ii> JaaMaE"Khaa<rv=|/|=ii/iii> uUL:Ma^&aN<p\$=iii/iv>

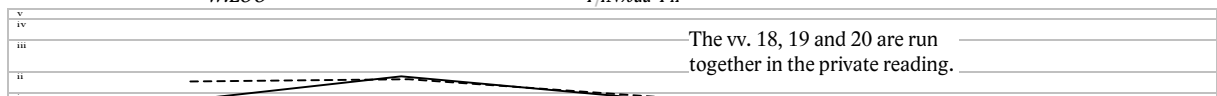
JiI"7aBh<mn=~_ =iv> Laa"Kh<zq=/||=iv/v||> &aL<jt=;ii/iii..> Haa,%:aDhaaMAa"<zq=/||=iii/iv||>
 %:aShaeR_Y"<mr=ii..i> %:eLooHaE"Khaa<7f=i/ii> NooThee"N<mr=ii..i> Laa"Kh<sq=\||=i||># <s=>
 KaBBee"Dh %aeTh_%aaBhil^Khaa W:%aeTh_%iMMae^Khaa Ka%:aShae"R CiWW:Khaa" Y" %:eLooHaE"Khaa L:Ma"&aN Ja%:aRilKhu"N



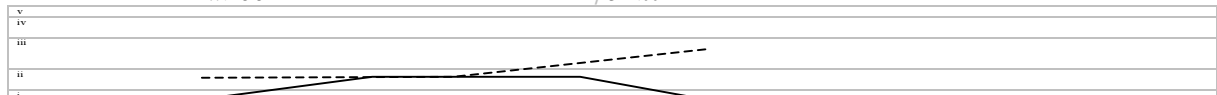
<Deu 5,17=> LOO"<mr:7f^=ii..i:i/ii^> T_iRCaa"X<sq=\||=i||:ii\i||># <s=>
 LOO" T_iRCaa"X



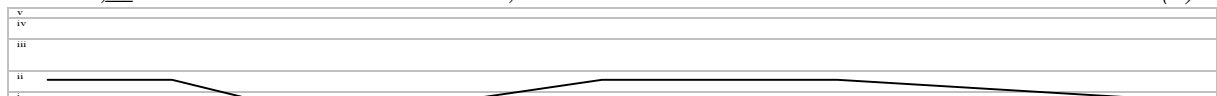
<Deu 5,18=> W:LOO"<mn:7f^=~_ =ii:i/ii^> T_iN%aa"Ph<at:sq^=\||=ii\i|:|\|^=ii\i||^># <s=>
 W:LOO" T_iN%aa"Ph



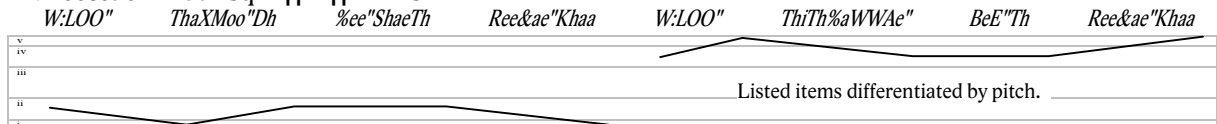
<Deu 5,19=> W:LOO"<mn:7f=~_ =ii:i/ii^> T_iGhNoo"Bh<zq:sq=/||=ii/iii||:|\|^=ii\i||^># <s=>
 W:LOO" T_iGhNoo"Bh



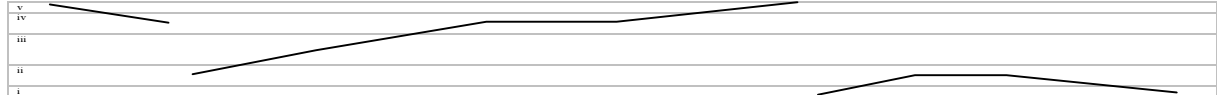
<Deu 5,20=> W:LOO,_Tha&:aNae"<mr=ii..i> Bh:Ree,&:aKhaa"<7f=i/ii> &ee"Dh<mr=ii..i>
 Shaa"W(.%)<sq=\||=i||># <s=>
 W:LOO,_Tha&:aNae" Bh:Ree,&:aKhaa" &ee"Dh Shaa"W(.%)



<Deu 5,21=> W:LOO"<mr=ii..i> ThaXMoo"Dh<7f=i/ii> %ee"ShaeTh<mn=~_ =ii>
 Ree&ae"Khaa<at=\||=ii\i|> <s=> W:LOO"<az=iv/v> ThiTh%aWWAe"<gr=v\iv>
 BeE"Th<mn=~_ =iv> Ree&ae"Khaa<rv=/|=iv/v|> 5aaDhee"HuU<gr=v\iv>
 W:&aBhDoO"<mh=ii/iii> Wa%:aMaaThoO^<p\$=iii/iv> ShoORoO"<mn=~_ =iv>
 WaX:aMooRoO"<zq=/||=iv/v||> W:Khoo"L<7f=i/ii> %:aShae"R<mr=ii..i>
 L:Ree&ae"Khaa<sq=\||=i||># <s=>



5aaDhee"HuU W:&aBhDoO" Wa%:aMaaThoO^ ShoORoO" WaX:aMooRoO" W:Khoo"L %:aShae"R L:Ree&ae"Khaa



This was a hard test for the melodeme values. Still, they connect well in contours and appear to make sense. Encouraging is to see the public reading melodemes can combine in line with the message and the private study melodemes tend to emphasize concepts, which seems to be apparent even with these estimated values. The contours have been slightly edited at a few spots to make transitions smoother. Though it was made with the content of the text in mind, the smoothing was nothing beyond capacity of a simple program. As mentioned already, melodemes should be taken as pointers or hints for a knowledgeable lector reading with intuition, not as hard bricks to align with each other when put mechanically side by side. Also, the melodeme values are intervals or movements whose definitions allow some freedom to shift them up and down the pitch scale. Finally, these are just tentative initial data to prime testing procedures. Probably, adjustments are necessary and more prosodic parameters are yet to be added, especially rhythm and emphasis, which are always key features of public reading.

B2d The Two Markings Compared

The Decalogue passages are prosodic. The point of the analysis was to compare the alternatives in their doubled marking and, possibly, to confront the 2M and 5M versions of the Decalogue. (This was not done explicitly but it can be made easily by visually inspecting the contours if the reader wished so.)

The duality of the text to be analysed now is of a different kind. It is a poetic text, preserved in both 2 Sam. 22 and as Psalm 18. It is noteworthy and valuable the marking is of the majority type (2'1'b, we have already rejected to call it 'prosodic') in 2Sam 22 while Psalm 18 is in the minority marking (3'b, mislabelled 'poetic'). This condition makes it possible to confront a text that is identical or very similar, almost verbatim, in two versions that use different mark-up systems. Their marking logic is different, they have different sensitivity and flexibility and break down in a different number of layers.¹⁸⁰

Price 2010 expresses the common belief among the accentuologists that "each set of accents has its own rules and associated grammar—similar in structure but different in content" (p:14). If the "strict system of rules" (*ibid.*) so differs in content from the other, the two of them can be expected to produce very different pictures. If the marks are a syntactic mark-up, the pictures should be structurally close as the syntax fed into the systems is the same. Similar expectations apply if the original function was prosody: the contours should not be widely different provided intonation they describe was comparable.

The comparison is going to be made by lines. Intonation is so dependent on meaning that rendering sense units might be appreciated more than with the well-known Decalogue. As it is only the marks and contours what is of interest at this point, we are going to replace the Hebrew text with a translation broad enough to get over the differences between the two versions of the text.¹⁸¹ It saves us the need for textual criticism (which has had to be done, though imperfectly, on the Decalogue). Where the texts differ, it was indicated with parentheses. Remarkable points have been commented at the spots.

The following two verses have been analyzed again from current resources and the PMH II viewpoints.

AH# pitch grades. See tab. on p:98. 2S 22:1 Ps 18:1	
<i>sense digest:</i>	To the LORD words of this song when the LORD saved him [David] out of all enemies and from Saul
2S 22:2 Ps 18:2-3	
<i>sense digest:</i>	He then said O LORD my rock, my fortress my deliverer

*etc.*¹⁸² Below, the PMH I analysis is followed in tags. The generalizations of 2013 has been revised and revalued. Where needed, the melodeme sequence has been completed. The few portions where texts differ have been skipped. Please note words are sometimes joined with maqqeph. Unlike PMH I, I have not compounded the transcript.

¹⁸⁰ For more on the systems, see the A1 introduction. The passages were confronted already in *PMH I*:226–229, F3.3, where it was probably too early to interleave 2Sam 22 and Ps 18 lines with bare tags as no complete analysis of melodemes followed. It was that comparison, however, that persuaded me the 2'1'b and 3'b might be, after all, two versions of a single marking system. At this point in *PMH II*, we are in a better position to revise the match.

¹⁸¹ It might be interesting to note the idea of printing the two passages in parallel columns in the original graphics failed miserably as none of the word processors I tried (Word 2000, Word 2013, LibreOffice 5.3.2.2 of 5/2017 and BabelPad 9.0, both current at the time) was able to make Hebrew lines wrap correctly (LtR/RtL was useless in any setting tried). Time-consuming troubles like these helped decide already at *PMH I* to leave graphics for ASCII. I appologize for the inconvenience as unlike the Decalogue, checking *two* passages in print may be bothersome.

¹⁸² A contour-generating software was not ready yet. Manual drawing is only to suggest a possible development.

2S 22:3
Ps 18:3

<mr=ii..i><7f=i/ii> <at=\\> <gm=v\\iv..> <mn=~_><rv=/|><p\$=iii/iv>
<mn=~_><dx=i/ii_> <at=\\> <mr=ii..i> <rvMg=iii><sq=\\||>

The proportion difference is not well established. More important is the shift in the pitch position.

My God, my rock I take refuge in my shield my stronghold

2S 22:4
Ps 18:4

<7f=i/ii><mn=~_><at=\\> <7f=i/ii><sq=\\||>
<dx=i/ii_><mn=~_><at=\\> <rvMg=iii><sq=\\||>

rvMg could have much lower pitch than I supposed (*rv* possibly too). Here, I set it to -iii but it could well be ii regularly.

I have called the praise-worthy LORD I have been saved from my enemies

2S 22:5
Ps 18:5

(<mr=ii../i>)<7f=i/ii><at=\\> <mr=ii../i><at=\\> <mr=ii../i><7f=i/ii><sq=\\||>
<7f=i/ii><mn=~_><sq=\\||>

Please note that *at* can go up as well as down.

The cords of death entangled me the torrents of Belial overwhelmed me

2S 22:6
Ps 18:6

<mr=ii../i><7f=i/ii><at=\\> <mn=~_><mn=~_><at=\\> <mr=ii../i><sq=\\||>
<rv=iii><mn=~_><sq=\\||>

Here, the 3'b appears as less refined (provided I get *mn* well).

Ropes of Sheol encircled me the snares of death trapped me

2S 22:7
Ps 18:7

<p\$=iii/iv><mn=~_><zq=/||> <7f=i/ii><at=\\> <mh=ii/iii><p\$=iii/iv><zq> <7f=i/ii><sq>
<mhLg=ii/iii><mn=~_><cn=..iii/iv> <gl=ii>(<olJr=/iv\\ii>) <mn><mn><at> <rv><mhLg>(<il=-iv>)<sq>

For less definite pitches left out to gain space refer to p:98.

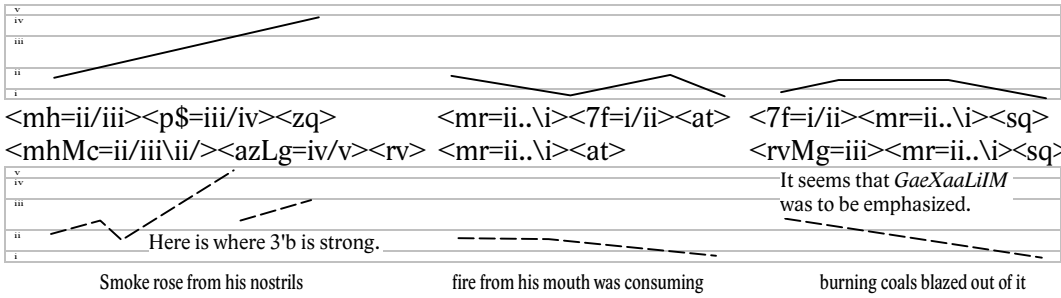
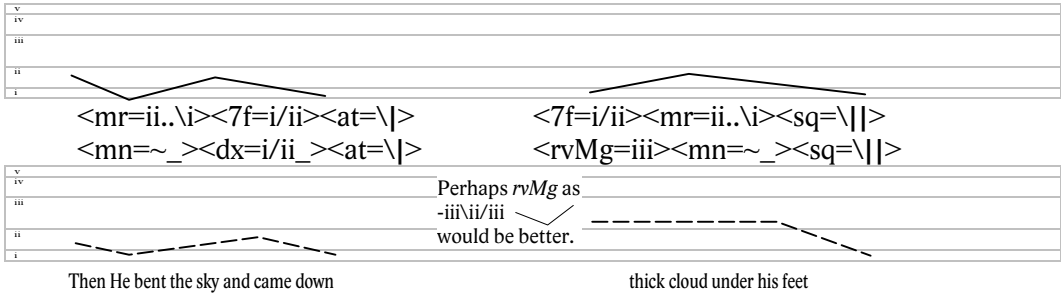
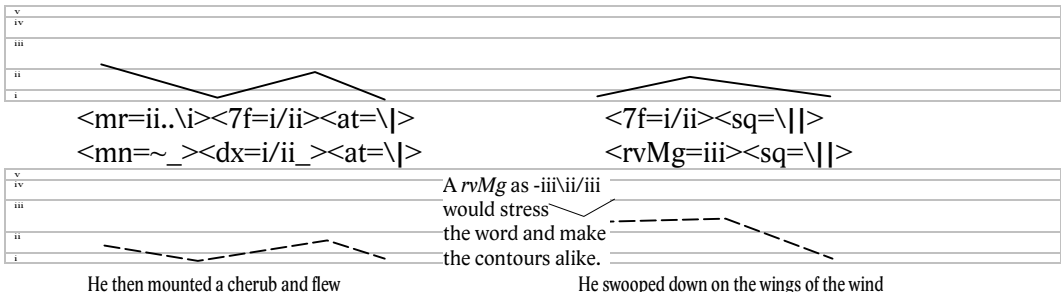
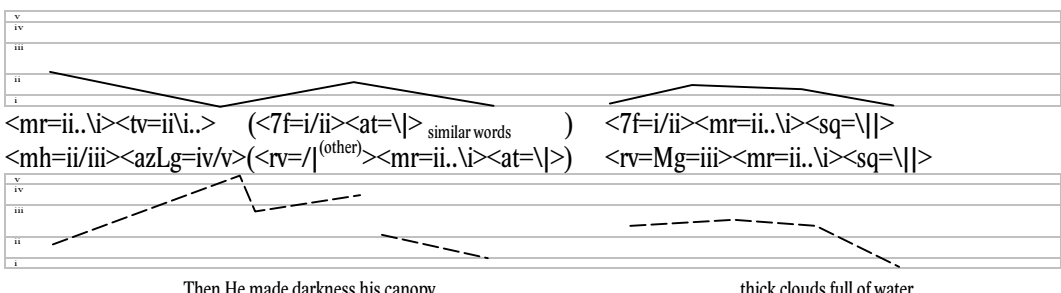
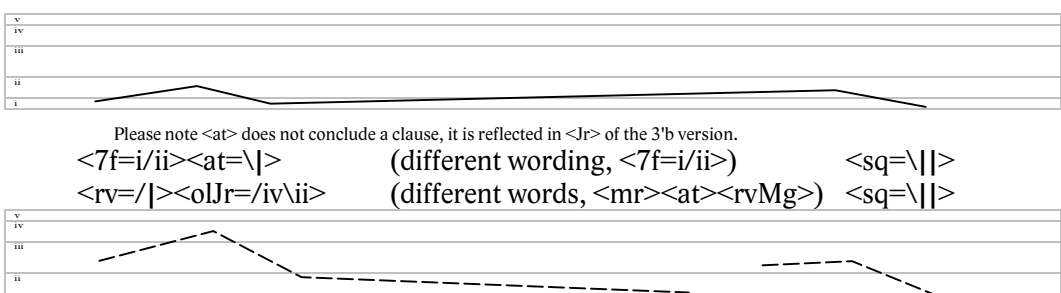
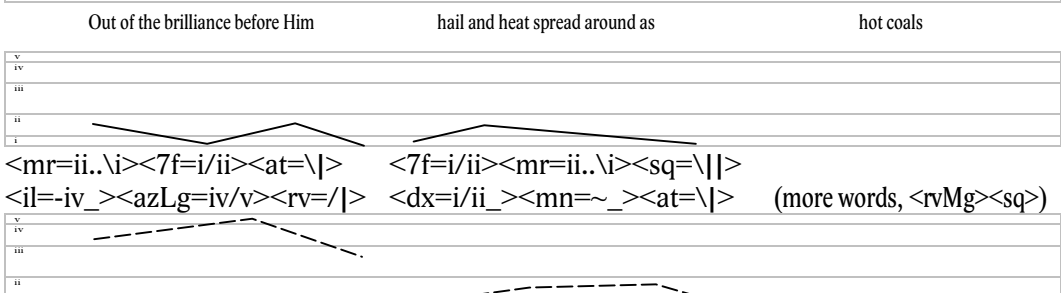
In distress I called the LORD I cried out to my God He heard my voice in his temple my cry reached his ears

2S 22:8
Ps 18:8

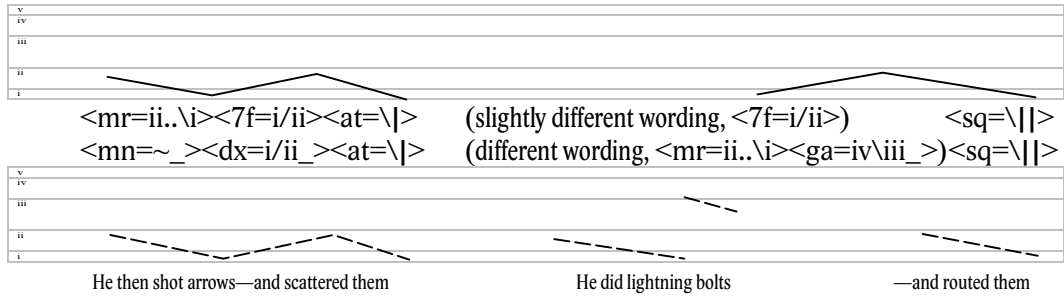
<mh=ii/iii><p\$=iii/iv><zq> <mr=ii..i><7f=i/ii><at> <7f=i/ii><mr=ii..i><sq>
<il=-iv_><azLg=iv/v><rv=/|> (<mn><mn>)<at> <rvMg=iii><mr=ii..i><sq>

Is *rvMg* in fact a lowered version of a *rv*-phrasal?

