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THE VOWELING OF "*i* TYPE" SEGOLATES IN TIBERIAN HEBREW

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T HE history of the development of *i* in segolate nouns, i.e., nouns of original base form **CiCC*, remains obscure. This paper presents a new attempt to understand the development of the vowel, resulting from continuing study of cases of apparent inconsistency in vowel or stress patterns in the Tiberian tradition of biblical Hebrew.[1]

1. Scholars disagree on the form which the normal linguistic processes should have produced. P. Joüon states that the *i* vowel should regularly have given rise to *sere*, as in *sēfɛr*.[2] H. Bauer and P. Leander argue that the *i* should have changed to *a* in all cases under Philippi's law but that this change has often been prevented.[3]

2. Even the identification of nouns of original form **CiCC* presents something of a problem. The following criteria are used here. If, in a segolate noun, the vowel following the first consonant is:

(a) *sere* where the syllable is open and stressed in context, as *sēfɛr*, Isa. 30:8,

(b) *sere* or *segol* where the syllable is open and stressed in pausal situations,[4] as *sēfɛr* (Jer. 30:2), *bɛṭaḥ* (Gen. 34:25),

(c) *ḥireq* or *segol* where the syllable is closed and unstressed, as before suffixes in *sifrî, nɛgdô*, then the original vowel is assumed to have been *i*.[5] However, only a few forms show all these characteristics, and it is possible that they do not always reflect original *i*. Problems are, under (a) (the syllable is open and stressed in context): short *i* has given rise to *segol* in many segolates, as *sɛdɛq*, and has almost always done so in segolate endings in longer nouns, as feminine singular *qal* participles; (b) (the syllable

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is open and stressed in pause): while the appearance of *ṣere* or *segol* (or *pataḥ*) in pausal situations indicates that the original vowel was *i*, it is clear that this vowel often gave rise to *qameṣ*, as is common in longer forms, as *yošbet* 2 Kings 4:13, *ʾokəlet* Isa. 30:27. It is sometimes suggested that *segol* in pause may reflect original *a*, as certainly does occur in the three books.[6] However, these few cases scarcely form an adequate basis for the argument that *a* ever gave rise to *segol* in pause under ordinary conditions in the twenty-one books; (c) (the syllable is closed and unstressed): some scholars argue that *ḥireq* in singular forms of these nouns before suffixes may reflect original *a*.[7] This is certainly possible where *qameṣ* appears in pause, but, as the following discussion shows, there is no particular reason to accept this as the general rule. Short *i* certainly gives rise to *pataḥ* before suffixes in longer forms, as *yoladtô* (Prov. 17:25).[8] This must also have occurred in two-syllable forms in which the second consonant is a guttural, but these are rarely if ever distinguishable from forms with original *a*.[9] The change to *a* appears also to have occurred in some other forms, either sporadically (as in examples below in §§ 3.2c, 3.3c, 3.5c, if their original vowel was indeed *i*) or consistently. In the latter case the reflex of original *i* would only differ from that of *a* in the pausal form if at all. However, this is a possible explanation for the voweling of *melek* (see § 7.4).

3.   Nouns identified by these criteria fall into groups characterized by the initial consonant of the noun and the vowel following it in the base form. In the following descriptions, the positions in which the different reflexes of the base vowel occur are indicated as in § 2 above:

(a) the syllable is open and stressed in contextual position; (b) the syllable is open and stressed in pausal position; (c) the syllable is closed and unstressed.[10]

3.1   After initial *ʾ* and *ʿ*, the reflex is (a) *ṣere*[11] and usually (b) *ṣere* (*qameṣ*), (c) *segol* (*ḥireq*).

(b) *ṣere* occurs in *ʾpr*, *ʿbr* PN, *ʿgl*, *ʿdn* PN place, *ʿdr* "flock," *ʿmq*, *ʿqb*, *ʿqr* PN, *ʿrb* "woof," *ʿšb*. *Qameṣ* occurs only in *ʿdr* PN, *ʿzr* PN (and in compound names).

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[6] See Joüon, *Grammaire*, §96Ac. Cases of *segol* in a pausal situation in the three books are *šqr*, Pss. 35:19, 120:2; *ʾrṣ*, Ps. 48:11, Prov. 30:21, all with *atnaḥ* with no preceding *ʿoleh we-yored* (also other cases in which this accent does precede, so that *atnaḥ* does not mark a pausal situation). These and other cases of contextual forms in pausal situations probably arise from differences between the form of reading tradition which gave rise to the voweling and that reflected by the accents. See E. Fernández-Tejero, ed., *Estudios Masoréticos*, Textos y Estudios "Cardinal Cisneros," vol. 33 (Madrid, 1983), pp. 37–38.

[7] See Bauer-Leander, §72d. There is no doubt that (as stated there) *ḥireq* in plural construct forms may reflect short *a*. In situation (c) *ḥireq* may even reflect short *u* in some cases (cf. Even-Shoshan, *New Concordance*, s.v. *ʾomer, boser, roba* "dust," *šoqet*). For this reason, words represented only by forms showing *i* in situation (c) are not included here.

