

General comment – all musical examples are to be sung at a comfortable relative pitch. SHV assumes a scale from c(d for the 3 books) to C with tonic on E for all books. Several modes are possible with her scheme. Jacobson has notation assuming a tonic F for Torah and D for Haftarah. This would imply a d minor natural scale for the latter and an F scale (without B flat) for Torah. **Conclusions tentative at this time.**



Here's an example verse: Zephaniah 3:8. It uses all the letters - let's see how many cantillation symbols it uses.

לֵךְ חִנּוּלִי נֶאֱמַר-יְהוָה	Therefore you tarry for me, this is an oracle of Yahweh,
לְיוֹם קוּמִי לַעֲד	to the day of my arising to the booty.
כִּי מִשְׁפָּטִי לֵאסֹף גּוֹיִם לִקְבֹּץ מַמְלָכוֹת לִשְׁפֹךְ עֲלֵיהֶם	For my judgment is to gather nations, to collect kingdoms, to pour
זַעֲמִי כָל חֲרוֹן אַפִּי	out on them my indignation, all my fierce anger,
כִּי בָאֵשׁ קִנְאָתִי תֵאָכַל כָּל-הָאָרֶץ:	for in the fire of my jealousy, all the earth will be devoured.
















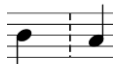


For the Jacobson column, I have put the pieces together as they must be. Each set of accents operates as a group, so the cantor must look ahead to decide what to sing. I have worked out the remaining sequences – and this is Haftarah and not Torah which I used in error for my first pass! See my attempt below this analysis. Help would be delightful. Comment if you can. First note the main divisions: 'mid-point' and end.
















I have now worked out the sequence below: mahpakh, pashta, zaqef qatan, tipeha, munah, atnah –for all my amusement at his libretto of accent names, I begin to see his very clever method of teaching.















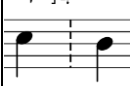


First a table showing the beginning middle and end.

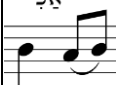
















The sign	Name and interpretation in Jacobson	Position	SHV	Comments
⋮	Sof pasuq this is real punctuation	as text	it is not a note	Marks the division between verses. I probably should not have put that one in this table - but it is the most obvious - so recognizable.
לַעֲד	Atnah coming to a rest	Under the syllable	subdominant  le - ad	This is always a rest point, a cadence. It appears that traditional cantillation (Jacobson) reflects the same ending as Vantoura, in both cases ending on the fourth note of the scale. Note though that Jacobson here is not dealing with the 3 books. Ends on the fourth note (supertonic for Torah, subdominant for Haftarah.)
הָאָרֶץ	Siluk separation	Under	tonic  ha - a - rets	The siluk always occurs at the end of a verse – it is the same sign as the meteg which is ignored by SHV, and it is hard to tell which is which in a computer program. I will not be programming any of Jacobson's traditional cantillation. The differences are too great.

The following table is in detail. I have left in the Torah column for the sake of comparison. It is quite different in pitch and shape.

The sign	Name and interpretation in Jacobson	Position	SHV	Jacobson, (Haftarah)	Jacobson (Torah)	Comments
לָכֵן	Mahpakh inverted	Under	6 th above the tonic לָכֵן 8  la - kein	 la - kein	mahpakh 	
חֲכוּלֵי	Pashta extending - post	Over the syllable	ornament: same note+1 (0 1) חֲכוּלֵי  cha - ku li	 cha - ku li	pashta 	The ornament on לֵי might be something like the pashta shown, i.e. a rise of the fifth.
נֹאמֵי יְהוָה	Zaqef qatan small upright	Over	ornament -1 0 נֹאמֵי יְהוָה  ne - um ado - nai	 ne - um ado - nai	zaqef 	If we were following Jacobson we would move on this ornament and change of note from C to G.
לְיוֹם	Tipeha handbreath	Under	third # above the tonic לְיוֹם  le - yom	 le - yom	tipeha 	Jacobson does not interpret the signs below or above the notes as being significantly different. The tipeha seems like an SHV qadma.
קוּמִי	Munah sustained horizontal	Under	fifth above the tonic קוּמִי  qu - mi	 qu - mi	mu-nah 	Munah appear for Jacobson to be simply stress or sometimes a change in note.
לְעָד	Atnah coming to a rest	Under	fourth above the tonic לְעָד  le - ad	 le - ad	at-nah 	Here there may be some agreement between the systems.