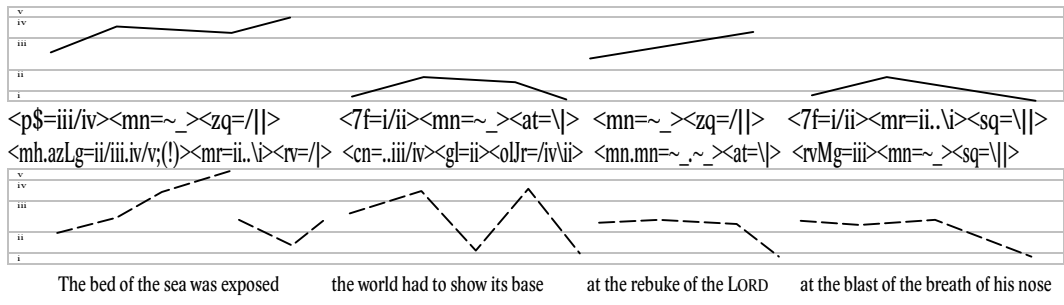
Then the earth trembled and quaked the skyline foundations shook it trembled as He was angry

2S 22:9 Ps 18:9	 <p> $\langle \text{mh}=\text{ii}/\text{iii} \rangle \langle \text{p}\\$=\text{iii}/\text{iv} \rangle \langle \text{zq} \rangle$ $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at} \rangle$ $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq} \rangle$ $\langle \text{mhMc}=\text{ii}/\text{iii}\backslash\text{ii}/ \rangle \langle \text{azLg}=\text{iv}/\text{v} \rangle \langle \text{rv} \rangle$ $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{at} \rangle$ $\langle \text{rvMg}=\text{iii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq} \rangle$ </p> <p>Here is where 3'b is strong.</p> <p>Smoke rose from his nostrils fire from his mouth was consuming burning coals blazed out of it</p> <p><i>It seems that GaeXaaLiIM was to be emphasized.</i></p>
2S 22:10 Ps 18:10	 <p> $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq}=\backslash \backslash \rangle$ $\langle \text{mn}=\sim_ \rangle \langle \text{dx}=\text{i}/\text{ii}_ \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{rvMg}=\text{iii} \rangle \langle \text{mn}=\sim_ \rangle \langle \text{sq}=\backslash \backslash \rangle$ </p> <p>Perhaps <i>rvMg</i> as -iii\ii/iii would be better.</p> <p>Then He bent the sky and came down thick cloud under his feet</p>
2S 22:11 Ps 18:11	 <p> $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{sq}=\backslash \backslash \rangle$ $\langle \text{mn}=\sim_ \rangle \langle \text{dx}=\text{i}/\text{ii}_ \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{rvMg}=\text{iii} \rangle \langle \text{sq}=\backslash \backslash \rangle$ </p> <p>A <i>rvMg</i> as -iii\ii/iii would stress the word and make the contours alike.</p> <p>He then mounted a cherub and flew He swooped down on the wings of the wind</p>
2S 22:12 Ps 18:12	 <p> $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{tv}=\text{ii}\text{i}..\text{i} \rangle$ ($\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at}=\backslash \rangle$ similar words) $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq}=\backslash \backslash \rangle$ $\langle \text{mh}=\text{ii}/\text{iii} \rangle \langle \text{azLg}=\text{iv}/\text{v} \rangle \langle \text{rv}=\text{/} \rangle$ ^(other) $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{rvMg}=\text{iii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq}=\backslash \backslash \rangle$ </p> <p>Then He made darkness his canopy thick clouds full of water</p>
2S 22:13 Ps 18:13	 <p>Please note $\langle \text{at} \rangle$ does not conclude a clause, it is reflected in $\langle \text{Jr} \rangle$ of the 3'b version.</p> <p> $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at}=\backslash \rangle$ (different wording, $\langle \text{7f}=\text{i}/\text{ii} \rangle$) $\langle \text{sq}=\backslash \backslash \rangle$ $\langle \text{rv}=\text{/} \rangle \langle \text{oLJr}=\text{/iv}\text{i} \rangle$ (different words, $\langle \text{mr} \rangle \langle \text{at} \rangle \langle \text{rvMg} \rangle$) $\langle \text{sq}=\backslash \backslash \rangle$ </p> <p>Out of the brilliance before Him hail and heat spread around as hot coals</p>
2S 22:14 Ps 18:14	 <p> $\langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{at}=\backslash \rangle$ $\langle \text{7f}=\text{i}/\text{ii} \rangle \langle \text{mr}=\text{ii}..\text{i} \rangle \langle \text{sq}=\backslash \backslash \rangle$ $\langle \text{il}=\text{-iv}_ \rangle \langle \text{azLg}=\text{iv}/\text{v} \rangle \langle \text{rv}=\text{/} \rangle$ $\langle \text{dx}=\text{i}/\text{ii}_ \rangle \langle \text{mn}=\sim_ \rangle \langle \text{at}=\backslash \rangle$ (more words, $\langle \text{rvMg} \rangle \langle \text{sq} \rangle$) </p> <p>The LORD thundered from heaven the Most High sent forth his voice</p>

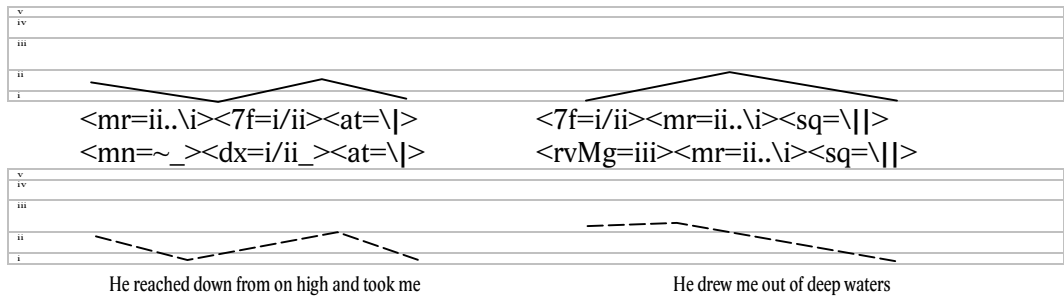
2S 22:15
Ps 18:15



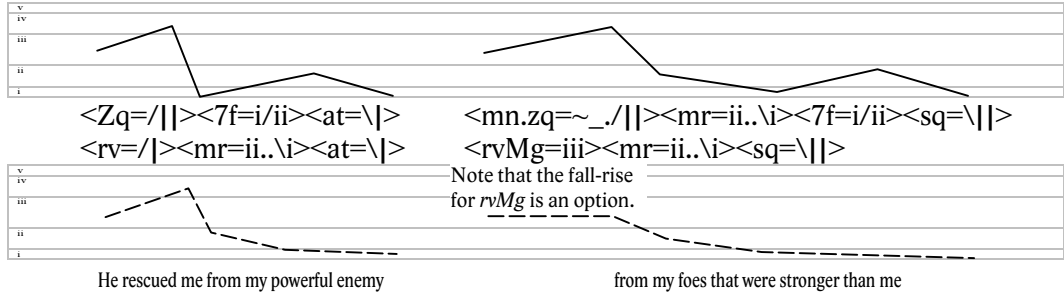
2S 22:16
Ps 18:16



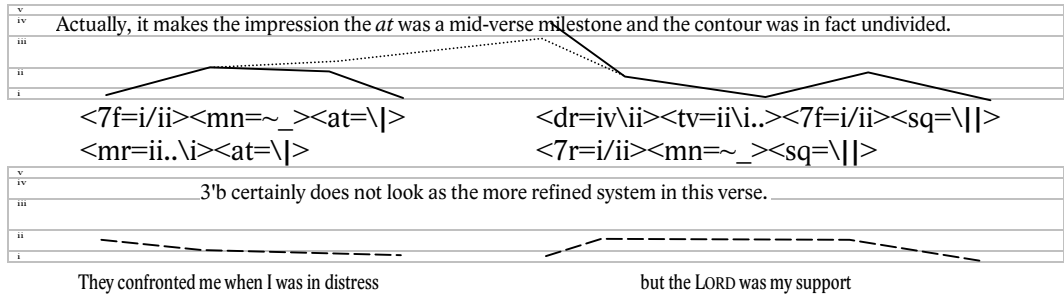
2S 22:17
Ps 18:17



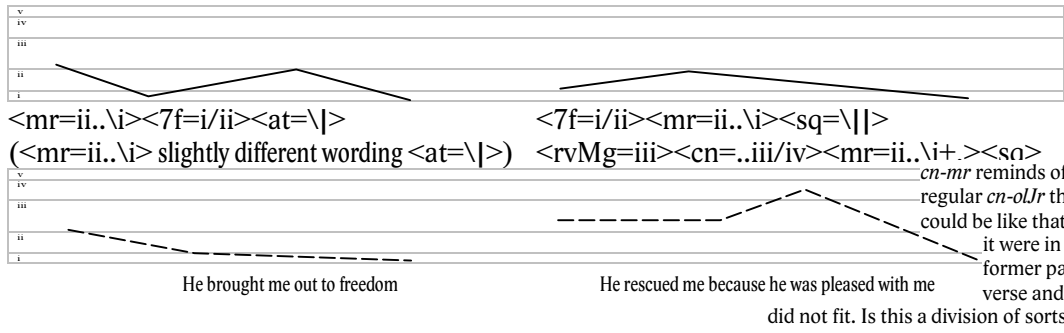
2S 22:18
Ps 18:18



2S 22:19
Ps 18:19



2S 22:20
Ps 18:20



2S 22:21
Ps 18:21

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle mr=ii..i \rangle \langle sq=\backslash || \rangle$
 $\langle mn=\sim_ \rangle \langle mn=\sim_ \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rvMg=iii \rangle \langle mr=ii..i \rangle \langle sq=\backslash || \rangle$

Apparently, I do not understand *mn* well as this contour must have had a shape, and shows none. — *mr-rvMg* is a vexing issue. Here, it seems to make sense.

The Lord has dealt with me according to my merit according to the cleannes of my hands He has rewarded me

2S 22:22
Ps 18:22

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle mn=\sim_ \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash || \rangle$
 $\langle dx=i/ii_ \rangle \langle mn=\sim_ \rangle \langle at=\backslash \rangle$ $\langle rvMg\neq iii = +iii \backslash -iii / iii \rangle \langle sq=\backslash || \rangle$

The fall-rise *rvMg* version is better here.

For I have kept the ways of the LORD and have not wickedly departed from my God.

2S 22:23
Ps 18:23

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle 7f=i/ii \rangle \langle mr=ii..i \rangle \langle sq=\backslash || \rangle$
 $\langle mn=\sim_ \rangle \langle mn=\sim_ \rangle \langle at=\backslash \rangle$ $\langle rvMg=iii \rangle \langle mr=ii..i \rangle \langle sq=\backslash || \rangle$

All his laws are before me and I have not departed from his rules

2S 22:24
Ps 18:24

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle 7f=i/ii \rangle \langle sq=\backslash || \rangle$
 $(\langle mn=\sim_ \rangle) \langle mn=\sim_ \rangle (\langle at=\backslash \rangle)$ $(\langle rvMg=iii \rangle) \langle sq=\backslash || \rangle$

I have been blameless for Him and kept myself from iniquity

2S 22:25
Ps 18:25

The 21'b version of the verse seems more diversified here.

$\langle dr=iv \backslash ii \rangle \langle tv=ii \backslash i.. \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle 7f=i/ii \rangle \langle mr=ii..i \rangle \langle sq=\backslash || \rangle$
 $\langle mn=\sim_ \rangle \langle mn=\sim_ \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rv= / | Mg=iii \rangle$ $\langle mn=\sim_ \rangle \langle sq=\backslash || \rangle$

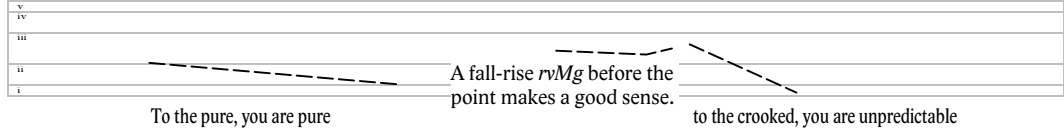
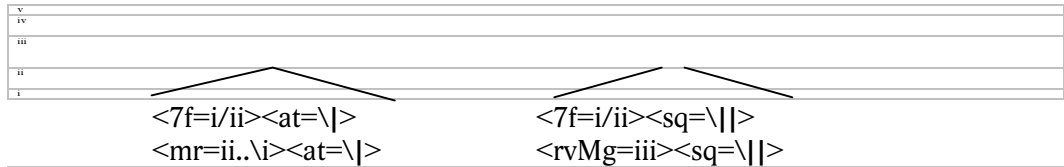
And the LORD has requited my merit because I have clean hands which He saw

2S 22:26
Ps 18:26

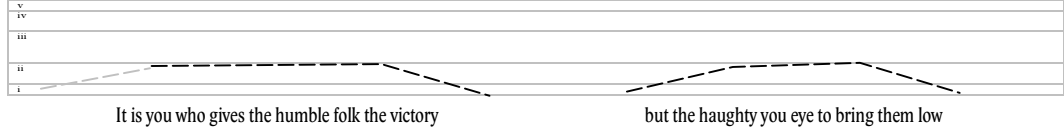
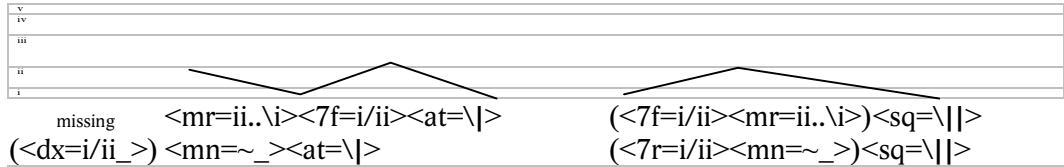
$\langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash || \rangle$
 $\langle mr=ii..i \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rvMg=iii \rangle \langle sq=\backslash || \rangle$

To the faithful, you are faithful to the man of integrity, you are consistent, too

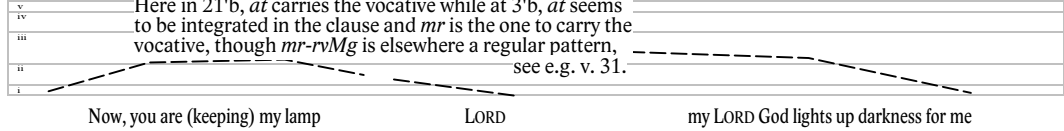
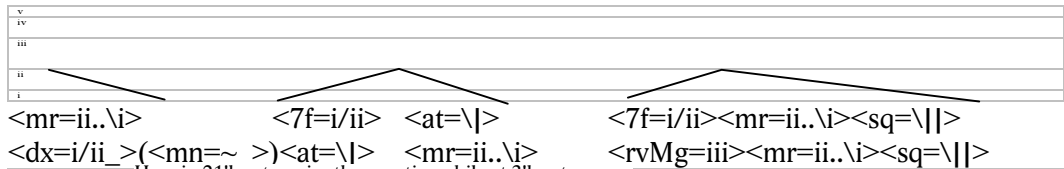
2S 22:27
Ps 18:27