[8] See Bauer-Leander, §771. In fact forms showing *ḥireq*, as *meniqtô* (2 Kings 11:2, 2 Chron. 22:11) are rare.

[9] Forms in which short *i* has given rise to *pataḥ* in context often also show *pataḥ* in pause, as commonly in *piʿel* or *hifʿil* perfect forms in the twenty-one books (as Judg. 14:16, 1 Sam. 17:45). The only nominal form noted which shows a possible example of this is *lqḥt* in 1 Kings 17:11.

[10] Homographs are identified by a conventional English equivalent or by PN (name of person or place). "*Ṣere* or *segol*" indicates that the two vowels are more or less equally common alternatives in a given position. "*Ṣere* (*segol*)" indicates that the former is much more common than the latter.

[11] *ʾbl, ʾbr, ʾlm, ʾpr, ʾsl, ʾsr, ʾšt, ʿbr* "side" and PN, *ʿgl, ʿdn* PN place and PN person, *ʿdr* "flock," PN person, PN place, *ʿzr* "help" and PN, *ʿmq, ʿpr, ʿqb, ʿqd, ʿqr* "offshoot" and PN, *ʿrb* "mixture" and "woof," *ʿrk, ʿšb, ʿšq, ʿšq.*

(c) *segol* occurs in *ʾbl, ʾṣl, ʿbr* "side," *ʿgl, ʿdr* "flock," *ʿzr* "help," *ʿrk*, and also in *ʾgly* Job 38:28. *Ḥireq* occurs in *ʾšt, ʿmq, ʿśb*.

3.2   After initial *ḥ* or *s*, the reflex is usually (a) *ṣere* (*segol*), (b) *ṣere* (*qameṣ*), (c) after *s*, *ḥireq*, after *ḥ*, *segol* (*ḥireq, pataḥ*).

(a) *Ṣere* occurs after *ḥ* in twenty-three nouns, after *s* in four.[12] *Segol* occurs in *ḥbl* "cord," *ḥ.dr, ḥld* "world." Both vowels occur in *sml* (*ṣere* in construct, *segol* elsewhere) and in *ḥlṣ* in some sources but not in L.

(b) *Ṣere* occurs in *ḥlq, ḥmt, ḥpṣ, ḥpr* PN city, *ḥqr, ḥrm* "devoted thing" and "net," and *spr*. *Qameṣ* occurs in *ḥdq, ḥdr, ḥld* "world," *ḥlṣ, str, sml*.

(c) *Segol* occurs in *ḥbl* "pain," *ḥṭ ʾ, ḥlb, ḥlq* "portion," *ḥpṣ, ḥrm* "devoted thing" and "net," and also *ḥld* "world." *Ḥireq* occurs in *ḥqr, ḥšq*, and *sbl, spr, str*. Both *segol* and *pataḥ* occur in *ḥbl* "cord," *ḥdr*, and *ḥlṣ*.

3.3   After initial *b, d, ṭ, q, l*, the reflex is (a) *segol*,[13] (b) *qameṣ* or *segol*, (c) *ḥireq* (*segol, pataḥ*).

(b) *Qameṣ* occurs after *b, d, ṭ*, except where the final consonant is *ʾ* or, in one case, *ḥ*.[14] *Segol* occurs in these cases, and also after *l* in *ldt* and *lqḥ*, and in *lkt* in six cases but not in three others, which show *qameṣ*.[15] After *q, qameṣ* occurs in *qbr, qsp, qšr, segol* in *qdm, qdš, qrb*.

(c) *Segol* occurs only in *lkt*. *Pataḥ* occurs in *ṭnʾ* (Deut. 28:5, 17) and *qdm* (Prov. 8:23). All other forms show *ḥireq* except *bgd* "treachery," *bṭḥ* "security," *dšʾ*, and *qdš*, which do not occur in this situation. Two forms in this group show the reflex in a stressed closed nonfinal syllable (before *he* directional), *segol* in *qdš, ṣere* in *qdm*.

3.4   After initial *g, p, ṣ*, and *r*, the reflex is usually (a) *segol* (*ṣere*), (b) *qameṣ* (*segol*), (c) *ḥireq*.

(a) *Segol* occurs after *g* in four nouns, after *p* in eleven, after *ṣ* in three, and after *r* in eight.[16] *Ṣere* occurs in *gzʿ* (Isa. 1:11), *gzl* (Ezek. 18:18, Qoh. 5:7), *pšr* (Qoh. 1:8), *ptḥ* "opening" (Ps. 119:130), and *rbṣ* (Isa. 65:10), all of which are construct. Both vowels occur in *ṣlʿ* (always construct): *segol* nine times, *ṣere* in 2 Sam. 16:13.