כִּי	Merkha prolonged	Under	fifth above the tonic כִּי  ki	 ki	 Here Jacobson gives three possible interpretations of merkha, from g to e, or the top half of the first inversion of the major triad, or an extended melisma starting and ending on the same note.
משפּטִי	Telisha Qetana small drawing out	Over	ornament, 1 2 3 משפּטִי  mish - pa - ti	 mish - pa - ti	 telisha The right-leaning telisha is quite different for Jacobson from this left leaning one. This may be a misprint for pazer.
לאֶסֹף	Qadma proceeding	Over - pre	ornament, 1 0 לאֶסֹף  le - e - sof	 le - e - sof	 kadma Qadma would represent another change of note. For SHV it is simply an ornament that returns to the reciting note.
גוֹיִם	Geresh expulsion	Over	ornament 0 2 גוֹיִם  go - yim	 go - yim	 geresh This also appears to be an ornament that begins and ends on the current reciting note – however, perhaps there is no concept of a variable reciting note in traditional cantillation.
לְקַבֵּצִי	Munah sustained horizontal	Under	לְקַבֵּצִי  le - qav - tsi	 le - qav - tsi	 mu-nah SHV does not find a repeated accent significant. It is common enough for a munah to be repeated when one is already on that reciting note. As such it just acts as an accent and not a new note.

ממלכות	Revia resting	Over	ornament 0 -1 ממלכות  mam - la - kot	 mam-la - kot	 revia	You can begin to see that there is almost no relationship between the two systems at all. I will leave the rest of the small images to be seen below the table.
לשפך	Qadma proceeding	Over - pre	ornament, 1 0 לשפך  lish - pok	 lish - pot	 kadma	Equally there is little similarity between Torah and Haftarah cantillation – though it was not very hard to correct my first set of errors. Haftarah is generally lower in range.
עליהם	Mahpakh inverted	Under	6 th above the tonic עליהם  a - lei - hem	 a - lei - hem		
זעמי	Pashta extending	Over - post	ornament 0 1 זעמי  za - mi	 za - mi l	 pashta	
כל	Yetiv resting	Under - pre	6 th above the tonic כל  kol	 kol	Haik-Vantoura makes no distinction between yetiv and mahpakh. In the one example I see on page 637, Jacobson shows a yetiv with effectively no change of pitch, perhaps just an extension of the time on a note.	
חרון	Munah independent	Under	back to the 5 th חרון  cha - ron	 cha-ron	 mu-nah	

אֶפֶי	Zaqef qatan small upright	Over	ornament -1 0 אֶפֶי  a - pi	 a - pi	 zaqef	
כִּי	Yetiv resting	Under	again to the 6 th כִּי  ki	 ki	see above	
בְּאֵשׁ	Munah independent	Under	return to the 5 th בְּאֵשׁ  be - eish	 be - eish	 mu-nah	
קִנְאֹתִי	Zaqef qatan small upright	Over	ornament -1 0 קִנְאֹתִי  qin - a - ti	 qin - a - ti	 zaqef	
תֵּי אֶכֶיל	Tipeha handbreadth	Under	return to the raised third תֵּי אֶכֶיל  tei - a - keil	 tei - a - keil	 tipeha	
כֹּל הָאֶרֶץ	Siluk	Under	return home to the tonic כֹּל הָאֶרֶץ  kol ha - a - rets	 kol ha - a - retz	 siluk - either	Both these systems close the verse on the tonic.

Jacobson put together for this one verse is on the next page. It is a very different form of thinking. I doubt I have all the pieces quite right. There seems to be a possibility of a reciting note with the next phrase or word beginning where the previous accent leaves off. There is no concept of the predictable change in reciting note derived from the Vantoura method. I am less convinced by the tune – but that's just my bias at present. And if I have missed the boat, no wonder.

17
la - kein cha - ku li ne - um ado - nai le - yom qu - mi le -

21
ad ki mish - pa - ti le - e - sof go - yim le - qav -

24
tsi mam-la - kot lish-pot a - lei - hem za - mi kol cha-ron a - pi

28
ki be - eish qin - a - ti tei - a - keil kol ha - a - retz

Vantoura summarized so that the two can be compared. (Ignore the first note which is the final note of verse 7.)

57
8 לָכֵן תָּמַד לֵי יְהוָה לְיוֹם קוֹמִי לַעֲד
tam la - kein cha - ku li ne - um ado - nai le - yom qu - mi le - ad

62
כִּי מִשְׁפָּטִי לְאַסֹּף גּוֹיִם לְקַבְּצִי מִמְּלָכוֹת לְשַׁפֹּךְ עַל יְהוָה
ki mish - pa - ti le - e - sof go - yim le - qav - tsi mam - la - kot lish - pok a - lei -

63
הֵמ זָאֵם כּוֹל חַרֹּן אֶפֶי בְּאֵשׁ בִּי קִנְאָתִי תִּאָּכַל כָּל הָאָרֶץ
hem za - mi kol cha - ron a - pi ki be - eish qin - a - ti tei - a - keil kol ha - a - rets