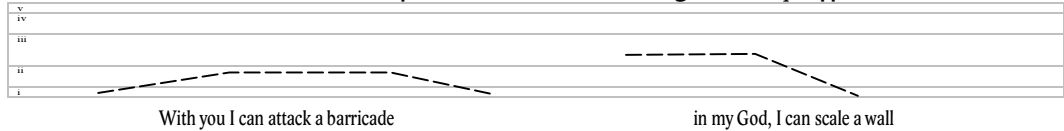
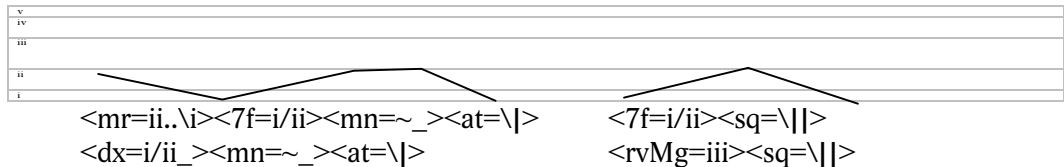
2S 22:28
Ps 18:28



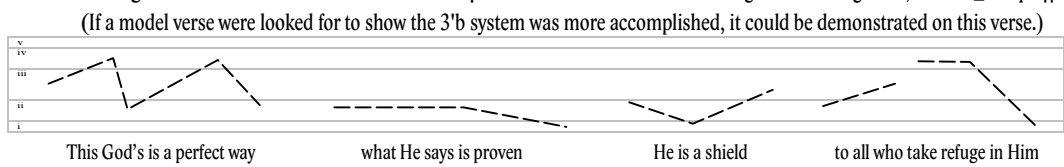
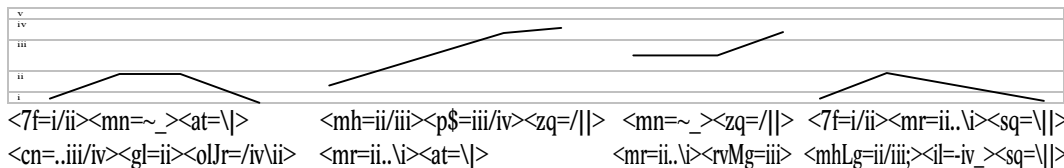
2S 22:29
Ps 18:29



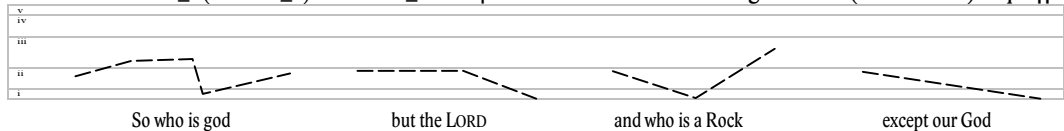
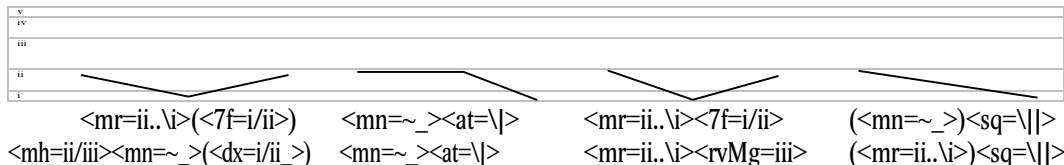
2S 22:30
Ps 18:30



2S 22:31
Ps 18:31



2S 22:32
Ps 18:32



2S 22:33
Ps 18:33

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle dx=i/ii \rangle \langle mn=\sim _ \rangle \langle at=\backslash \rangle$ $\langle 7r=i/ii \rangle \langle mn=\sim _ \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

This God embraces me with power and makes my way perfect

2S 22:34
Ps 18:34

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle mn=\sim _ \rangle \langle dx=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rvMg=iii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

He makes my legs like a deer's and let me stand where it is too high for me

2S 22:35
Ps 18:35

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle mn=\sim _ \rangle \langle dx=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rvMg=iii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

He trains my hands for battle my arms can bend a bow of bronze

2S 22:36
Ps 18:36

Note that *at* is at $\frac{1}{2}$ in 21'b, in 3'b it splits what *olJr* left.

$\langle _ 7f=i/ii \rangle \langle mn=\sim _ \rangle \langle at=\backslash \rangle$ $\langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle cn=\dots iii/iv \rangle \langle gl=ii \rangle \langle olJr=/iv \backslash ii \rangle$ $\langle mr=ii..i \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

You have given me a shield of your salvation your right hand sustains me your providence has made me great

2S 22:37
Ps 18:37

$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle mn=\sim _ \rangle \langle mn=\sim _ \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle rvMg=iii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

You have made my walk secure so my ankles do not turn

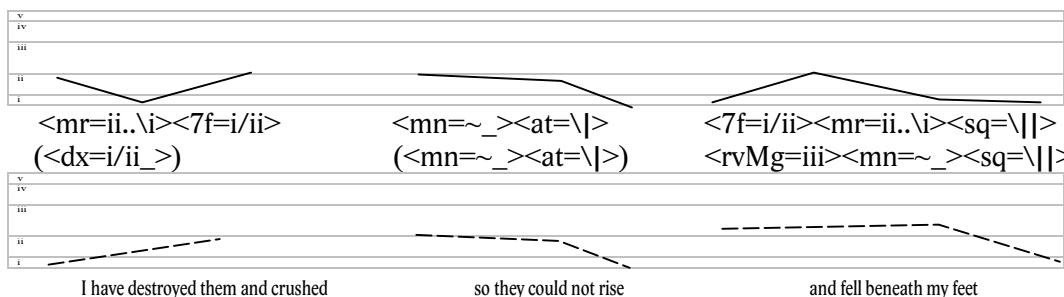
2S 22:38
Ps 18:38

Please note *W:LOO_ %aaShuUBh* has a special *rvMg*-type melodeme with no $\langle rv \rangle$.

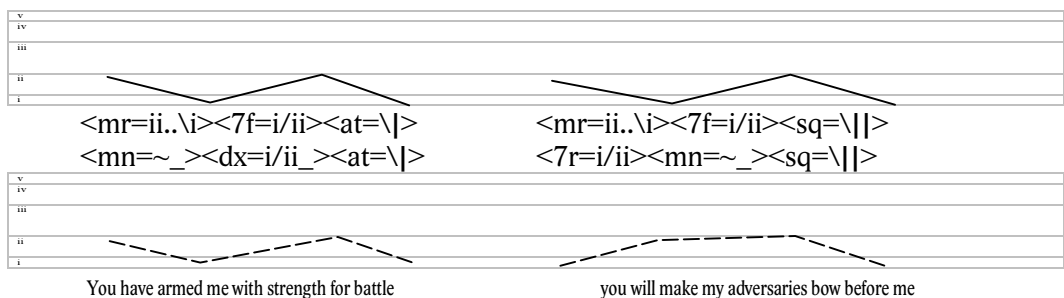
$\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle at=\backslash \rangle$ $\langle mr=ii..i \rangle \langle 7f=i/ii \rangle \langle sq=\backslash \rangle \langle \rangle \langle \rangle$
 $\langle mn=\sim _ \rangle \langle dx=i/ii \rangle \langle at=\backslash \rangle$ $\uparrow \langle ga=iv \backslash iii \rangle \downarrow \langle sq=\backslash \rangle \langle \rangle \langle \rangle$

I will pursue my enemies and wipe them out and will not turn back till they are destroyed

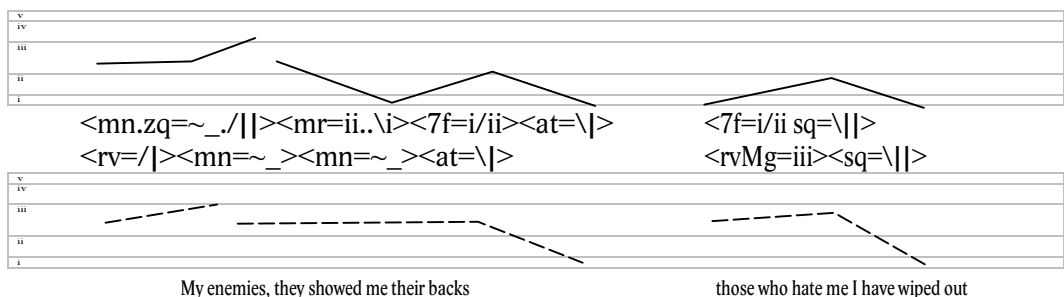
2S 22:39
Ps 18:39



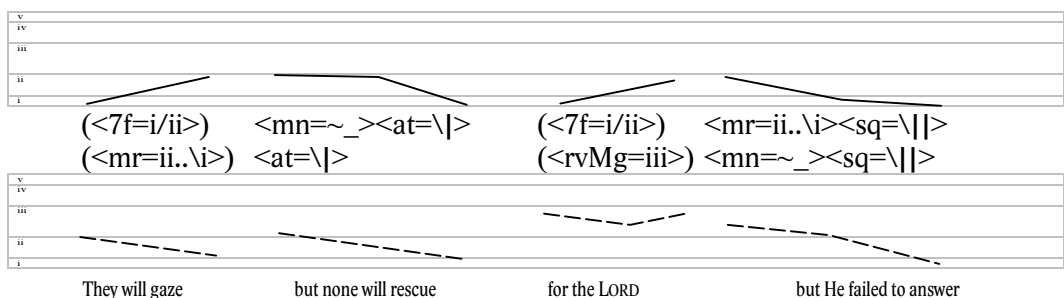
2S 22:40
Ps 18:40



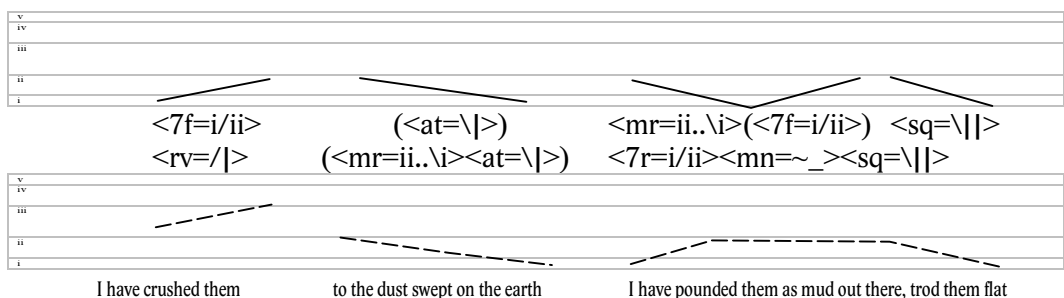
2S 22:41
Ps 18:41



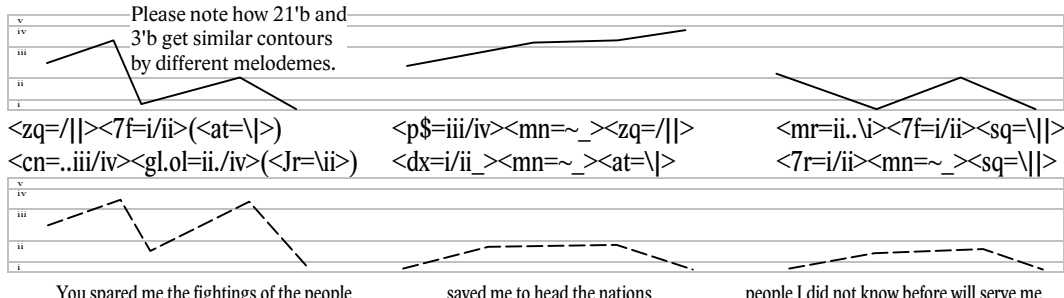
2S 22:42
Ps 18:42



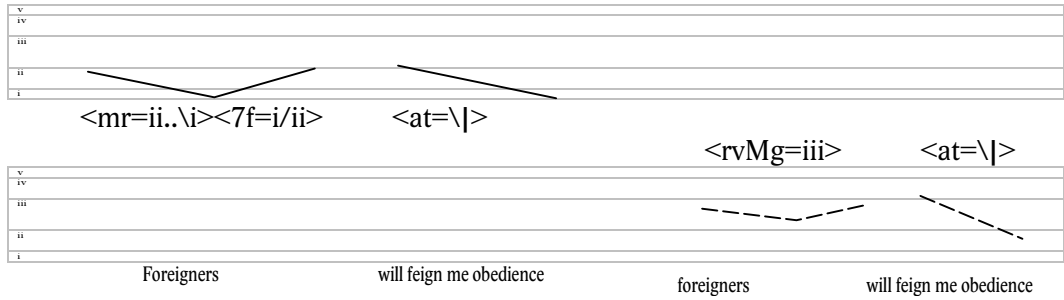
2S 22:43
Ps 18:43



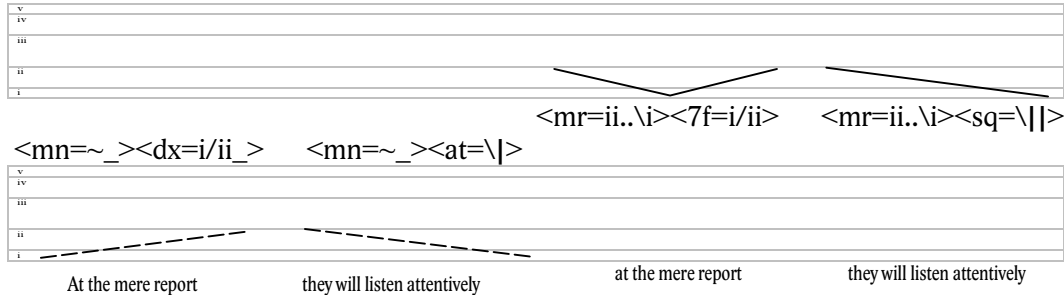
2S 22:44
Ps 18:44



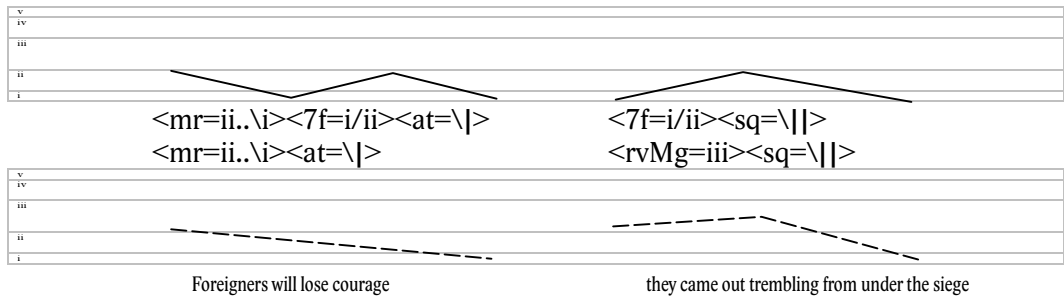
2S 22:45a
Ps 18:45b



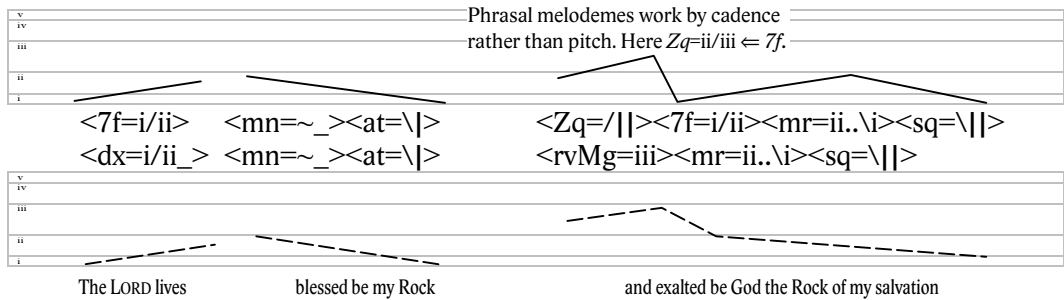
2S 22:45b
Ps 18:45a



2S 22:46
Ps 18:46

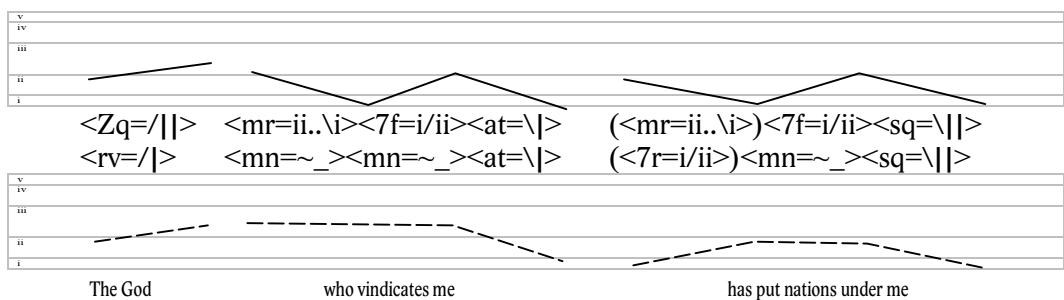


2S 22:47
Ps 18:47

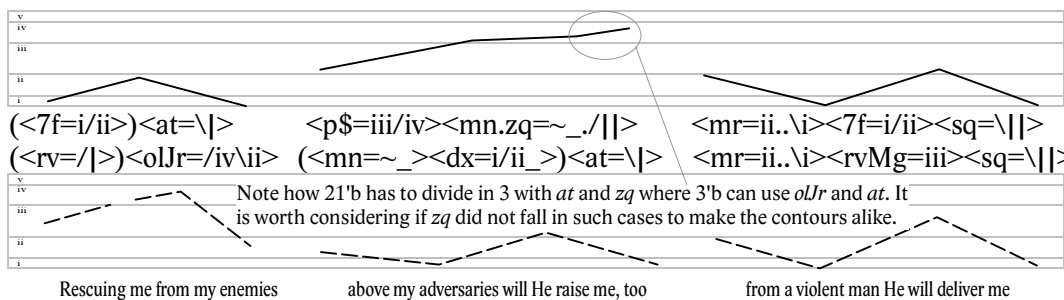


Phrasal melodemes work by cadence rather than pitch. Here $Zq=ii/iii \leftarrow 7f$.