(b) *Qameṣ* occurs after *g* in *gšm* "rain," after *p* in *pgr, psl, pṣʿ, prḥ, prṣ, pšʿ, ptḥ* "doorway," also *pdr*, which does not occur in situation (a). *Segol* occurs in *gbʾ, plʾ*, and also after *ṣ* in *ṣdq, ṣmḥ*. After *r, qameṣ* occurs in *rkb*, and *ršt* both "net" and the infinitive, and in *hršʿ* (Qoh. 3:16). *Segol* occurs in *rdt* and *ršʿ* (thirteen cases without the article).[17] In Gen. 19:6, *ptḥ* "doorway" shows *segol* where the syllable is closed and stressed in pause.

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[12] *ḥbl* "pain" and PN, *ḥdq, ḥlb* "fat" and PN, *ḥld* PN, *ḥlm* PN, *ḥlp* "exchange" and PN, *ḥlq* "smoothness" "portion," and PN, *ḥmt, ḥpṣ, ḥpr* PN city, PN person, *ḥpś, ḥqr, ḥrm* "devoted thing" and "net," *ḥšb, ḥšq*, and also the monosyllable *ḥṭ ʾ, sbl, spl, spr, str*.

[13] *bgd* "garment," *bdq, bṭḥ* "security," *bṭn, bṣʿ, brk, dgl, dšʾ, dšn, ṭbḥ* "slaughter," *ṭnʾ, qbr, qdm, qdš, qrb, qsp, qšr, ldt, lkt, lqḥ*.

[14] Qameṣ in *bgd* "treachery" and "garment" *bdq, bṭn, bṣʿ, dšn, ṭbḥ* "slaughter"; also, in forms not found in situation (a), *blʿ*, and (if Even-Shoshan's homographs derive from the same original, as seems likely; cf. F. Brown, S. R. Driver, and C. A. Briggs, *A Hebrew and English Lexicon of the Old Testament* [1907; Oxford, 1968] [*BDB*]), *btr*. Segol occurs in

bṭḥ "security," *dšʾ, ṭnʾ*.

[15] *Segol* in Exod. 8:24; Judg. 19:5, 7; 1 Sam. 15:27; Ezek. 1:20; Ps. 78:10; *qameṣ* in Prov. 15:21, 30:29, Qoh. 1:7.

[16] *gbʾ, grš, gšm* "rain," *gšt, pgr, plʾ, plk*, "district," *psl, pṣʿ, prd, prḥ, prṣ* "breach," *prš* "excrement," *pšʿ, ptḥ* "doorway," *ṣdq, ṣmd, ṣmḥ, rbʿ* "quarter," *rdt, rkb, rsn* "halter," *ršʿ, ršp, ršt* "net" and the infinitive. Both Even-Shoshan and *BDB* treat *patḥ* "doorway" and *petaḥ* "opening" as independent, but they probably derive from a single original. If so, *ptḥ* should be classed as a form which shows both vowels.

[17] 1 Sam. 24:13, Isa. 58:4, Ezek. 7:11, Mic. 6:10, 11, Ps. 45:8, 84:11, Prov. 4:17, 8:7, 10:2, 12:3, 16:12, Job 34:8.

3.5   After other consonants the reflex is (a) *segol* or *ṣere*,[18] (b) *qameṣ* or *segol*, (c) *ḥireq* (*segol*, *pataḥ*).

(a) Where both *ṣere* and *segoi* occur in the same noun, *ṣere* is used where the noun is construct (as in the cases in § 3.4a), or closely joined to what follows for other reasons.[19] Most forms which show only *ṣere* occur only in such situations. The only significant exception is *šḥṭ*, which occurs at the end of a clause in Exod. 21:20, Prov. 23:13, but both clauses are closely related to what follows. Forms which show only *segol* occur in all positions, including construct, and *segol* alternates with *ṣere* in construct position in some forms.[20]

(b) *Segol* occurs after *k*, *m*, *t* (*klʾ*, *mlḥ*, *mlk*, *mšk* PN, *tbn*), *qameṣ* after *z*, *ś*, and usually *š* (*zbḥ* "sacrifice," *śkl*, and *šḥṭ*, *šbr* "breaking," *šbt*, *šlḥ* "weapon," *šmš*, *šql*, *šqr*, but *segol* occurs in *škm*). Further, *segol* occurs in *hpk*, *yšʿ*, *ytr* "remnant" and PN, *ngb*, *ngd*, *ndr*, *nsḥ*, *nšk*, *qameṣ* in *hbl* "vanity," *yqb*, *nbl* "musical instrument," *ngʿ*, *nsk*, *npl*, *nšp*, *nsq*, *nšr*, also *nṭʿ* which does not occur in situation (a).

(c) *Segol* occurs in *ngd* and *nkd*, *pataḥ* in *hpk* (Isa. 29:16) and *mlk*. *Segol* and *pataḥ* both occur in *hbl* "vanity," as do *ḥireq* and *pataḥ* in feminine forms of *kbś*. Other forms which occur in this position show *ḥireq*.[21] Where the syllable is closed and stressed, *segol* occurs in *ngb*.

4.   This analysis suggests that the initial consonant has a major influence on the development of the vowel in these forms. The opposing extremes are (a) *ʾ* and *ʿ* (which induce *ṣere* where the syllable is open and stressed in both pausal and contextual positions), and (b) *h*, *d*, and *ṭ* (which induce *segol* in such syllables in contextual position, *qameṣ* in pausal). The influence of the other consonants ranges between these extremes. The development of original *i* is similarly influenced by the preceding consonant under similar circumstances in other forms.

4.1   In 3 m.s. *hifʿil* perfect forms from geminate roots the original *i* gives rise to *pataḥ* after *d*, *q*, *m*, *r*, *ṣ*, *š*, *ṣere* after *h*, *ʿ*, *s*.[22] After *p* and *t*, *pataḥ* occurs in pause, *ṣere* in context.[23] Here, as in nouns of form *CiCC*, the minimal change (shift from a high to

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[18] *Segol* occurs in *hbl* "vanity," *zbḥ* "sacrifice," *yqb*, *ytr* "remnant," "bowstring," and PN, *kbs*, *klʾ*, *mks*, *mkr*, *mlḥ*, *mlk*, *mšk* PN, *mtg*, *ngb*, *ngd*, *ngʿ*, *nzm*, *nkd*, *nšk*, *nšp*, *nšr*, *šbʿ* "seven," *šbr* "grain," *šbt*, *škm*, *šlḥ* "weapon," *šmš*, *špʿ*, *šql*, *šqr*, *tbn*; *ṣere* occurs in *hlk*, *hlm*, *hpk*, *zkr*, *ysr* "form" and PN, *yšr*, *mzḥ*, *msḥ*, *nbl* "bottle," *nzq*, *nzr*, *nṭl*, *npl*, *nṣr*, *nth*, *šbt*, *šmʾ*, *šms*, *špl*, *ššt*, *tqʿ*, *tšʿ*, also the monosyllable *nrd* "nard"; both vowels occur in *yšʿ*, *ksl*, *nbl* "musical instrument," *ndr*, *nsk*, *nsḥ*, *nsq*, *śkl*, *šbr* "breaking," *štp*.

[19] The situations called here close-joined are, like pausal situations (see n. 4 above) impossible to define accurately. They are characterized by minimal as opposed to maximum change in vowel patterns (for example, by the use of pataḥ where *qameṣ* is also a possibility). In syntactical terms, the first of a pair of nouns joined by a conjunction, or a noun followed by an adjective or other modifier (see my article "Syntactic/Semantic Structure and Reflexes of Original Short *a* in Tiberian Pointing," *HAR* 5

[1981]: 88–90), or a verb followed by subject or modifier (ibid., p. 97) was usually closely joined in speech to what followed. However, semantic and rhythmic factors would determine whether or not this was done, as for *nesiga* (see Fernández-Tejero, ed., *Estudios masoréticos*, pp. 40–43). The nature and significance of close-joined situations is more fully developed in the papers referred to in n. 1 above.

[20] *ndr*, *nsk*, *šbr* "breaking." On the distribution of *segol* and *ṣere*, see further §6.4.

[21] No examples occur from *hlk*, *hlm*, *ysr* PN, *mzḥ*, *mlḥ*, *mšk* PN, *nbl* "musical instrument," *ngb*, *nzq*, *nṭl*, *npl*, *nṣr*, *nšk*, *nšq*, *nth*, *štp*, *šms*, *tbn*, *tqʿ*.

[22] *Pataḥ* in *dqq*, *qll*, *mrr*, *rkk*, *rʿʿ*, *ṣrr*, *šḥḥ*, *ṣere* in *ʿzz*, *ḥll*, *sbb*.

[23] *Pataḥ* in *prr* in Gen. 17:14, Num. 15:31, in *tzz* in Isa. 18:5. *Ṣere* in *prr* in Num. 30:9, Deut. 31:16, 20, Isa. 33:8, Ezek. 17:15, 16, *segol* (due to *nesiga*) in *tll* Gen. 31:7.

a mid-front vowel, "tonal lengthening") occurs after gutturals and *s*, the maximum change (shift to a central low vowel) after voiced stops and most other sounds, in pause if not in context.

4.2   In nouns of original form *$*CiC:$*, *i* gives rise to *patah* after *b, p, s*. The vowel is usually the same both in pause and elsewhere, but *qames* occurs in a few cases.[24] *Sere* occurs after *ḥ, ᶜ, k, n, s, t*.[25] *Sere* also usually occurs after *ʾ* (*ʾb, ʾm, ʾt* "with" and "tool" but *patah* in *ʾt*) and after *q* (*qs* and usually *qn*, but *patah* appears in *qn* in the construct in Deut. 22:6). Either vowel may appear after *g, m, ṣ: patah* in *gt* ("wine-press" and the city), *ms, ṣd; sere* in *gz, mṣ, ṣl*. Here the development is clearly somewhat different from nouns of form *$*CiCC$*.[26] However the minimal change ("tonal lengthen-ing") occurs again after gutturals (and also after most other sounds). The greatest change (shift to a low central or back vowel) occurs after voiced stops (although not always), after *m, ṣ, q*, and, surprisingly, even after *ʾ* and *s*.