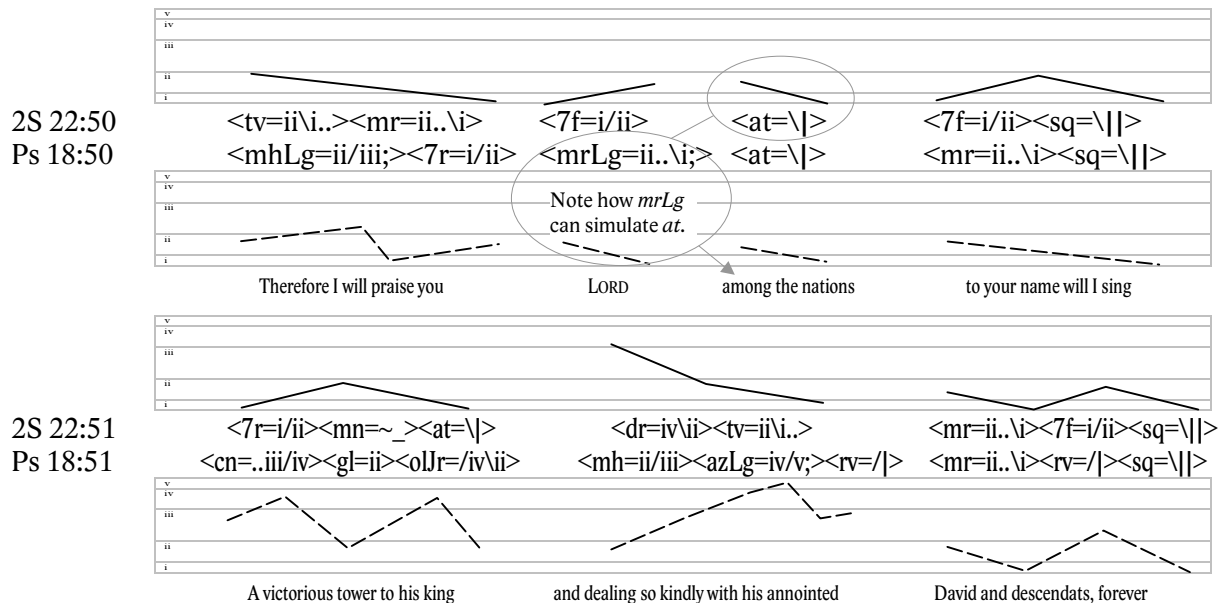
2S 22:48
Ps 18:48



2S 22:49
Ps 18:49



Note how 21'b has to divide in 3 with *at* and *zq* where 3'b can use *olJr* and *at*. It is worth considering if *zq* did not fall in such cases to make the contours alike.



More similarities between the contours can be seen than what would be expected from two completely independent marking systems, and less coincidences than syntactical parsing should generate in the passages with identical or grammatically close wording. *PMH I* found correspondences “in shapes and directions of melodeme symbols rather than exact identities of melodemes or classes assumedly of roughly comparable syntactical roles” and concluded: “(1) The two systems appear to be similar enough to warrant the opinion they are but two versions within a single system. (2) Similarities in shape that appear greater than might be coincidental suggest the forms of the symbols may be iconic” (p:229). The concept of iconicity was then extensively discussed.

The present revision of the comparison may confirm these preliminary conclusions as no serious breaks have been met which would be readily apparent and disqualify the prosodic hypothesis already at this stage. A couple of issues such as a flat contour of <rvMg>, unclear or possibly misled evaluation of <mn> (apparent e.g. in Ps 18:21 and 23), <mr><rvMg> connections hard to reconstruct (though in e.g. Ps 18:21 it seems to turn out well) have surfaced but appear to yield well to solutions within the prosodic hypothesis. An issue that would not be easily resolvable in that framework has also emerged here to a little extent: stereotype to flat contours that make an impression as if the marks were assigned mechanically without regard to the content. If it were met throughout, it might betray that any prosodic interpretation is a fictitious construct to be abandoned. That would, however, strengthen only positions of adherents of formal grammars dividing verses with little regard to their content. But a slightly more developed syntactic marking could be enough to tackle the same problem. Assigning marks in a hardly informative, monotonous manner confirms syntax as little as prosody (wherever the same syntactic structures are not repeated). Nonetheless, a strong point in prosodic interpretation is in that stereotype repetitions of intonation patterns occur in natural speech, too. I have observed infrequent but not rare spots in TN[°]K where a few melodeme patterns repeat across a few verses before the distribution turns more varied again. A similar phenomenon can be met in the previous displays. At times, contours look alike and seem quite formal. Only few verses are concerned. Still, some contours are frequent and some sporadic but this is nothing unusual in prosody of speech. A simple up-down wave can be considered as a sort of a fundamental pattern, so its commonplace occurrence should not be surprising.

Somewhat surprisingly, however, the 3^b system seems to fail the expectations for a more developed system at quite a few places. Its flexibility and differentiation, well seen in verses such as Ps 18:31, appear unused at quite a few places where 21^b contours emerge as the more varied or sensitive. A thorough comparison of the two systems, however, demands to confront more texts and, most importantly, consider more features of text than it was possible in the present study.

The key finding then (somewhat expected thanks to *PMH I* probing) is the fact the ‘accents’ can be connected in prosody-like melodeme contours without too frequent linking difficulties. Where linking is hard (such as in the fairly usual sequence <mr><rvMg>), it can be explained by uncertainty in the contour of <rvMg>. Difficulties of this kind can easily turn up in support of the 3^b system as soon as the quest for adequate melodeme values is joined by rhythm, rate and emphasis concerns. The finding that melodemes link can itself encourage this direction of research.

B2e More Opportunities for Application

The idea that melodemes were meant originally as speech prosody markers rather than neumes of sorts for singing, can be developed and researched in many applications. While it was not the purpose of the present dissertation to dwell on this, at least some of the paths should be explored to show in practice, rather than put up with mere hinting. One of the options is to examine the text to find if (at all) traits can be discovered capable to distinguish genres (useful if e.g. poetry could be told apart from prose¹⁸³), times of origin, backgrounds, writers etc. A program developed by the author for the project was made to check a few general properties throughout the book of Job seeing if distinct characteristics can be assigned to different participants in this epic. The program (*kolikA.pl*), while stimulated by a particular research question concerning the book of Job, has been, however, designed generally enough to be able to launch for other similar needs of counting, editing and statistically processing defined units of text.

It is easy then (once the program has been debugged and tested) to launch it for the 2Sam. 22 and Ps 18 passages and calculate the mean pitch 1.71 for 2Sam22 and 2.30 for Ps18; their standard deviation as 0.91 and 1.15, respectively; also the coefficients of variation 53.16 % for one, 49.97 % for the other.

A vital question, however, is how to understand the measures and interpret the figures. So before we actually refer to these (and other) figures, that sideline research needs to be introduced. It should be understood the main concern of the prosody hypothesis has been prosody (including all that relates to it linguistically as well as in music). Calculations are admissible insofar it can be reasonably assumed they refer to reality of Scripture delivery, be it descriptive or prescriptive. It is the interpretation of the message, not the message itself. It can tell nothing of literary sources, styles, centuries etc. unless it was expected of the lector to read it that way. Specific relationships of small sets of marks at a spot on the pitch scale is of more importance than general aggregations over large stretches of text. While it is easy to obtain such figures for the whole TN[”]K (2.5, 1.30 and 51.72 % by the way), their value is minimal.¹⁸⁴

The TN[”]K figures have been calculated to have a reference to compare. What would be more useful is a set of reference values for delivery genres (where different modes of reading can be assumed). But to get such aggregations, the genres would have to be demarcated and fed as parameters to the program, which is a task beyond this stage of research. Still, scanning over B2d suggests Ps18 seems lower in pitch. If it is indeed so and not just an impression, can be calculated, and this is where *kolikA.pl* can help. (Actually, the impression was wrong. Ps 18 averages 2.30 high and 2Sam22 is 1.71 in pitch, quite low.)

A word of caution should be mentioned first, prior to delving into particulars. It concerns Job but it is of a general impact. It is no statistical processing of **speech recordings**. No Job, not even a narrator are speaking. Who can be ‘listened to’ is an idealized synagogal reader,¹⁸⁵ and the melodemes do not even represent a recording of his speech but a prescribed guide to make sure the lector’s manner of speaking was not irrespectably monotonous nor improperly disoriented. What the prescript suggested was in all probability not a theatrical performance (which, too often, would miss the purpose). The prescript was possibly to only ensure for the lector not to reel his text off or mumble away but deliver it distinctly and vividly. For such a purpose, it is vital to use natural prosody, adequately varied and in accord with the meaning. These are also attributes of actors’ performance, but still so much embodied in language that a narrator that is not an actor would use them as the same matter-of-course as a professional actor. Only public readers not narrating from memory are in danger of not reproducing prosody that is not put down in writing. Melodemes were attached to prevent it. They were not attached when the text had been composed but many centuries after that. The language was certain to had undergone changes, a cultural milieu was also different. So the melodemes represent a differently framed interpretation. Still, phonetic methods can be used on them and expectations of results can be similar, though limited.

¹⁸³ Personally, I am not convinced a clear-cut division can ever be made. Poetry is definable by how many poetic devices have been employed (formally) or how much the listener’s mind is made to co-operate with the poet. It follows that being poetic is a gradient, with borders, if any, on the cline being cultural. Still, a prosodic analysis as suggested here (also a gradation) may be useful, given that Biblical poetry is multiparametric to discern, anyway.

¹⁸⁴ Actually, they are only approximate (but close) as the program so far does not include 390 cases of infrequent combinations which the original Job-tailored program did not need. Given all the units are 260,512, the missing cases are 0.15 per cent so the resulting figures are not affected by their having been skipped so far.

¹⁸⁵ Job is read in public in some Sephardic Jewry. And certainly, it is studied in communities throughout, which is a traditional mode, so while the note is meant generally on the books of the TN[”]K, it does apply to Job, too.

Then, a brief comment on used statistical measures is to be inserted prior to presenting particular data. **Arithmetic mean** (μ) is a well understood measure of central tendency. The present application employs it to see general ranks of pitch values in the i-ii-iii-iv-v levels for each delimited portion of text. The mean, however, is unable to reveal fluctuation of values (if e.g. intonational, then sizes of possible pitch undulations) around the mean in a portion of text. (Each portion is treated as a separate unit.)

Consequently, I also calculate **standard deviation** (σ) which quantifies this amount of dispersion across the set of data in the units of measurement, i.e., here, in pitch levels i-v just as the mean does. It tells then how many such units a majority of values deviates from the mean. (More precisely: By how many units the quadratic mean of all deviations differs from the arithmetic mean of all values.) More fluctuation entails for the mean to be less informative, though how much, it depends on application.

Coefficient of variation (CV) is the ratio of the two measures, the standard deviation and the mean, so it directly evaluates the informative value of the mean. Similarly to σ it tells how much the most of values differ from the mean, though not in how many units of measurement as they can be different, but in what proportion (σ/μ). If $\sigma < \mu$ and μ is positive, the proportion can be interpreted as per cents, which intuitively shows if the mean has a small or large standard deviation (appropriate for symbolic units such as i-v pitch).¹⁸⁶ A well normalized result shows a position between the extremes of CV=0 % when all units of observation are mean with no exception, and CV=100 % when a theoretical mean is only made by extreme units on both sides. A CV is in fact a measure of concentration around its mean, so an indicator of homogeneity or variability of data in per cents of σ in μ . Due to it, a CV reaching a few dozen per cents casts the validity of mean in doubt (i.e. a commonplace value departs from a theoretical mean in practice by *nm* %). A coefficient over 50 % betrays most of the values lie closer to an extreme than the mean, which is rarely desirable, hence the mean of so different values hardly shares a common characteristic of the whole as it is too diverse. Such strict criteria, however, do not apply so much in prosodic values and, generally, anywhere variability including extremes is expected or even essential (notes in a score, a ball on a pitch). Drift in pitch or positions in a field around 50 % do not imply the intonation or the play consist of heterogenous values; only that it is diverse or dramatic, and the more so the more it exceeds 50 %. Rising above a limit would possibly make it uncomfortable. Reaching even higher would make it stop feeling natural. (Then it might not be intonation at all, or full of errors. Soccer could look as a strange foot tennis, line to line.) So, where a divide between a “good” and “bad” usage of mean sits and also how steep is the transition from informative to uninformative mean is empirical and has to be applied knowledgeably.

Still, applying CV to pitch values is not problem-free. The reason, however, is not it revolves around 50 per cent, but the nature of the phonological values that have not been obtained by measuring.

(a) Primarily, it is the issue of how to interpret the null value in the bands. A reasonable null need not be necessarily a property of an existing object (i.e. an object lacking the observed property) since the object itself can be null i.e. non-existent. A reasonable null is important so as for ratios between values to make sense. The question then is: Is the =iv pitch twice as high as the =ii pitch? If i-v is considered as an increase measure over a fundamental pitch, then it is so. If they are taken as pitch degrees, then it is not. A null increase makes sense and it can exist; it is a fundamental pitch of a lector (different with each one). The null pitch grade is not an absence of pitch; the pitch is there, only outside of the interval we observe. Computing CV is meaningful in the former concept, meaningless in the latter one.

(b) Additionally, CV is very sensitive to small fluctuations of mean, consequently less reliable with means that are close to zero (i.e. in low numbers), which is exactly the case of the 1-to-5 interval of i-v.

For these reasons, I consider CV a supplementary, tentative measure. Still, so as to provide a base for possible further calculations, some other dimensionless measure (as a counterpart of a dimensional standard deviation) would be needed to find. As long as means are calculated, however, it is assumed a zero in the scale of i-v (which is 1-5) has a meaning; hence it gives a meaning to CV.

Assuming that, in a later TTS experimental stage, the scale would be related to measurable tones which are real physical frequencies, also the phonological i-v scale (1-9 in Glossa symbolic language) would very probably lose its interval level of measurement as soon as it shows mapping increase to frequency is not calculable. In spite of that, the scale would keep its phonological value if the gradation is proportionate psychologically. Practical usability is a criterion and a comparable relative measure would be useful in any case.

¹⁸⁶ If $\sigma > \mu$, $\sigma/\mu > 1$ which multiplied by 100 betrays this is no %, so the incoherent data better to divide in classes.

Development II—Clearly above the average, with the highest peak (above Eliphaz in I). Fluctuations are also stronger ($\sigma = 1.19$ in units, though not in per cents (CV); still, Job is the highest in both the two measures and the two values (as also $\mu\mu = 2.22$ suggests) and gets above the other participants in μ and σ). This is a salient peak of the speeches of Job. At least emotionally, the poem seems to culminate.

Eliphaz mean: 2.02

As the speeches develop, the level of pitch distinctly decreases and fluctuation also gets smaller.

Bildad mean: 2.08

In development, inverse to Eliphaz. It rises in pitch, fluctuation seems also growing (reflected in pitch units though not in per cents, which may be due to the much shorter third speech of Bildad).

Zophar mean: 2.1

A distinct type from the other two; balanced in both pitch and variability. His values get close to the ones of Wisdom which was to follow after Zophar remained silent.

Wisdom mean: 2.0

The song represents an intermediate type among other participants both in pitch and distribution.

Elihu mean: 2.06

It appears vacillating both in the mean of pitch values and their unfolding.

God w. mean: 1.96¹⁸⁷

Development is negligible if any. Variability seems to increase only slightly in the last speech, $\sigma = 1.02$, 1.04; 51,52, 52,42 %. It is noteworthy, however, that God ranks quite low in pitch among the participants including the Narrator, yet He shows no narrowed variability (i.e. comparable in stress and emotions).

Narrator w. mean: 2.5 w. $q\mu\sigma$ (i.e. RMS average): 1.17 w._h μ CV: 1.3¹⁸⁸

Markedly high pitch in participants, especially if 26 stereotype introductory verses are filtered out. (^{if not})

In development, the Prologue and Epilogue fluctuate in pitch units. If σ is compared to CV [%], that variability does not seem so conspicuous. The values are useful to compare direct speeches against it.

Discussion: The statistic analysis even if rudimentary suggests it is so far substantiated to suppose melodemes could be older tradition-based early mediaeval transcription of an adequately expressive speaking interpretation of an ancient text. The initial pitch values assigned to melodemes to be verified show each participant as a specific type of utterance, distinct from other participants and narratives.