4.3   Apocopated imperfect *qal* forms from roots III *h* originally formed doubly closed monosyllables as did nouns of form *$*CiCC$*. The initial consonant in these forms can only be *ʾ, y, n*, or *t*, but in a few cases these consonants do appear to affect the development of the following vowel in different ways. These forms also show instances where the development of the vowel is affected by the second or third consonant (i.e., the first or second consonant of the verbal root). The *i* of the prefix in these forms[27] gives rise to

qames in three cases in pause,[28] and also apparently in *wyšr* Hos. 12:5.

patah in roots I*h* and I *ᶜ*, and in the monosyllabic form *wyrʾ*.

sere in roots II *ʾ, h, ᶜ* (except for *šᶜh*); in most monosyllabic forms (from *bkh, nth, rdh, šth*, and also *wyz* Isa. 63:3); in forms from *klh, pnh*, and *rbh* in which the initial consonant is not *y*; and also in *yešel* (Job 27:8).

shewa in *hyh, ḥyh*.

hireq elsewhere, including monosyllabic forms from *yph, pth, šbh*, and also *wyz* 2 Kings 9:33, and in forms from *pnh* and *rbh* with initial *y*. The initial consonant clearly influences the development of the vowel in forms from *pnh* and *rbh*, and also *rʾh*. Evidently *y* allows the change to *a* but generally inhibits "tonic lengthening" while *t* allows tonic lengthening. Where the middle (first root) consonant is a guttural, the maximum change is induced (*patah, qames* sometimes in pause). Where the final (second root) consonant is a guttural, "tonic lengthing" is usually induced.

5.   Under Philippi's law, the *i* vowel of nouns of form *$*CiCC$* should have changed to *a*, as stated by Bauer and Leander. However such "laws" of change do not reflect sudden events but gradual processes, which are facilitated under some conditions and

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[24] *Bz, bt, pt, sp* (cf. *mwrg*). *Qames* appears in pause in *bz* Num. 31:32, *sp* Exod. 12:22 (and 2 Kings 25:18 in some sources but not in L). Elsewhere *patah* is shown in pause, as *bz* Isa. 33:23, *bt* Gen. 30:21, *sp* Judg. 19:27.

[25] *ḥk, ḥs, ḥt, ᶜz, ᶜt, kn* "base" and "gnat," *ns, ny, šn, šš, tl, tt*.

[26] No doubt largely due to the fact that the vowel is never in an open syllable. Cf. the difference be-tween the reflexes of original short *a* in nouns of form *$*CaC:$* (as *kp*) and *$*CaCC$* (as *ksp*). *Patah* is a

fairly common reflex of *i* in what is in MT a closed final syllable in a construct noun.

[27] The original prefix vowel of these forms may well have been *a*, but the change to *i* is of such long standing that the patterns shown by the reflexes are similar to those shown by reflexes of *i* elsewhere, even in pause, where the reflex may be *patah*.

[28] *hlh* 2 Kings 1:2, *ᶜlh* 2 Chron. 36:23 (the cases in Gen. 24:16, 1 Sam. 2:6, are presumably *hifʿil*), *ᶜšh* Job 23:13. *Patah* appears, for example, in *hrh* Gen. 16:4.

inhibited under others. The process described by Philippi's law began rather late in the history of biblical Hebrew and was never completed in some situations, among them some nouns of form $*CiCC$.[29] The above description shows that this process of change was facilitated in pausal position, and where the initial consonant was b, d, or $ṭ$ (§3.3), or, to a lesser extent, other voiced stops or emphatics, p, l, or r (§3.3, 4). It was also, no doubt, facilitated where the second consonant was a guttural (see §§2, 4.3). The process or change was inhibited where the first consonant was $ʾ$ or $ʿ$ (§3.1), or, to a lesser extent $ḥ$ or s (§3.2), and to some extent where the last consonant was $ʾ$ or $ḥ$ (§3.3b, cf. §4.3), and in construct or "close-joined" situations (§§3.2a, 3.4a, 3.5a). Besides Philippi's law, the development of i in nouns of form $*CiCC$ was also affected by the secondary opening of the doubly closed syllable. This also was a gradual process, which, like Philippi's law, took place more readily under some conditions than others, and was never fully completed in biblical Hebrew.[30] The term "open" in what follows implies that conditions were such that the vowel of the syllable in question was treated as were other vowels in open nonfinal stressed syllables. The term "closed" implies that this was not the case, regardless of whether or not some vowel was audible between the two last consonants of the word.