Further research should take semantics more into account, and consider to cover more parameters of speech. Also, more canonical books should be included as they can confirm or question the justification of the differences found in Job if those that seemed significant are indeed so, or if, on the other hand, distinctions should be refined to interpret differences so far overlooked as supposedly insignificant.

B2e2 Do MsH Melodemes Differentiate Genres?

While there could be reasons for recommended reading style to keep literary speakers distinct (such as for listeners to keep track, or to distinguish different content of what is said also by voice), it is harder to think of reasons for distinct styles to different genres, though this also is at least imaginable, hence it deserves a probe. Examples of genre switching within a literary unit could be found more in TN"K. One of them is the Book of Jonah, a four-chapter composition consisting of a 3-chapter-size narration in which a chapter of verse has been inserted at a point of a crucial Jonah's experience that brought him around from flying to complying as more reasonable to do when it comes to God. If messages were styled differently in voice, this short poetry at a key point amid a short narration is a good candidate.

Generalized Pitch Values in the Book of Jonah				
chap.	1	2	3	4
	Jon 1:1—2:2	Jon 2:3—10	Jon 2:11—4:11	
genre	narrative	poetry	narrative	
μ	2.59	2.18	2.50	
σ	1.29	1.17	1.28	
CV	49.82	53.55	51.39	

¹⁸⁷ They are really two speeches, a weighted mean is needed, $(1.97*70)+(1.33)+(1.98*52)$. 1.76 would be wrong.

¹⁸⁸ A weighted quadratic mean for σ and a weighted harmonic mean for CV have been used. For details see the CD.

	poetry	mean:	2.18
The spread σ 1.17 is narrower in higher percentage (53.55 %) than the narrated portion of the story.			
	narrative	w. mean:	2.55
(weighted by 236 and 274 verses, respectively)			
The spread σ 1.28 is wider than the inserted poetry (in 50.66 %). What values are available to compare?			
	The TN"K pitch mean is	2.50	(σ 1.30, CV 51.72 %)
	2Sam. 22	1.71	(σ 0.91, CV 53.16 %)
	Psalm 18	2.30	(σ 1.15, CV 49.97 %) ¹⁸⁹

Discussion: The statistic analysis has shown a slightly lower mean pitch of the melodemes in the poetic text as compared with the narrative text inside the same literary unit, but the difference is small (e.g. it appears somewhat smaller than the difference between narratives and poetic speeches in Job). Also, the span of the zone where about half of the melodemes is found (please note small significance of this measure) is comparable (lightly narrower than in poetry). The differences at least distribute expectedly when compared to the whole of TN"K: narratives similarly (μ Jonah 2.55, TN"K 2.50; σ Jonah 1.28, TN"K 1.30), the poetry works out lower (2.18) and narrower (1.17). These characteristics, however, are not shared by aggregations for 2Sam. 22 and Ps 18 which are found close to the opposite extremes (in spite they are poetic texts though in two marking systems). So until more analyses enhance differences, the measures of position and of variance (here mostly broader than in Job) cannot be considered as indicative to tell poetry and prose apart.

This is in line with the non-dichotomic concept taking the distinction between poetry and prose as gradual and movable as it derives from the number and manner of usage of poetic devices, which, to compound the matter, signalled, in the local culture of the day, the text was developed more carefully and the message was of high importance (not unlike the effect of scholarly texts' markers today), hence they were not so strongly associated with the two genres' dichotomy as in our culture. Specifically in Jonah, non-melodematic means of poetization were used quite conspicuously also in narrative portions so the distinction between prose and poetry is hard to capture with the tools available in *PMH* so far.¹⁹⁰

Given that, it could be hardly expected from a synagoge lector or a TN"K teacher to distinguish the two genres (or other ones, for that matter) with his manner of reading out. One could think of it only if a text *was declared* as poetry or prose (say, for a purpose such as to sing verse and narrate prose). Then, two distinct modes of presentation could well be imaginable. The reason or an origin could be the Book of Job where the 21'b prologue and epilogue might have possibly been read out while the core of the epics in 3'b could have been chanted or sung. But this would be an idle speculation. The data so far do not appear to give a hint concerning that distinction between the two marking systems.¹⁹¹

For details of the analyses, description of data, extensive specification of methods used and concepts accepted, please refer to the CD enclosed to this dissertation. The texts and data have not been included in the printed copy as the technical nature and the size (it all adds up to hundreds of pages excluding the TN"K data) would unnecessarily distract from the topic of this portion of the *PMH* project.

¹⁸⁹ There is no simple way of averaging the Job study data (such as taking a mean of variances to extract root into a general standard deviation), not even in related passages since the portions do not have the same mean. Also the variances of the means would have to be obtained. For the same reason, a coefficient of variation cannot be got, too. The portions are not equal in length, so the calculation had to be weighted prior to square-rooting. So by making the calculation more precise, we would get to verses and phrases, which is precise but denies aggregation.

¹⁹⁰ Typical of Jonah are recurring expressions (such as GaDoOL) throughout the composition. Beside parallelism (not so much in Jonah, though e.g. 2:6), alliteration (cf 2:3 Sh, 7, T, M) and word pairs (cf next), typical of poetic style in TN"K, and also in Jonah, are verbs contrasting by opposite tenses; it is somewhat archaic or archaizing (2:4 waTTaShLiikhee^Niil "you threw me" vs J:SoOBh:Bhee^Niil "will wrap around me" and 2:6 %:aPhaaPhuU^Niil "encompassed me" vs J:SoOBh:Bhee^Niil "will wrap around me"). None of these or other poetic devices, however, demarcated poetry within a text reliably or was co-extensive with it. Being poetic is 'how much', not 'whether'.

¹⁹¹ I do not even feel qualified to examine if one of the systems has more musical qualities than the other, so this line of research could not be followed in this *PMH* project, anyway.

Conclusion

C1 Discussion

The purpose of this dissertation was to find out if it is justified and defensible to hold and continue researching a hypothesis concerning the ‘accents’ of the Tiberian marking of Masoretic Hebrew. It was a very conservative Early Mediæval variant of the language used especially to read out the TaNaKh in public and to study. Variants of the language used different marking systems, Tiberian was one, the most developed and influential. While some of the marks concern vowels and consonants, several dozens of them concern something else with obvious inherent logic. The hypothesis is they prescribed speech prosody; their musical development was secondary while syntax is an implication of prosody.

To test this assumption, several steps have been made. First, most of the TaNaKh was read through with attention focused on the ‘accent’ marks, to see what was usual and rare in the marking, to observe the interplay of marks with the meaning and, while reading, to gain a substantial body of excerpts.

Soon it was apparent that printed editions of the TaNaKh can offer only normalized view of the text. That is, however, not always adequate for capturing all the details that might show how the Masoretic scholars understood the meaning of the marks they used. Some of them (or probably disciples of those that themselves had inherited the marking along with the Holy texts) wrote tractates concerning the topic of marking. Studying such documents, however, demanded to turn the focus of the research to history, or broaden its base too much. For a clearly structured dissertation, a pragmatic decision has been made to study only the most important manuscripts (*Leningradensis*, *Aleppo*, *Cairensis* and a few more plus the 1524 Venetian edition occasionally) and to leave out the Masoretic tractates entirely.

Examination of references and scholarly discussion expanded to phonology as prosody is a topic of phonology. No adequate phonological theory has been found, so it was decided to develop the accent research in parallel with phonology so as to provide the background for the results to set in and explain.

Another line of research, soon added and maintained throughout, was technology. The purpose was:

- to obtain data for searching and testing at the present stage of research;
- to make sure the data can be utilized also in follow-up research steps.

Technology demanded to design a well searchable format for the graphic record, a flexible format for the sound technology, and a corpus layout to make possible for Data Mining technology to apply.

The present research in accents has employed graphic record data intensively and the sound format occasionally. The synthetic sound testing and the corpus architecture has not been implemented yet.

Within this framework, the dissertation could concentrate on arriving to so far the most probable intonation values that have been assigned to individual accent marks in the Tiberian system and tested how well can those values go together. All other conflicting resources (variable alternative markings in more manuscripts than the few best ones; historical opinions and how to interpret them; rhythm and pauses) have been put off. This clear-cut limited objective has reached positive results that can be further examined by technology, historical research and from viewpoints of phonology.

C1a Syllable Structure

This limited scope of the dissertation could not include the whole phonology. The topic was partially treated in the preceding dissertation *PMHI*. The current, more developed general frame of reference is to be published elsewhere. Its applied version needs to examine more topics, not covered in this *PMH II* so a comprehensive Phonology of Masoretic Hebrew is planned as an output to round up all previous stages of the research. Even at this stage, however, it has been necessary to clarify first a few key concepts for the prosody research, to which the meanings of the prosodically interpreted accent marks belong. The concepts include especially the syllable and the foot. Higher units of prosody have been only briefly mentioned. (More detail would demand more pages of phonology in which the higher units are integrated. It would be distracting from the present topic which covers only a facet of prosody. Please see the appended CD \PDF\phonology for more.) The syllable in the phonology of the present author is the lowest whole unit of phonology. Consequently, phones and possible lower elements of utterance are properties of the syllable rather than self-standing units. Still, the *PMH* project does treat them, too, as they are vital characteristics of the syllable. This *PMH II* covers them in a minimum extent (a basic system, p:47) needed to discuss some more, notably prosodic properties of the syllable.

A crucial topic that studies in prosody need to approach from, is a discussion concerning the nature of the syllable. A resonance theory of syllable has been put forward. It makes possible two concepts:

- (a) broad, vocalized onsets that include vocal shwas and *xatephs* in a syllable with the next nucleus;
- (b) a diplosyllabism that makes segments independent on syllable boundaries.

Thanks to it, counting syllables and both vocal and silent shwas that so much engage non-prosodic accent theories and occupy a lot of space in their expositions, turn much less complicated. This prosodic hypothesis almost does not need to dwell on it. (Dealing with it is important for phonology to be complete, so it is a portion of the research programme. The exposition of accents as melodemes by themselves, however, does not require it.) A simpler syllabic structure enabled to keep prosody simple.

The resonance theory and layered structure of the syllable have impacts on morphology, too, not directly related to the *PMH II* topic. First, ‘discontinuous’ Semitic morphemes appear continuous as the vocalic base is continuous. Second, *segolates* are monosyllables. As a sideline, two experimental versions of a list of all syllables have been produced on the CD, with and without shwas and *chatephs* included in onsets. More are needed as beside the dilemma of vocalized or tight onsets, e.g. {B:REE}{Shil^Th} vs {B:}{REE}{Shil^Th} (1M 1:1), there may exist a third option, too: a vocalised coda. It may include instances such as {W:}{Xoo^ShaeKh} making *segolates* actually monosyllables, {xooshkh}; {W:}{RuU^aX} regardless if <X> was kept or dropped, {rux}; {M:RaX}{X/ae^PhaeTh} (v. 2), <{mraX}{xaePhth}>; {WaJ}{Ja^&a5}, <{waj}{ja&5}>, an apocopate for {Ja\&}{&/:a5ae^} which would be <{ja&}{&5ae}>, (v. 7); {MiT}{Ta^XaTh}, <{mit}{taxth}>; even {WaJ}{J:Bhaa^RaeKh} especially if ~Bhaa~ was actually ~Bh[....aae]~ (2:3), <{waj}{jbhaaerkh}>; {Shaa}{Ma^&aT} (1Kings 1:11), <{shaa}{ma&t}>, making it close to a regular {Caa}{Xaa^QT} (1M 18:15). The reason for such heavy vocalization of the text (for most of the examples, it was enough to follow from 1M 1:1 on) might have been musical chant that needed words as rich in vowels as possible, or slow clear recitation in demanding acoustic setting, or simply that Masoretic notation was indeed uninterested in recording syllables as we write them today and, instead of neat nuclei in the middle of syllables, they preferred to mark what the voice should do throughout the syllable. As the layered syllable structure explained earlier in iiB1a(vi), the voice is at work throughout, not just inside syllable nuclei. Under voiceless consonants it switches off for a brief moment but the positions of the articulators remain in place or keep moving (and in fact the vocalic setting can be detected in the voiceless noise) only to resonate again the next moment. If e.g. <{shaa}{ma&t}> needs to protract in singing, <{shaa}{ma&at}> may still be felt as <{shaa}{ma&t}> by those who know the language.¹ *PMH II*, however, did not follow this line.

¹ A few examples that seem to work, however, cannot make this vocalic coda concept accepted. As with any moderately probable ideas, it may well be rare cases that can show the idea improbable or impossible. Such are not easy to find in text by a manual search but rather by listing and comparing all instances. For syllable studies, stress, accent, syntax and semantics (i.e. mainly pausal forms and contrastive emphasis) have to be brought

C1b Melodemes and Contours

The core of the dissertation is testing two assumptions: that accent marks are iconic; and that they depict the progression of the intonation of speech. It is also assumed their meaning is comprehensive and covers also other prosodic phenomena, but rhythm, rate and emphasis have not been considered in any systematic manner though it seems apparent fewer marks would be enough for mere intonations. Expected non-intonational phenomena have been at least indicated in the auxiliary notation but this expansion of the research has been deferred so far. Types of modulation (i.e. pitch and other changes) have been sorted out in eight classes (p:63).² This typology is so far preliminary and has not been applied consistently anywhere in *PMH II*. A later systematic classification can nevertheless be based on it, the more so that the erstwhile Bohlian sorting (emperators, kings, higher and lower nobility) has been rejected as misleading (though, admittedly, useful sometimes). Another classification (p:64) that is based on a differentiation from *PMH I* into cohesion marks (from a hypothetic rudimentary stage of development), phrasal marks (primary stage), intonation marks (secondary stage) and minority marks i.e. 3'b (integration stage) develops functions in text rather than shapes of marks and can combine with types of modulation. The result is a fairly flexible classification that could set the subsequent research free from combination rules that either cannot be consistent as they cover only some typical sequences, or they are consistent but too complicated, burdened with exceptions, and what is worse, lacking an obvious sense. Prosody research needs no combination rules and should not allow to get distracted, be it by terminology or by sorting. The combined classification makes possible (but not necessary) to view the 21'b and 3'b marking as two subsystems of a single system, consequently to examine individual melodemes as self-contained units as well as components of one or the other system. The assumption is the apparently identical marks (written and called the same) that occur in both the subsystems fulfil a similar or the same role in them. The prosodic hypothesis needs to examine also this aspect, and much attention has been paid to it in *PMH II*. (It could simplify mapping to other marking systems, too.)

The hypothesis that 'accents' were to suggest prosody has been tested further since *PMH I* (so far only mentally, not technically). The analyses in *PMH I* of the few, mainly phrasal 'accents' could be kept (in fact, they were established on quite a few excerpts). Hence, *PMH II* could take up and analyze the 'accents' that were not processed by that time. Finally, prior to entering the compositional portion of the study, the analyses of the two dissertations have been condensed into drafting melodic contours of all the analyzed 'accents' (the units and marks called melodemes here) in B2a. I have provided a five-line stave (B2) which maps to the general 9-point scale of the general phonological meta-language Glossa (also designed for the project) unevenly (very low i=1, low ii=2–3, mid iii=4–6, high iv=7–8, very high v=9). Pragmatically, this is sensitive to extremes and less sensitive to the middle band. Such a non-linear distribution of pitch allows to simulate how a lector while reading took note of pointers to tops and valleys that helped him modulate the whole course of intonation. These unified steps made possible to test linking of melodemes whether they make up melodic contours that reflect a course the intonation of a particular passage might have. We do not know real intonations so we are unaware of what courses might have been recommended by the Masorettes as suitable for public or private reading. But intonation is a general linguistic phenomenon with similar manifestations in different, even unlike languages, so it can be reasonably estimated which contour is likely more and which less. Estimates in some instances get support from meaning, so it was convenient to reserve a subsection (B2b1) for examples where meaning seems to play a more important part. The examples fail to cover the corpus throughout nor systematically; still, by their mere existence they suggest prosody reading is an option.

The studies of accent marks in print, manuscripts, in typical and rare contexts, coupled with search runs through the data later when the programs were available, have made the following picture:

together to see if and how they can affect syllables. That is why competitive listings made of reliable data need more processing tools to reach evaluation. The issue of *segolates* demands to work with morphology.

² Possibly, seven would do as the *t:lisha* type need not be a real type since the melodemes may in fact belong to the *jored* and *qadma* types, maybe also the *meteg* type. (For the terms and pictures, see p: 63.)

³A typical verse in both systems is divided in two phrases (21'b) or two, three, four phrases (3'b), or exceptionally, a simple verse is a single phrase. These highest 21'b phrases finish in cadences that are typically conclusive, but due to meaning of the text (which the lector no doubt perceived), the cadential melodemes (the content of the 'accent' marks) can reverse the intonation and turn anti-cadential. That is why questions might be intoned correctly with a rising intonation despite being marked up with a 'falling' melodeme. Phrasal melodemes were primarily segmenting, falls were typical but not essential. The highest 3'b melodemes could modulate a high rise low fall in the former part of the verse if needed, and a moderate rise (which however could rise steeply on a focused word) in the latter part of the verse. Otherwise, the mid-verse division was as in 21'b: a splitting rather than sloping descent. 3'b, however, could even in this mid-verse split opt for a higher intonation, which was handy in shorter verses.