6. The actual development of the vowel in nouns of form $*CiCC$ can, then, be explained as follows.

6.1 Where the process of change was facilitated, i changed to a.

6.2 Where conditions for the change were particularly favorable, this a gave rise to qameṣ in pause, as does original short a. As far as the evidence goes, optimum conditions were provided by an initial stop, particularly if articulated at the front of the mouth or voiced, where the final consonant was not a guttural (§§3.3b, 3.4b, cf. 4.3). Qameṣ is also frequent after r, n, s, and $š$, but there is really too little information to determine what other factors, such as the character of the second or third consonants, may have had influence on the change.[31]

6.3 Where the change to a had occurred, the secondary opening of the syllable caused a change to segol in contextual situations, as occurred with original short a. The same development occurred in pausal position where the change to a had occurred,

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[29] For example, in feminine plural imperfect and imperative pi'el forms (see Bauer-Leander, §45k). The assertion there that the retention of ṣere is due to "analogy" is a possibility, but it is unlikely in view of the fact that these forms do not display an isolated exception to the general pattern of reflexes of short i, but a common variation within it. Ṣere is retained in an originally closed stressed syllable in the forms mentioned in §§4.1, 4.2, and a variety of other forms, e.g., wyrgdk (Deut. 32:7), wyśb (Ruth 4:1). It also appears to be true that vowel change tended to develop more slowly in f. pl. imperfect forms than in some others, as is shown by the fact that short a usually does not give rise to qameṣ in these forms in pause. Thus pataḥ occurs in Isa. 5:15, 66:14, Jer. 49:2, etc.; qameṣ has been noted only in tyšmnh (Ezek. 6:6). No doubt analogy did play a significant role in the development of Hebrew forms.

However, a statement that the voweling of a particular set of forms is due to analogy is also a statement that the information provided by those forms is excluded from the attempt to understand the history of the base vowel. Where this is the only available explanation of the fact that those forms show one of two common reflexes of the base vowel, but not that which is required by the theory presented, there is at least a good possibility that the theory is not correct.

[30] As in forms like nerd "nard" or the monosyllabic apocopated imperfect forms from roots III h referred to in §4.3.

[31] It seems that this change was more effective in longer nouns, since ṣere rarely appears in a segolate ending. (Cf. also the situation in nouns of form $*CiC:$, §4.2, and the fact that ʿzr regularly shows segol, not ṣere, in compounds).

but less favorable conditions had prevented the change to *qameṣ* up to the time when the development of distinctive pausal forms ceased (§§3.3b, 3.4b, 3.5b).[32]

6.4   Where conditions were particularly unfavorable for the change from *i* to *a*, this change did not occur before the syllable became open. This seems to occur chiefly with voiceless continuants, suggesting that, where it occurred, ʾ was not a stop, and ʿ was not voiced. When the opening occurred, the unchanged vowel gave rise to *ṣere*, as is usual with original short *i* in open stressed syllables. This has generally occurred even in pause in the forms listed in §§ 3.1 and 3.2. Elsewhere, the change to *a* had always taken place in pause before the opening of the syllable, so that *ṣere* occurs only in contextual situations. In fact, in many cases the change to *a* had occurred in these situations also, where the word was not closely related to what followed, so that *ṣere* is generally restricted to construct and other close-joined situations (§3.5a). However, the extent to which *ṣere* occurs differs in different words, and the information is not adequate to show the factors which condition such small details of usage. Examples are: in *šbr* "breaking," *ṣere* is used in some construct forms (Amos 6:6, Isa. 30:14), *segol* in others (Lev. 21:19, 19, and eight others). *Segol* is used in other absolute forms, *qameṣ* in pause (Prov. 17:19, Lam. 3:47). In *sml*, *ṣere* is used in construct situations (Ezek. 8:3, 5), *segol* in absolute (2 Chron. 33:7, 15), *qameṣ* in pause (Deut. 4:16). In *škl*, *ṣere* is used in construct forms, before an adjective, or in the first of a pair of nouns (Ps. 111:10, Prov. 3:4, 13:15, 16:22, 19:11, 23:9, 1 Chron. 22:12, 2 Chron. 2:11, 30:22; see n. 19 above). *Segol* is used at the end of a construct phrase (1 Sam. 25:3, Ezra 8:18) or of a clause (Neh. 8:8, 1 Chron. 26:14). *Qameṣ* is used in pause (Job 17:4). In *yšʿ*, *ṣere* is used within clauses, including construct situations (Hab. 3:13, 13, Ps. 12:6, 20:7, 50:23), *segol* at the ends of clauses, including pausal situations (Isa. 45:8, 61:10, Ps. 132:16, Job 5:4, 11). It is noteworthy that in these examples, the more limited use of *ṣere* correlates with use of *qameṣ* in pause and vice versa, showing that the decisive factor in the development of the voweling of these forms was the extent to which the change from *i* to *a* had taken place, which varied in each form.

7.   The voweling of these nouns in manuscripts with Babylonian pointing, which differs somewhat from that described above, can be briefly described as follows.[33]

7.1   In an open stressed syllable in context, *ṣere* occurs after initial *alef* in all six cases. With other gutturals, *ṣere* occurs after *he* in two of three cases, after *ḥet* in five of twelve cases, after *ʿayin* in six of sixteen cases (of which two others show both *ṣere* and *patah*). After other consonants, *ṣere* occurs only in *spr* and *tšʿ* (but not in *sbl*, *sml*, *spl*, *str*, *tbn*, *tqʿ*). Elsewhere, *patah* is used.[34] That is, *patah* occurs in the Babylonian

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[32] That it did cease is shown by the fact that pausal forms are not always used in pausal position, i.e., pausal or contextual forms were fixed according to one convention of reading and did not change when the convention changed. See my article, "Pausal Forms in Biblical Hebrew: Their Function, Origin, and Significance," *JSS* 25 (1980): 170.