The phrases could themselves further split in as many **sub-phrases** as needed. They ended in a rising intonation that indicated 'more is to come'. The last sub-phrase before the main division was a low rise (in 21'b as well as 3'b), the other sub-phrases ended up higher. If the first sub-phrase in the verse had a reason to be singled out, a higher stretch of intonation could be inserted (it had to be signalled at the beginning and the end if it spanned more words). A small slump might precede the hump. Both 21'b and 3'b subsystems had such an option, though 3'b had more marks and combinations to select from.

The sub-phrases could, again, divide in as many **sub-sub-phrases** as needed. The rising 'more is to come' was probably present in their conclusions, too, but very probably it must have been lower, or else the contour of the verse would have been destroyed. As their lower pitch was possibly close to the inside modulations, their conclusions needed a special mark to signal in advance a cadence or anti-cadence is to come. The low rise of the last sub-phrase in the former or latter part of the verse was ushered in with a descent to that low level. The high rises of the other sub-phrases were ushered in with an ascent to the high level (the special opening sub-phrase had a special ushering ascent if it had a sub-sub-phrase). 3'b verses had the option to add a sub-sub-phrase low rise in front of the verse conclusion, otherwise the options were similar, though with marks that were a lower level yet in 21'b (apparently, 3'b did with less levels; verses were shorter and 3'b subsystem preferred modulating the insides to dividing more).

The lower level yet applied to 21'b, not 3'b. It could again have as many **sub-sub-sub-phrases** as needed, marked up with the same mark as sub-sub-phrases in 3'b (so it seems 3'b did away with the middle layer). The whatever ushering marks were 'pre-ushered' at this level with a single high descent mark. It was possible, not needed, that one of the later marks was different (here it is tentatively estimated as somewhat higher). Generally, these sub-sub-sub-phrases are mid-high to middle descents, probably following the natural tendency of voice to slowly subside. The 'pre-ushers' might have been lower but still high enough not to mix with intentional drops. The melodemes at this level (in 21'b as well as 3'b) are not phrasal. Speaking of 'phrases' is by analogy. Actually, their contours as examined in *PMH II* are close to melodemes traditionally called conjunctives though these still divide phrases as texts can show.

A fair number of melodemes appear to offer portions of an arc (assumed here to be a melodic arc), or crossing a zone, or starting it. The latter ends of such convex or concave arcs occasionally display some concluding behaviour but, generally, their main purpose seems to shape the contour inside higher level phrases. These I call **intonation melodemes** and think of them as a later development to make phrases sound more clearly. They might have been especially appreciated inside long phrases that were difficult to anticipate and easy to mis-intone. Sequences of more tokens of such marks did not possibly establish units of intonation but rather prolonged the contour of a single unit of intonation. (More examination, however, is needed to support this claim.) So their meaning might be to inform 'still the same, go on.' Most of those linking marks in the two subsystems are low pitch movements though a couple of high pitch marks are available in 21'b as well as 3'b. Their number is also well comparable and half of them is the same in the two subsystems. Apparently they serve the same purpose of modulating details.

Some marks are simple, some consist of a **doubled** (perhaps even tripled) symbol. So far, these are supposed to represent a kind of strengthening: a more emphatic version, which effect can be achieved by more phonetic means, and it seems to be too early to pick up one specific. Some such marks are used for fewer words than their simple counterparts (typically for a single word). But an option worth examining is that multiplicity is related to pausing (also a vertical line component in symbols may have a similar effect). Pauses, so far not covered by the research, are a crucial factor in public speaking and any, even makeshift, marking would highly probably include pauses. (See footnote 20 further on.)

³This summary avoids specialist language. For technical terms, please follow the A1 introduction.

Concentrating the research focus on intonation made possible to suggest fairly specific courses for each melodeme with minimum options. Their number would be greater if other prosodic features were let into the picture. (With some melodemes, it seemed apparent they probably included length or a break. It was noted down and included in their intonation symbols. But systematically, such features have not been sought for at this stage.) The benefit of that intentionally simplistic model was the marks were possible to replace by intonation symbols and check whether they connect in a contour, or fail to do so. If excerpted verses that had been earlier noted down for some interesting properties in prosody and meaning would fail to link meaningfully, the research would stop. On the contrary, however, it was possible to go on reading and fine-tuning the hypothesized ‘meanings’ of the melodemes in various contexts and the two subsystems, 21'b and 3'b. It should be emphasized the reading was continuous. It was only excerpts that concerned verses and short passages but they were always perceived in context. It worked as a natural filter against being misled by a configuration that might make the impression it was specifically related to the meaning of a verse while the broader context betrayed there was actually nothing specific in the configuration if it repeated in other contexts nearby with different meanings. It was many times such false assumptions had to be corrected. B2b presents a subset of such excerpts.

Attempting to reduce the danger that the selection despite trying to avoid bias did favour instances subconsciously which suited the prosody reading better, and overlooked clearly unfit cases, several unbroken portions have been analyzed, each with another secondary purpose. First I have concentrated on doubly marked passages: a verse in 1M (B2c1), then a Decalogue version in 2M (B2c2) analyzed separately for the public reading sequence and separately for private or study reading. A Decalogue in 5M (B2c3) has been analyzed confronting the two versions simultaneously to make differences stand out. Special attention has been paid to locations of problematic or unclear linking of melodemes. The analyses of the sequences in the two Decalogues purposefully allowed small smoothing out (but only as far as simple software could go) due to the belief early users might have do the same: in all likelihood, they did not put melodemes side by side, rather they possibly used them as modulation pointers. They might have done more smoothing than I have allowed myself in the contours. Since the two Decalogue versions appear in printed editions with minor differences in text and non-trivial, hard to reconcile, differences in melodeme configuration, it was necessary to provide the analyzed versions with a simple specialized text-critical commentary. The contours that came out of the two sets have shown:

(a) They are similar in fundamental features intonations of speech should have: the melodemes link where words link and break where syntax breaks; the contours rise in expectation and drop to conclude (these are common properties of intonation in all natural languages); and respond to meaning.

(b) They displayed differences in line with the purpose of each set. The ‘upper’ reading intended for public manifested a more ‘detached’ view, following general topics and running over specific details. These in turn were emphasized in the recommended prosody for the ‘lower’ reading designed for study. It can be generalized that the ‘upper’ reading seems to tell the message while the ‘lower’ reading as if tended to focus on concepts. This was not expected and can be taken as encouraging to research on.

The other two analyzed portions (B2d) are notably longer. As they are two versions of a single text, one of the Former Prophets (2S 22) marked out with the 21'b subsystem, the other of Psalms (Ps 18) marked out with the 3'b subsystem, and as there are many small differences between the two versions, a text-critical commentary would unnecessarily burden the analysis, so I have provided melodeme sequences with only a rough translation that tries to bridge over the differences and offer the gist of the meaning. (Hebrew scholars may prefer to follow the original.) Unlike as in the Decalogues, I have done virtually no smoothing, save for a few moderate shifts where a more general definition of the melodeme allowed it (I have commented it explicitly). Even with this method, the analysis demonstrated that the melodemes join in melodic contours that appear to make sense in the text, so probably no smoothing is needed. Tiny apparent discontinuities can be solved by correcting a melodeme definition (some have been suggested in the comments at the spots). Additionally, it graphically illustrated and virtually confirmed the *PMH I* observation that the 21'b and 3'b markings diverge so much as to confirm the independence of the two systems, but not so much as to result in completely dissimilar contours. They are alike in basic shapes and differ in details. That seems to suggest they were subsystems of a single marking system which used roughly identical melodic or generally prosodic elements that are arrayed with a different logic in one and the other subsystem. Given this, it makes sense to look first for general features of particular melodemes and then features derived from the specific subsystems provided the melodeme is used in both. This was the approach selected in *PMH I* and upheld here in *PMH II*.

The confrontation of 21'b and 3'b, however, failed to confirm persuasively the earlier assumption the 3'b was a later stage that developed the originally more rigid 21'b system into a more flexible and efficient version. Some spots seemed to support it, some otherwise. So far it is not a sufficient enough reason to abandon the assumption. If it were necessary later, however, it would be probably needed to correct the suggested classification, too. Presently then, the issue remains open (just as the reason why the Book of Job employed both of the systems in a single book at specific, as if selected, places).

While a few spots seem to suggest minor adaptations to a couple of melodemes could improve the contours, encouraging observation is they mostly apply well as they are. Obviously, this 'rough' visual testing cannot confirm much more than the hypothesis is probably correct. For tuning the values up, a long way is still to go, and specifically, synthetic sound experiments have to be engaged.

The **Book of Job** has not been analyzed by similar methods due to capacity constraints. It underwent, however, a different testing. The models of melodemes and, consequently, contours are digital.⁴ It was possible to calculate average position and dispersion of its melodemic interpretation. The Book of Job, considering its size and diversity (it is a discussion of participants of very dissimilar characters), is fit very well to testing if the dissimilar natures of the speakers can be traced in aggregations of their texts. The answer can be a hedged affirmative: differences can be seen though only moderate (so they still can be accidental). The mean values of the speakers cluster closely below half of the 1–5 span, which may be expected in reading out emotional speeches,⁵ most of all in the narrator (2.5), which is surprising, and then in Job (2.15), which does not surprise; the least in God (1.96) and the Song on Wisdom (2.0), which is also unsurprising. Expectedly, the most fluctuating is again Job, and the unstableness of his lines grows, increasing the plausibility. Each of the three theologically arguing friends shows a different trend (descending, ascending, level), which only underlines distinctiveness of the characters. Contrary to them, the speeches of God appear conspicuously stable and emotionless. Hence it can be concluded these aggregations show the recommended style of reading was to represent the participants as distinct types in speech. This seems to support the interpretations the 'accent' marks were originally a mark-up of a recommended prosody.

The same program was used to find out if melodemes can also distinguish genres. Selected was the **Book of Jonah** where the short story included a poem concerning the same topic at a key spot. That poetry with its lower mean (2.18) and less fluctuation (σ 1.17) than the prose (2.55, σ 1.28) appears to reply in the positive. (The narration is close to the total TN"K mean 2.5 and σ 1.3, the poetry is lower). But similar results from other places in TN"K do not appear unequivocally to support such a conclusion and, additionally, distinguishing poetry from prose is not a simple issue (cf the discussion in the end of B2e2), hence I am inclined to give a preliminary answer: probably not. At least the question demands further research: to analyze and compare more samples and consider more parameters of prosody.

C1c Tools and Methods

First, it has been shown that in order to analyze Tiberian graphemics, Tiberian manuscripts have to be studied. Having been written by people who actually heard the sounds they wrote must have left traces of such comprehension in their touches on the parchment. Later editors and printers did their best but hardly could they have escaped the normalizing bias of later interpretations of the Tiberian marking. It may be the best way to choose if one is after letters and words as the editors have already done a tremendous job in collating manuscripts. In 'accents,' however, the condition is sub-optimal. Some marks are hard to recognize even for trained eyes, editors differ in opinions and so may have differed ancient scribes, hence a majority witness need not be the right one. What can be inferred concerning the meaning of the accent marks, must be based on manuscripts or checked by them. Otherwise, the prevailing concept will be confirmed in prints edited by the same concept, and so on in circles.

Beside manuscripts, of which more should be studied and more thoroughly than it has been made in *PMH II*, graphemics has to be quantized in addition to being examined. Results need interpretation by

⁴ Provided a certain type of conception is upheld, they reach up to ratio level of measurement (cf B2e discussion).

⁵ Non-emotional or silent reading should be expected rather in the lower third of the spoken pitch band.

a phonology that is realistic, describes sound structures as they are rather than inventing procedures that explain how the brain can tell them or tell them apart. (It had to learn them first, that's how.)

The results showed that more detailed analyses are needed to display how much the hypothetical pitch values come close to their real speech counterparts, are able to calculate statistics, draw contours and compile synthetic speech for aural testing. That exceeds the scope of *PMH II*. Still, I have already done some groundwork and have included in the CD both text and data that deal with it theoretically as well as technically. It is especially phonology interested in structures rather than procedures, data formats used and a corpus architecture suggested. The present analyses for melodemes as well as melodeme sequences combined resources: printed editions (the standard BHS and more, cited where relevant; i.a. the Venetian 1524 edition), the most important manuscripts (#L, #A, #C where readable; more cited) and the output of my conversion program (for its full text and comments, see the CD). A possible follow-up of the research will need to consider more mss as well as to develop more programs if needed. But the present data formats have been designed so as to make such a development possible. An interested reader can use the enclosed data to run its own tests (such as to RegEx-search for melodeme collocations in the tag-reduced TN"K). This method was not used so extensively as it would deserve (also due to some disturbing imperfections discovered in the data, both input and output (cf ft:12 and 22 below), and leaves it as a debt for future research). Other four methods have been utilized in processing the marks: analyses of interactions of melodemes and meaning (B2b); doubled melodemes competing in the same system, 21'b, with slight smoothing being acceptable (B2c); two systems of melodemes confronted, with smoothing not applied (B2d); aggregations evaluated to find characteristics that might differentiate types of text (B2e). A range of applicable methods cannot be limited by this "manual" simulation; and data formats are vital in making such effort efficient. So far, programming and processing the data has shown in full the advantage that the AH# transcription is directly readable. Debugging was easier due to the fact Hebrew in transcription could be used as a data format. (Hebrew scholars need to adapt first. But the small effort is well worth.)

The AH# transcription has been so useful for the research that it can be considered a contribution in its own merit. If Hebrew script was used, reading would be easier for Hebrew scholars, but digital processing would be harder and hit sooner its limits. Every search by a program (or a regular expression) would have to deal with the oddities of the spelling, which would be laborious and error-prone. The AH# transcription meets the user halfway. It keeps the spelling so that the original letters, pointing and some more features can be restored, renders it readable (even for non-Hebrew scholars) and linear that makes the non-linear Hebrew script easier to process across platforms due to strict ASCII. Additionally, more information can be enclosed in the transcription without disturbing too much the fluency of text. Its current version 8.15 saw eight major revisions. It grew up with the project, covering peculiarities, keeping legibility,⁶ parsability and, if needed, encoding features of manuscripts and old prints, storing comments, basic textual criticism, queries and the state of the work in progress, capturing basic linguistic, phonological, editing and typesetting information.⁷ The additional capacities offer flexibility as research may need some occasionally (it has happened) but the principle stays simple for man and machine: uppercase=letters, lowercase=all else and can overflow to <tags>. It can adapt to other Semitic languages.⁸ The present research occasionally combined this transcription with Glossa, a sound description format developed for *PMH* but used occasionally (so mentioned only in C2 below). Recording sound hypotheses directly inside the transcription is a practical capacity if

⁶ Complex as it may become if many of its features are applied, the transcription remains basically simple. Its use of numbers for a few letters may initially disturb some, while e.g. readers familiar with Arabic chat alphabet are warned some of the number-letters differ (esp. 5 is no *khaa* but *šin*, 7 is no *xaa* but *řeth*; also J is no *řim* but *yod*).

⁷ Abridged from *PMH I*:274 as the objectives set up back then still apply. Intonation contours have been added.

⁸ For systematic work, however, it is better to fork a language/script-specific version, which is easy to do thanks to the principle that an uppercase can be trailed by any number of lowercase modifiers (X, Xx, Xxx). Properties of documents, however, compound the issue. A Ugaritic or Arabic note jots down well, but documents in Akkadian, Sumerian and Egyptian needed for me to develop specific systems (incl. Proto-Semitic due to different reasons). In the variety of Arabic romanizations, ASCII-reducing is Buckwalter (*Petr Zemánek*, personal communication). Qur'anic texts needed it expanded. Due to its letter-for-letter principle it reads hard, expanding it further would be even harder. My uppercase/lowercase principle allows to keep bracketing and special types available with the effect the transliteration capacity can develop as needed and more information can still embed. Gains and losses of the several Hebrew romanization systems could compile into a long table. AH# romanization occupies a niche.

kept in mind AH# (the Hebrew record) and Glossa (a sound record) are different and tricky to combine. They are alike in restricting to ASCII and extendability to more codepoints if needed. Their logic, however, is different: e.g. {an AH# unit of graphic} vs {a Glossa syllable}; [AH# phonetics] vs [a single Glossa sound]. The formats do not clash if Glossa is [kept embedded] but AH# legibility can deteriorate in long stretches (cf ft 19 below). AH# benefits from <tags> where melodemes typically belong to. It was easy to expand melodeme acronyms to symbolic pitch values (as in B2c-d). It was equally easy to reduce the TN"K transcription to only tags so that melodeme sequences could be checked with a short RegEx command; no special program was needed.⁹ Also navigating in a legible TN"K data was comfortable and writing programs was less difficult for records legibly composed.

The program that converts the CCAT transliterated text of 1990 Westminster Theological Seminary based on BHS¹⁰ into a reading shape of AH# (BnaA, “B to A”) is large (2,367 lines of code) as it has to cover a good deal of the logic that a reader of TN"K does subconsciously while reading. The program is controlled by functions called from a hash table of input characters (a great advantage of ASCII). Any character met then dereferences to a function, a swift compact switch. Consequently, adapting the code to a new input option, such as a new character that was added to the format, amounts just to add the character to the dispatch table with a function pointer. Re-arming the code to a new format implies just to replace the dispatch table and supply new functions. It would not probably make much sense to store Hebrew and Ugaritic in a common program (as forking is easy). It would, however, make sense to keep different versions of Hebrew (such as different transcriptions) in a single program as many functions can be expected to be used from one or the other hash table. More dispatch tables could be used also if more inputs are processed simultaneously (such as to complement information, or check for errors). The present version of BnaA worked each word from back to front and reconstructed syllables. Syllable divisions once computed have been recorded in the output. This feature can be adapted to any unit that is recognized while being processed. Another generally useful feature of the program is statistics. The algorithm while deciphering the written record into a reading shape meets a lot of phenomena, which it can identify, categorize and count, then calculate aggregations for given or all sections of the text. This has not been worked out so much but utilizing it more should not be too complicated. The program is densely commented (in Czech) to make maintaining and updates easier.¹¹ For suggestions on a more thorough overhaul of the code (and correcting errors that are known already), please refer to C2/CD.

Another program (kolikA) searches text for units, counts them and calculates statistics (position and dispersion data have been applied in B2e). Units are delimited by separators (a separator can be more characters), text is processed in book-chapter-verse divisions fed in through a parameter file. Chunks of text are counted and calculated by identifiers. Hence, speakers in the Book of Job that take turns are calculated separately (e.g. all Job’s lines together) as the identifiers are keys in a hash, and the collected data are entries. More hashes are used for more types of processing. The program is richly commented, with points clearly marked out where it is possible to adapt the code to different types of task.

Third party programs have been tried, too, but as their source code was inaccessible and lacked documentation, the results were not of much use. (The CD includes them, anyway.) Useful were **regular expressions** for searching, counting and reformatting data. *PMH II* quoted a few complex patterns in footnotes to let readers check. Actually, the composition of TN"K records is so complex (in AH# but any format would be) that most of search patterns had to be complex so as to take into account all the rare and exceptional phenomena in the data. Running and debugging regular expression patterns saves one writing a program for every search (though one has to for complicated counting searches). However, regexing Hebrew can soon become a nightmare as non-letter signs switch places and make RegEx appear wrong (even if it is right so making it right would be wrong). Enforced ASCII lifts the burden off. Complex patterns of pointed Hebrew need often be stored, re-run and updated, sometimes months from run to run. This has been a strong reason to insist on ASCII for all data formats (AH# and Glossa).

The two programs, especially the large BnaA, have technical debts which future should deal with, but these issues properly belong to the To Do subdivision C2, along with less intensively used tools such as Glossa, a background frame of reference i.e. phonology, and conceptual issues such as a corpus. What, however, has been employed, has confirmed it makes a good ground for subsequent work.

⁹ This is a bit simplistic to claim. The RegEx output still had to be cleansed from a few rare tags to get precision.

¹⁰ Please refer to \PDF\1a on CD for more specific references.

¹¹ Please refer to \PDF\2a on CD for description of the program in English, and \software\programs for the code.

C2 To Do

The claim that, so far, no irreconcilably discordant melodeme points have been met begs the question how conclusive it is. The task for the follow-up research could be subsumed under the heading: Search for a Confounding Factor. It means, for a phenomenon that makes the correlating variables of the model appear as if causatively related despite no true causation is there. An overlooked or hidden cause could make hypothetical melodemes join smoothly in sensible contours without being prosody at all.

The processing has to make sure all the relevant pieces of information are brought together. Given the heterogeneous nature of the data, the process of sorting the data out has to be taken in steps. The reason for such demands is that quite a few claims resulting from the MsH data research on the background of a phonological theory sketched above cannot be decided from selected excerpts. Especially in prosody they can be affected by selection bias more than corpus data. Even if excerpts can help obtain reasonable conviction, they have little power to refute convictions of other scholars, also reasonable but still incompatible. (A natural language is not mathematics where a single proof is usually enough. Languages have too many exceptions.) Only **exhaustive treatments** have the power to refute competing models. The reason is the results of theoretically grounded opinions on MsH contain both positive claims ('something is something') and negative ones ('something is not anything else'). Positive claims get support from observations and finds. Negative claims in turn demand a complete coverage of the options. Hence to support a negative claim requires to process much more data than for a positive claim. Some of the claims put forward in the present phonological model of MsH imply negative claims, too. Some of them have been made explicit. It was not possible to do so in all points, due to limited capacity as well as the space and time available. Usually, standard concepts are the ones to select for discussion, but in phonology, what is the current standard can be disputed. Due to it, the classical model, the one established in education for many decades, has been considered for the background, which has the advantage that perhaps all Hebrew scholars had been made acquainted with it at some earlier stage even if they overcame it later by any of the recent concepts.

In **segmental phonology**, it remains to make apparent if two- or three-valued <@> (a front, central and back versions) has an advantage over a one-valued back open-mid/open <@>. Concordant lists of all occurrences are needed. If, at a later stage, a morphologically tagged version with lemmata could be obtained for input data, semi-automatic checking of possible conflicts could be attempted. Otherwise, concordances have to be evaluated by a Hebrew scholar to see if distinctions known from standard graphics are not downgraded too much, and especially if not too many new interferences in the known vocabulary arise (though only limited vocabulary is known, anyway). A similar procedure should be applied to the hypothesis of the *furtive patach* <a> replacement for <H>, <X> and <&>. It is especially contexts that have to be checked since if words with these consonants replaced for <a> (+ a possible hiatus) sink into the background (e.g. due to the ^A colour around) too often, such hypotheses would be improbable and the phonology should better come back to the established furtive <a> epenthesis (i.e. <a> + an indistinct laryngeal/pharyngeal consonant) which the current concept would consider a form of strengthening. Collocation checking could be made semi-automatically at least so much as to bring forward passages that are suspect of blurring the word identity. The scholar could inspect the list to evaluate if any serious loss of information does happen and decide if the consonant is always needed or not. Similar procedures could be exercised for all open-close and front-back vocalic contrasts that the previous text mentioned (without actually working them out in detail) as vocabulary needs to be checked out for conflicts, either manually, or in electronic data, depending on resources available.

Concerning *chatephs*, MsH mss have been referred to, specifically #A, #L and #C (as well as occasionally a few others). Though these two or three have been consulted frequently, the comparison should be made systematic and thorough. What is needed is to process electronic versions of the mss¹²

¹² The input data to BnaA are #L-based, but not entirely error-free. Occasionally, it was checked by the printed BHS and #L in PDF. #A was searched through in *Mikraot Gedolot Keter* for *PMH I*. However, the software stopped suddenly working for *PMH II* due to having been terminated by the MgKeter team with no prior warning. The MgKeter people failed to respond to multiple and varied attempts for contact and the final 'explanation' obtained

and access the pictures at ALL points conclusions are based on (even such displays can be made computer-assisted). Beside the classical reduced vowel hypothesis (dealt with in *PMH I*), there is the enforced epenthesis hypothesis.¹³ Exactly these types of hypotheses need to be confronted with statistics and handwritten locations in pictures of mss rather than alternative consistent models.

In consonants, the concept of diplosyllabism (iiB1a1.1) would benefit from *dagesh*-strengthened onsets of clitics to see the proportion the selection between *dagesh* and non-*dagesh* versions was affected by prominence (stress, syntactic position, semantics; see iiB1b for examples including a purely semantic one, accompanied with pictures). It would be useful to compare the proportion with the similar one between regular words in phrase junctures to see if there is a relationship, considering also disambiguation and types of consonants concerned, sorted by frequency. Again, no selective excerpts can do it. <%>, <&>, <H> and <X> including their diacritical vicinity would deserve a fair statistics and concordances each. If an electronic version that supplies lemmata is later obtained, research in etymology, history and transcriptions would be possible to make the picture complete.

Concerning <R>, it might be worth finding what Tiberian-pointed mss contexts <R> appeared in comparing Babylonian mss due to phonetic reasons. The <RR> locations in the former ones appear to be morphologically induced geminations in contexts not affected by the <D/Z/C/T/7/S/L/N> neighbourhoods mentioned by *Hidāyat al Qāri'*. Unlike the apical articulation, fairly clearly described in that 11th cent. Masoretic treatise, the manner of the non-apical articulation is not so clear and seems dorsal to me.¹⁴ Given that Babylonian mss point <R> the same way as <B/G/D/K/P/T>, their articulation must have differed from Tiberian. Many of the back r-sounds can produce two versions that might be analogous to spirant vs non-spirant apical articulations. The rhotics are particularly heterogeneous group offering taps, flaps, trills, fricatives, approximants in quite a few locations, so a distinction of length as well as spirantization can be achieved with a selection in manner and place of articulation.¹⁵ The issue is the spirantized <Gh> might acoustically clash with some of the back rhotics. (Even uvular trills tend to get partially or completely fricative with some speakers or in time.) That is why I do not haste to accept a back rhotic sound into the presented MsH phonological system. Besides, these are phonetic issues, not strictly phonological. But, along with old testimonies, textual collocations of <R> in mss put side by side have to be considered together with other consonants in the system, or probably systems, and this turns out to be a phonological issue.¹⁶

Pretonic lengthening appears to be related to the prominent foot, a concept peculiar to this theory. But the fact that a theoretical concept is available and could be brought forward for explanation does not warrant its use. All instances of pretonic lengthening have to be put side by side, considered with

after much effort was “the CD versions are not supported anymore”. Given that the data have been made inaccessible, not “unsupported”, and the paid licence (2007) was disregarded, the arrogant behaviour of the MgKeter people is a big disappointment. Such a mix of mercenary and scholarly pursuits is exactly what is to be avoided, see iB4; regrettably, it is not easy to guess the reliability of companies and people before you buy. The only source of #A for the *PMH II* stage was PDF mss pictures. An alternative #A version is badly needed. #C data would be welcome but probably do not exist. Given the poor quality of the PDF copy available to public, smaller signs of #C are mostly unavailable to research, anyway. The only feasible solution for both #A and #C is to transcribe the locations one works with and hope that the volume of utilizable excerpts would grow as the work goes on.

¹³ See e.g. Khan (2013) *Shewa: Pre-Modern Hebrew* (in *Encyclopedia of Hebrew Language and Linguistics* p:543–554); *ibid.* *Reduction of Vowels: Biblical Hebrew Reading Traditions* (p:327–330); *Guttural Consonants: Masoretic Hebrew* (p:165–169), and *passim* as Khan is general editor of *EHL*; also Khan (1987) *Vowel length and syllable structure in the Tiberian tradition of Biblical Hebrew* (*Journ. of Semitic Studies* '32#1 p:23–82) that interprets the MsH record consistently (including the improbable unrecorded same-quality epenthesis to a long vowel in a closed syllable).

¹⁴ Khan (2013) *Resh: Pre-Modern Hebrew* (in *EHL* 2013) refers to it as “advanced uvular”, obscure to me.

¹⁵ See Ladefoged | Maddieson (1996), chap. 7 for a survey on rhotics from a viewpoint of phonetics.

¹⁶ Cluster concordances suggested in A2, analyses of mss, even system considerations, cannot be overestimated. The TN^hK text is much older than MsH and was formed independently of any later phonological system including the one of MsH. It might well happen that a MsH sound interpretation of the ancient text was imperfect, in e.g. mixing two sounds into one, or rearranging contrasts. The text would not be affected by such reading. On the other hand, the text could help keep some differences alive even if they disappeared from the living vernacular, or help a temporarily lost distinction emerge again. This is a condition substantially different from a text being created while a synchronous phonology is at work. The main source of phonetic reasoning may go on to be testimonies of the Masorettes or lectors themselves, unclear as they appear. Data analyses can most of all help interpret these witnesses. Expositions of these documents, however, is out of the scope of this *PMH II*.

their melodemes, syntactic positions and semantic values to see if some pausal forms could be sorted out of the group. Consonants instead of vowels appear to be lengthened in some words, which would still concern the foot. But some cases perhaps would resist being pushed in a foot category. These should be separated away, too. Then it could be apparent if pretonic lengthening is a manifestation of a prominent foot, or the concept is not so useful as it seemed. (Different levels of pre-stress and post-stress prominence can be found in languages, though a pre-stress reduction seems more common.)

Pausal forms demand a dedicated, multifaceted study. Due to the fact that many forms cannot be sorted into pausal and contextual ones (and some pausals, such as %aa^RaeC are more frequent (1,351) than contextuials such as %ae^RaeC (805);¹⁷ and some, such as %aTTaa and &aTTaa, have as many as three forms), it is not easy even to count how many they are, and due to the fact that some occur with lesser melodemes than the major ones, it is almost impossible to produce their list automatically.¹⁸ They have to be studied with the prosodic structure and meaning of the verse.

Vowels, syllables, feet, pausal forms, syntax and semantics, all these need to be taken together in consideration with melodemes, and their relationships need to be made accessible simultaneously. It appears that the sound structure makes a large system impacting other layers or systems of language. To assess the impact prosody has, the sound should be modelled and aurally tested. Intuition can be sometimes more reliable (though not infallible) than rational analysis. Language is telling messages, and the ability of running and hearing a version before assessing how well it reflects e.g. topic–focus articulation, contrast or emotion, can be a boost. But analysis supported by figures has to be present as the purpose is to understand the system that makes it all work together, not simply decide on a verse.

The present dissertation makes part of a project that is the core of a research programme. The principal idea of the programme is that a realistic phonology of a language has to be based on large quantities of data. The project is a roadmap of particular steps to make the idea possible. The present dissertation is a step on that road. No complete and definitive ‘Tiberian’ or Masoretic phonology was expected at this stage as it would directly contradict the pivotal idea of this project, which is presenting phonology as a long-term data-driven research. Excerpts used were motivating or perhaps direction signs but a phonology research needs to quantize and compare whatever can be found in data to create competing models to submit to testing and find the winner. It also demands to sound the record and listen. Synthetic speech that would perform the data ‘blindly’ could at the same time betray breaks and discordances in speech melody. But even if alignments should finally fail and a musical theory (presuming the original mode of the MsH TN"K delivery was singing) would possibly prevail, the speech intonation theory was worth testing. However, it ought not to be discarded before enough discordant points are discovered throughout the TN"K. Alternatives that would remain are either musical (whose variety of motifs is still hard to explain), or syntactic (which has to deal with parsing conflicts in doubly marked or parallel passages, cf iiB2c and iF3.3, respectively). Accent marking applies only for some of the ‘accents’ in Tiberian-like systems and cannot be accepted alone.

Rhythm units have been underdeveloped so far. Even the most explicit claim, the prominent foot that brings contrasts up to the foot level cannot be considered more than rudimental. What especially begs attention in MsH is the usage of pausal forms in text, especially in melodeme structure (but also syntax and semantics). Though the forms seem to correlate highly with melodemes, they do not condition each other and appear independent. The present data, however, lack identification of pausal forms, and syntactic as well as semantic data can only be dreamed about. More within reach might be to find out if multiple accents in an accentual queue express secondary stresses and consequentially suggested slow-down as an option in recitation. The capacity of the present stage could not contain auxiliary marking despite so many excerpts accumulated since as early as the *PMH I* stage. The volume of excerpts so far stays unused. Still, *maqeeeph*, *paasaeq* (partially covered in *PMH II*) and *maethaegh* are full of issues. The latter one has been examined in detail by renown Hebraists and an extensive body of literature is available. Any future research has to take it in consideration. The question related most closely to the research plan is especially the usage called *minor ga'ya*: if it does suggest a secondary stress and if so, if

¹⁷ Counted from Even-Shoshan 2000, p:112–118, excluding all suffixed forms. %aaRaeC may, however, be both a pausal form and a contextual one affected by the Ha- article, so the figures are probably not conclusive yet.

¹⁸ J. D. Price 2006 has counted 6,263 pausals out of 34,718 forms, so the rest of 82 %, 28,455 forms, cannot be determined. The 18 % pausal forms “may seem low on first reflection, but some words are semantically destined to never be syntactically or rhetorically prominent. The same is true for grammatical forms such as constructs; they are grammatically bound to the word that follows, so they are never expected to coincide with syntactic division” (p:3–4).

it can tell anything on the syllable structure, particularly on the syllabicity of shwa in the onset, whether e.g. Ja&aBhooDh are two syllables {ja}{&bhoodh} and Ja&aBh:DhuU also two, {ja&a}{bhdhuu}, just as in Po&oLiI {po}{&oLiI} while the marks <a>, <a> and <o> may reflect the degree of (acceptable) vocalization of <&>, such as {..j..a|..?(&)(/)+a} or {..?(&)+o..l....i}, respectively.¹⁹ Vital for public speaking performance to be efficient is also the manner how real silent pauses are distributed. In challenging acoustic conditions (many common venues must have been acoustically challenging prior to the advent of modern sound distribution systems), more important is to grade the message by periods of silence than amplitudes.²⁰ Pauses implied in melodemes would be a practical support. Any rhythmic aspects discovered in MsH (primarily in the Tiberian graphics) should be used to revise melodeme hypotheses. An issue is also whether it is possible to specify differences in sound (i.e. not just in phonosyntax) of the 21'b and 3'b MsH systems. Rhythm is essential for poetry so if any distinction between the two genres is to be expected, it would be in aspects related to rhythm (emphases, pauses, temporal domain) more than anything else. Later on, a preliminary theory of MsH phonology of Tiberian marking could be compiled. At that stage if not earlier, more mss with their graphic details should be covered.