[33] The basic information is given in I. Yeivin, *The Hebrew Language Tradition as Reflected in the Babylonian Vocalization* (Jerusalem, 1985), לד (pp. 808 ff.) I am most grateful to Professor Yeivin for providing me with a copy of this material before its publication. The Tiberian names are used there,

and here, for the Babylonian vowel signs. *Qameṣ*, *ṣere*, and *ḥireq* have a similar range of use in the two traditions. However, the Babylonian *patah* corresponds both to Tiberian *patah* and to most uses of *segol*. Only nouns already studied in the Tiberian tradition are considered here.

[34] This describes the standard forms. A few cases where *ṣere* is used in late and possibly Tiberianizing sources (*nsk*, *ṣlʿ*, *rbʿ*) are ignored, as are the few cases where these words show *o* or *u* in any of the three situations, a specifically Babylonian phenomenon.

pointing with all consonants which always or usually show *segol* in Tiberian (§§3.3, 3.4), with nearly all which sometimes show it (§3.5) and often occurs with those which rarely or never show it (§§3.1, 3.2). The use of *sere* is much restricted compared to the Tiberian.

7.2   In an open stressed syllable in pause, words which show Tiberian *sere* show Babylonian *sere* (*ḥqr*, *ᶜqr*), *pataḥ* (*ḥrm* "devoted thing," *ᶜdn* PN place, *ᶜśb*), or *qameṣ* (*ᶜdr* "flock," also possibly *ᶜqb*). Words which show Tiberian *segol* show Babylonian *pataḥ* (ten cases), *qameṣ* (*ytr*, *ngd*, *ršᶜ*, *tbn*), or both (*ndr*, *qrb*, *škm*), or, in one case, *sere* (*hpk*). Words which shown Tiberian *qameṣ* show Babylonian *qameṣ* (eighteen cases), *pataḥ* (*ḥdr*, *npl*), or both (*bṭn*, *dšn*, *psl*, *pšᶜ*, *rkb*, *ršt*, *šmš*). Thus the use of *sere* is somewhat restricted in this position also, but it appears that the use of *qameṣ* is somewhat less frequent than in Tiberian too.

7.3   Where the syllable is closed and unstressed, the most common vowel in the Babylonian pointing is *ḥireq*, which may follow any consonant. *Pataḥ* occurs sporadically, most commonly (in terms of the proportion of words showing it) with *mem* (*mks*, *mlk*, *mšḥ*, *mtg*, but not *mkr*), *qof* (*qbr*, *qsp*, but not *qrb*), *ᶜayin* (*ᶜśb*, *ᶜdr* "flock," *ᶜgl*, but not *ᶜbr* "side," *ᶜrk*), *bet* (*bgd*, *bṭn*, but not *blᶜ*, *bṣᶜ*, *brk*, *btr*), and *ḥet* (*ḥbl* "cord," *ḥdr*, but not *ḥlb*, *ḥld*, *ḥlq*, *ḥps*, *ḥrm* "net," *ḥbl* "pain").[35] That is, there is an irregular tendency for the vowel to shift from high front to low central position after a voiced labial or after velar or pharyngal sounds when followed by a voiced sound.

7.4   The Babylonian tradition is, then, to a large extent consistent with the Tiberian. However, the greatly restricted use of *sere* where the syllable is open and stressed in context appears to show that the change from *i* to *a* progressed farther in the Babylonian tradition before the syllable was opened than in the Tiberian. This is consonant with the fact that, in general, the change from *i* to *a* has occurred somewhat more extensively in the Babylonian tradition than in the Tiberian.[36] This fact can also explain the somewhat restricted use of *sere* in the Babylonian tradition in the open stressed syllable in pause. Where the Babylonian vowels do not correspond to the Tiberian, it appears that *b*, *d*, and *p* provide an environment less conducive to vowel change in the Babylonian tradition than in the Tiberian (where they were particularly significant; see §6.2), since they may be followed by Babylonian *pataḥ* where Tiberian *qameṣ* appears. So also *h*, which appears with Babylonian *sere* corresponding to Tiberian *segol*. Conversely, *y*, *ᶜ*, and *q* were more conducive to vowel change in the Babylonian tradition than in the Tiberian, as they may be followed by Babylonian *qameṣ* where Tiberian has *segol* or *sere*, or Babylonian *pataḥ* where Tiberian has *sere*. After *ḥ*, *n*, *r*, and *š*, vowel change is more advanced in some forms in each tradition, less so in others. Where the vowel occurred in a closed, unstressed syllable, the Babylonian use of *pataḥ* clearly has a basis different from that of the Tiberian use of *segol*, which usually appears after gutturals, sporadically elsewhere (or of *pataḥ*, which shows no pattern, see §§3.2, 3.3, 3.5). The most interesting phenomenon here is the common use of *pataḥ* after *mem*. This suggests the possibility that the Tiberian use of *pataḥ* in *mlk* in this position reflects a Babylonian form of tradition.[37]

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[35] *Pataḥ* also occurs in *pgr*, *šb*, *kbšh*, and (as in Tiberian) in *ṭn*. Note also that *ḥireq* occurs in the Babylonian tradition in this situation in a number of nouns (as *drk*, *ql*, *rgl*) which, in Tiberian, show no evidence that the base vowel was *i*.