That entails also to include **other pointing systems**, sorting out their relationships (in what is already known as well as what follows from the research). One of the working versions can be that Palestinian marking and (less probably also) Babylonian systems expressed adequately the traditional vernacular in (and for) the respective communities and may be helpful to interpret the Tiberian complex scholarly pointing that worked with diverse local communities in mind. Hence, the preliminary set-up values can change significantly at these stages of research, and concurrent or competing alternatives may emerge. If times and places can be traced, a regionally diversified preliminary MsH phonology could result.

The accumulated sound data should be sounded as early as possible. Aural evaluations of preliminary hypotheses could be inestimable as the competing versions can be ordered even before there is enough formal parameters to score. The ones accepted as probable could be entered in a Data Warehouse and adjusted to subsequent results. The hypothesis that scored highest in the listening tests and procedures of Data Mining is the candidate for the resulting theory of MsH phonology. A related question that is to be decided (and perhaps tested, too) prior to embarking on aural testing is whether listening evaluation of artificially reconstructed speech, though (relatively) accentless, is up to assessing probability of a no longer extant sound shape of a foreign language. Ethnic accents cannot be divested in the evaluators' listening capacity, too. Also, though in perhaps a lesser degree, a bias in TTS programmers can possibly tint the artificial sound with their linguistic background specifics. If it is an issue, it is yet to be seen.

The **phonological framework** as reflected in the approach to data as well as in Glossa design, while aspiring to be complete, reflects so far mainly the practical need of MsH confronted with inadequacies of the current phonologies as described in *PMH I*. Intentionally it abstains from the quest for universal constraints and compositions. Still, confrontations with more different languages would certainly be beneficial as human cognitive faculties processing their phonologies can be assumed to come out of the same set. In them, the layered concept of the syllable, the distribution of the dynamic properties among static structures, the ability of samples to generate paradigms, the core and periphery as well as a complex phonemicity and substituting syllables instead of phonemes can only benefit from broader linguistic exposition. It is especially the latter two concepts (phonemicity, substitution) that need further development. Complex phoneme ideas have already been voiced in scholarly communities (two such approaches mentioned in references are Hall 2009 and Lu 2012 while another one, in less clear terms, was suggested by the author in *PMH I* C3.1.2). The syllabic rather than lexical substitution test is yet to be developed and tested on as many diverse examples as possible. Searching syllabaries for configurations of segments (considered properties of syllables, hence not freely interchangeable) may

¹⁹ Please note Glossa can accept AH# transcriptors if the context makes it clear (which it does hopefully at this place in *PMH II*) though the two systems generally cannot merge and context-less mixing is not recommended.

²⁰ Passages uttered softly would easily vanish unless amplified in the surroundings. Major compounding factor, however, is reverberation. For speech, up to 0.8 sec is the optimum value. Shorter than for music. As reverb does not change the frequency of sound but it affects its spectral composition, it adds 'depth' to music and 'fullness' to chant but speech is understood worse or not at all in longer reverberation times. Wise speakers add silent breaks to divide chunks of speech, and precede their points of emphasis with clear pauses, which is more efficient than raising voice. The length of break should range from fractions of a second up to as much as 3 seconds for a very strong stress. (Ing. *Vlastislav Maláč*, personal communication.) If the public reading mode was speech, marking points of types of pauses would be needed. If the mode of delivery changed later, singers might not care any more.

turn less demanding on resources than looking through vocabularies. Also the concept of descriptive features (with more properties than distinction, hence not in closed sets) and operations as dynamic attributes of positions/elements (hence not overly complicated) can alleviate research procedures.

The theory as a whole has been shaped by the belief phonology with its multiple types of units needs computing because relationships are too many. Theories that reduce their attention to phonemes cope with simpler condition of relations for which manual treatment is adequate. Such a reduction, however, reflects a linguistic point of view as phonemes are the interface to linguistics. Phoneticians understand sound systems are richer by the order of magnitude, where units turn subsystems of their own, working in synergy that has the subsystems or units proceed in consecution (a complex advance) rather than in a procedural sequence (a straightforward operation). Provided meaning is defined by relationships, the phonological meaning exists apart from the distinction power of phonemes, and is complex, too. To find out how the sound system of a language operates is to model its indigenous meaning structure intertwined with its form structure. Apparently, applying this view to other languages is a slow process which cannot be done by the author alone. An advantage of applying it to MsH is the system is abstract, not depending so much on reliability of phonetic reconstructions. Perhaps this feature might stimulate other researchers to accept the challenge. The approach makes possible to start with imperfect or wrong assumptions, and correct them incrementally. That is a condition fit for non-spoken languages with heterogeneous, incomplete, even conflicting data (such as MsH). In living languages, the theory as being temporally agnostic and defining presence a time window covering intention and expectation, allows to count on anticipation as a shaping force. Adding to it the ability to create paradigms easily and effortlessly (expressions become patterns that are more or less active, inactivated, limited to instances, responding to feedback, adapting, applying partially, forking development, mutually enhancing or crossbreeding), researchers are able to model psychology of language use and interaction in society. It all can feedback stimuli to the theory that may gradually get closer to reality in language description.

This concept of phonology (see the CD for more) expects processing of electronic data and testing. Reliable data are crucial for a relevant phonology. Quite a few mistakes and idiosyncrasies have been uncovered in the input data so it is worth trying to find more reliable ones. Also, programs that have been developed for *PMH* processing can be improved. Two programs finally made it into the appended CD. Still, it is desirable to make conversion to AH# more flexible so as for BnaA or its future equivalent to be able to generate multiple sound transcriptions in line with parameters. (More comments below.)

Two main modes of testing are envisioned: **artificial sound synthesis**, and **data mining** in a corpus. There are more technologies of speech synthesis, so a hub in a uniform transcribing and programming language (Glossa) could help manage the experimental complexity of competing approaches.

Data mining in turn need algorithms beside data. These are available and a CD2b text suggests a few of them. They need to be adapted for the task and, quite probably, more could be utilized. The two anticipated directions of research inquiring for unobvious relationships, aurally and by algorithms, can appreciate transcribing capacity of Glossa that has already been occasionally tested in *PMH II*.

The present dissertation has already checked out somewhat the expressive power and flexibility of Glossa. The original intention was to produce a TN"K transcription responding to a current version of phonology. Since then the metalanguage grew in complexity so much that a necessity of trimming it down has become obvious. It should be dealt with prior to starting on conversion programs between AH# and different sound hypotheses in Glossa. Trimming Glossa down, however, is no trivial task due to its intended versatility. Reducing phonological means has to consider hierarchies and practical value of needs in typologically different languages of the world, so it is a long-term group assignment, not for an individual with limited knowledge of languages. Reducing the programming means of Glossa is also not to be based only on an impression of what may be practical, necessary and in turn expendable and burdening. Glossa needs to be tested on various programming tasks and gradually balance in flexibility and simplicity. The other facets of the tool need to be treated similarly. Realizing this, it soon lost sense to program an output in this format as the present version may become obsolete. So far then, Glossa is available as an informal representation. Admittedly, some other transcription made ad hoc, simpler and more elegant, might provide the same service. Such one, however, would probably lack the breadth and formalizing potential of Glossa which thanks to it is worth preserving. Having brought Glossa to a point from where slimming rather than swelling is expected, may be a successful conclusion of a stage.

The project expects that Data Warehouse arrangement with Data Mining methods can make up for too small a corpus (though some phonological data are dense unlike standard corpora). Arrangement

has been discussed and suggested. If the two technologies, however, can really do it, remains to be seen after such a corpus is implemented and launched. It is a resource-intensive engineering task.

Discussion of engineering details can open by comments on the **programming language**. Perl has to be abandoned. It was perhaps a reasonable choice still in 2007 when *PMH* was launched but a decade after it lost the edge. In spite of theoretical advantages, it may be concluded at this stage that Perl as a programming language did not prove efficient for two reasons: (i) It is not supported by a large enough community of users able to help a solitary Windows programmer. Their availability has marginalized, also on the internet which was the main resource of information for the author. (ii) Referential is an installation (if anything), not a description. The fact Perl lacks a reference description has turned out an obstacle yet harder to overcome as it means descriptions of functionalities have vague spots where installations may or at times perhaps must differ. They are not bound by a regulation, they only make itself close to a model installation and try to reach a reasonably similar operation. Generally it need not be a fundamentally inferior concept. But when there is not enough installations around, a reference body of shared experience is the worst option for a solitary learner under neglected Windows who finds descriptions may not always be applicable. The *PMH* project would better get on with a language based on obligatory, exact and complete description of syntax and semantics²¹ and supported by a large user community experienced under more systems. Otherwise, selecting a simpler, more elegant, well used language might not help if it was defined the same way as it would again threat endless wading through forum talks and opinions without reaching clear conclusions. For that reason, Ruby is not eligible, and Python in turn becomes a serious candidate. In any case, developing more software in Perl had no point anymore. I put aside code in progress and consider the two already debugged and working programs to rewrite in another language. Especially the smaller one, a 300-liner *kolikA*, so far used for statistics of prosody throughout TN"K, was programmed for a general purpose of processing any units anywhere in TN"K, hence it was to be edited for repeated runs in tasks of a similar type. Maintaining it in a different language than the rest of the project would be inefficient. Whether to rewrite a 2500-line juggernaut *BnaA* that was originally meant for a single purpose, is another question.²² Please refer to CD \PDF\2a1 for six particular points that should be improved or considered as soon as programming resumes.

Expectedly and as always, more issues seem to have been opened than settled. Some of the points appear within an easy reach. Some points mentioned above, however, do not appear close and perhaps not within the authors' reach at all. The project is extensive, interdisciplinary and the more it grows, the more it reaches beyond expertise of an individual. It has already become all too apparent that some of the supports could not have been more than exploratory pins where solid pillars would be needed should the building be ever built. If experts in those domains accept the challenge, they certainly would not need my opinions concerning what should be done next.

²¹ The emergent Perl 6 (after very long development) has no reference installation so far, it has only a description, but it is uncertain if it later gets back to the old practice of being defined by installation. The risk seems real to me.

²² Debugging the program took too long, so the data generated are still not error-free, though adequate for quite a few purposes. Other sources can also check some results. A beneficial decision was to enter syllable boundaries in text from the analysis the program made. Relying on them, however, betrayed that the algorithm needs tuning up on a few spots so as to improve the quality of the output to provide precise rather than indicative results. Anyone concerned may compare differences between correct manual transcriptions of the passages 1M 35:22; 2M 20:2-17 and 5M 5:6-19 in this dissertation in B2 (2M is printed twice, each melodeme sequence separately) to confront it with corresponding parts of <Gen 35,22=>, <Exo 20,2=>ff and <Deu 5,6=>ff in data attached to the dissertation. Data contain a few extra codes: @ in place of o or aa is a correct indecision; and a common <two:melodeme> tag is OK. Other differences are program errors, exceptionally input data faults. (Available crosscheck statistics seem regrettably based on other versions.) One can also check the syllable files on the CD that also reveal a few errors. While the data were useful at this stage, a follow-up cannot take them for granted.

References

For pages where a reference is used please make a search in the electronic (PDF) version of the *PMH II*. Glyphs and accented letters are disregarded, e.g. S, Š, ʃ and ʷ are taken as one letter. I transcribes לָ. p: page v: or ' volume # issue / subtitle if no : to quote \ series n. v. non vidi

ČSAV	Československá akademie věd
CUNY	City University of New York
CUP	Cambridge University Press
EHLL	Encyclopedia of Hebrew Language and Linguistics
JTS	Jewish Theological Seminary
MIT	Massachusetts Institute of Technology
SNTL	Státní nakladatelství technické literatury
SPN	Státní pedagogické nakladatelství
TSD	Text, Speech and Dialogue

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The references cover the printed portion as well as the texts included in the CD as they are interrelated.

Please note that, unlike all my previous works except *PMH I*, no formal distinction was possible to make here (especially in the texts included in the CD) between resources personally consulted and those I felt obliged to cite since my resources quoted in the work made explicit reference to. I have made every effort to consult even those, to the effect that most of the references listed above have been at least verified by me in the process of making the work. For various, mostly technical reasons, I was, however, not able to follow every and each reference indirectly obtained. As the items included in the foregoing list have been mentioned in footnotes (plus a few more whose data was found too incomplete to check, minus a few on phonology) and some of them in the body of the text, the meticulous reader can distinguish those that have helped me directly as I have often commented on the information drawn from such resources, from those I had to include as part of my scholarly obligation since I depended solely on my resources for evaluation. Such references are in small minority and concern mostly the CD. Even with them, I have tried not to rely solely on the authors but use independent bibliographical resources to arrive at citations as complete and precise as possible.

All directly consulted resources have been included regardless if referred to in the footnotes or not.

Providing an annotated list of items directly referenced to be able to set apart the items referred to indirectly was not feasible due to restrictions on the size of this volume (references would swell to another several dozens of pages, should I include a short annotation to so many of them). The decisive reason, however, was that such a list could not be complete despite the efforts as some of the CD texts were compiled from my earlier notes I have made in the course of the past decade or earlier. The notes and references were fairly complete to include in the text for information, but not as fresh in my mind to be able to provide a general evaluation of the resource. In a very few instances, it was not even clear to me, after those years, whether I have consulted all the articles mentioned in a note, or have drawn from one of them and only preserved the other references. In a very few instances (two, or three maximum) I have failed to bring up a complete citation at all but was either able to name the authors or narrow the reference down to two candidate citations. Considering the content valuable I have at least honoured the authors of the ideas by mentioning them in a footnote. Remembering, in another instance, my indebtedness to two resources, I have acknowledged them both for the whole of CD2b generally, with less specific citations (of which was whose) than the authors would certainly deserve. The printed text of the dissertation is not affected by that.

Abbreviated references ‘name year’ are standard to use when the reader can be supposed to keep the item in mind. Occasionally, when too distant from each other, I have either repeated the full reference, or tried to refresh the item with a longer abbreviation so as to reduce the need to refer to this list.

Ambisyllabicity

The following list does not reflect if the references have been employed or not. It is a bibliography to an issue that is occasionally debated as if Kahn 1976 were the first one to bring up the concept. It is not true but it is consequential for the discussions. Here is then a fuller list than is often seen in references.

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The observation that syllables and phones do not align is almost as old as experimental phonetics. Eduard Herrman as early as in 1923 and especially Kuryłowicz in 1948 brought it up to the theoretical level. As far as I know, Trager and Bloch were the first ones to name the phenomenon ‘ambisyllabicity’ in 1941 in a model of English phonology that virtually had no impact. Shortly after, Eliason mentioned it in 1942. Later, Pulgram considered it for English in 1968. Either he failed to put forward persuasive arguments in 1970, or the current models had no place for it (which still applies in 2016), his reception was minimal, notably by Kahn 1976. His critics, some of who considered ‘ambisyllabicity’ an ad hoc term, included Kiparsky 1979, Selkirk 1982, Picard 1984, Lass 1985, Harris | Kaye 1990, Hammond 1997, Goldsmith 1999 and Jensen 2000. Today, the term is associated mainly with Kahn (and two or three references usually supplied seem to always start with him). Outside English, the concept was used by Clements | Keyser 1983 for Niger-Kongan Efik in Nigeria, Borowski | Itō | Mester 1983 for Danish, Vennemann 1982 and Wiese 1996 for German. English is developed on by Hooper 1978, Gussenhoven 1986 and Rubach 1996. Applications by Suzuki 1985 to Old English and Kang 1991 to Korean were of the less successful ones. All in all, it is so far not considered a generally established concept nor a standard term. Criteria of various scholars and for languages differ (Picard 1984). Usually, it is associated with Germanic languages, mainly English phonology (which may not promote it for general acceptance). Additionally, ambisyllabicity shifted to very specific concepts, e.g. van der Hulst 2002 believes it is a manifestation of length (I separate it from length conceptually). Even the term itself may not sound helpful: Latin *amb(i)-* just as Greek *αμφ(ι)-* (which would suit the stem better) suggest a ‘straddling position’ across ‘both syllables’, patterned after ‘ambidextrous,’ as if the two syllables were the only ones in the word (‘straddled’ was probably the intersyllabic boundary). Questioning the concept of boundary and unhappy for associating it with an exception from a phonological system (a sort of *détour*, or a crutch) whereas the phenomenon is a regular phonetic fact very much visible to anyone looking at a spectrogram, I have decided to coin a new term so as to dissociate it from phonology (which can find it useful or useless for reasons I need not concern myself with). ‘Diplosyllabicity’ replaces *ambi-* for *διπλ(ο)υς*, meaning ‘double(d)’ (Lat. *duplus*) focusing on the consonant that *doubles* its relationship to both one as well as the other syllable (it sees two syllables instead of one, like in ‘diplopia’) regardless of how much of the consonant is left at either side.