[36] See Yeivin, *Hebrew Language Tradition*, p. 383.

[37] The other possibilities are that original *a* does in some cases give rise to *segol* in pause, or that the

7.5   The fact that the Babylonian forms do not differ greatly from the Tiberian presumably reflects the development common to the two traditions before they grew apart. The differences which do occur can reasonably be attributed to differing developments in the two traditions after they had grown apart. However, not only do the Babylonian forms provide no reason to question the development of the Tiberian forms suggested in §6, but they appear to support the argument that the different vowels used in situations (a) and (b) reflect the different rates at which the *i* to *a* change developed in different environments.

8.   Conclusions.

8.1   The development of *i* in nouns of form *$CiCC$ is conditioned by those forces which cause natural sound change. There is no need to invoke "analogy" to explain these changes. The factors which can be shown[38] to have conditioned the development are: the consonantal sounds which make up the word, particularly that preceding the vowel; the structure (open or closed) of the syllable containing the vowel; and the relation of the word to the surrounding context.

The demonstration of the extent and significance of the influence of this last factor is the most interesting and important result of this study. It shows that the conditioning forces which produce distinctive construct forms or pausal forms are no different from those which affect forms in other situations. The relevant conditioning factors (close-joining in speech of the word in question to what follows to indicate close syntactic/semantic relationship or its separation from what follows to indicate the absence of such relationship) have their maximum effect in construct and in pausal situations. Construct forms and pausal forms represent the extremes of development of any particular process of vowel change.[39] However, the developments which lead to these changes in construct or pausal situations also take place in other situations. Here also they are conditioned by the extent to which the word in question is joined to, or separated from, what follows, although they may not lead in these other situations to the same degree of change as they bring about in a construct form or in a pausal form.

8.2   The operation of this factor, the relation of the word to its context, appears to play the major role in determining the appearance of *sere* in groups 3.4 and 3.5 and of *segol* at least in *sml* in 3.2. The operation of this factor, and so the use of these vowels,

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pausal forms derive from a base *$milk$, and those with suffixes from a base *$malk$. The latter would seem the more likely.

[38] Other factors, which have left no identifiable trace in the text, may also have been at work. This includes the possibility that some inconsistency may have been caused by the introduction of forms which developed in different strands of the tradition. See Fernández-Tejero, ed., *Estudios Masoréticos*, p. 38.

[39] This conflicts with the view that where nouns ending -CVC in MT show different final vowels in absolute and construct states, the difference is due to the fact that the syllable was closed (due to the loss of the case ending) in the construct form earlier than in the absolute. Thus, recently, E. E. Knudsen, "The Mari Akkadian Shift *ia>ê* and the Treatment of ה"ל Formations in Biblical Hebrew," *JNES* 41 (1982): 37–38, quoting, among others, J. Blau, who

in "Non-Phonetic Conditioning of Sound Change and Biblical Hebrew," *HAR* 3 (1970): 13 applies the same argument to the final vowel of verb forms. This can, indeed, explain the reflexes of *a* in verb forms, and in most nouns (but not all; see again my article in *HAR* 5, p. 98). The argument would, however, require *patah* as the reflex of *i* (through Philippi's law) in the final syllable of construct nouns (where *sere* is at least equally frequent) and in verb forms (where *patah* is common only in originally closed syllables, and is far from consistent there). Consequently, it seems preferable to maintain my argument (ibid.) that whatever may have been the earlier history of these forms, the most important factor conditioning the MT reflexes of these vowels is that of "relation to context" as expressed through close-joining or separation in speech and possibly other suprasegmental features.

clearly depends on the situation of the word in the text as we have it. It has not become conventionalized so that the situations in which the two vowels are used are clearly distinct.[40] Consequently, it is highly likely that much of the development described here took place specifically in the biblical language, under the special conditions provided by the reading tradition and not necessarily in the language as a whole. This could possibly be true for the whole extent of the change, since the basis of it—the change from i to a—was a late development (§5 and n. 29 above). This has, of course, significant implications for the dating of the text and the reading tradition in the form in which we know it.

[40] A number of other variations are similarly not conventionalized, as the use of *patah* or *qames* in nouns of form *$*CaC:$ (see my article in *HAR* 5, pp. 84–91) and *nesiga* (see Fernández-Tejero, ed., *Estudios Masoréticos*, pp. 37–48).