The realization of the medial *hamza* as a semi-vowel [y] or [w] is also found in other dialects, such as the Jewish dialects of Algiers[[1]](#footnote-1) and Tunis,[[2]](#footnote-2) and also in various Mashriqi dialects.[[3]](#footnote-3) In the language reflected in the *šarḥ* of the Jews of Constantine we found very few examples of the realization of the [ˀ] as [w] in medial position.[[4]](#footnote-4) Cohen argues that the realization of/ˀ/ as [y] or [w] in words such as those presented above are not solely the product of a simple phonetic shift, but are also designed to meet the morphological needs of the dialect and to compensate for the lack of /\*ˀ/ in the various patterns.[[5]](#footnote-5)

[w] – a voiced bilabial semi-vowel. This realization of /ˀ/ is are in CJA. It is found regularly in the root √\*ˀr > √wxr in the *kəttəb* and *tkəttəb* forms: *yitwaxxəru* (יִסֹּ֣גוּ, Ps 40:15), *twaxxar* (תְּאַחַֽר, Ps 40:18). This root, in which the first root letter /\*ˀ/ is regularly realized as [w], is the only evidence we found in the corpus of the shift ˀ > w. The other roots with א as their first letter preserve the /ˀ/.[[6]](#footnote-6)

The realization [w] appeared in initial position in the words *wudn-īn* / *wudn-ayn* (אָ֭זְנַיִם, Ps 40:7) and *wudn-ək* (אָזְנְךָ֥, Ps 17:6).[[7]](#footnote-7)

[q] – a voiceless uvular plosive. As described above, /q/ is usually realized as [q] in CJA, and is only realized as [g] in a handful of words. The realization of the phoneme /q/ as [ˀ] was not found in the corpus. We did find a few examples of the realization of the phoneme /ˀ/ as [q] in CJA, but this realization is explicable as an attempt to pronounce the glottal plosive in an emphatic manner; it should also be noted that four of the six examples involve addresses to God.[[8]](#footnote-8)

In dialects in which the shift q > ˀ habitually occurs, the tendency is to explain the ˀ > q shift we see here by way of hypercorrection. However, since the [ˀ] realization of /q/ is not found in CJA, it is difficult to argue convincingly that the [q] realization of /ˀ/ is the product of hypercorrection. We should recall, however, that the [ˀ] realization of /q/ is among those found in Constantine Province;[[9]](#footnote-9) accordingly, it is possible that our informants are familiar with this realization from other speakers in the region. If this is the case, the hypercorrection theory is still plausible.

Examples of this realization include: *ṛ-ṛṣam qaḷ-ḷah* (חֹ֥ק יְֽהוָ֗ה, Ps 2:7), *štwīt qaḷ-ḷah* (štwīt qaḷ-ḷah, Ps 16:8), *qu-qāl* (וַיֹּאמַ֡ר, Ps 18:2). We might be tempted to regard the last example as an instance of assimilation to the second [q], but since the [ˀu] realization of the /u/ of the conjunctive particle is attested, the [q] here may also be a hypercorrective realization of the /ˀ/. When one of the rabbis read an excerpt from Rashi’s commentary on Chapter One (Zikhron Yaacov, p. 2) - מא תקולש עליה אסקללו אלא יתבאעד – he pronounced the word אלא as *qalla*.

There does not appear to be any conditioning for this realization.

The hypercorrective realization [q] of the *hamza* is documented in the traditional reading of the Mishna among the Jews of Aleppo.[[10]](#footnote-10) It is also attested among Arabic-speaking natives of Tiberias.[[11]](#footnote-11) Written documentation of this can be found more than 50 times in Hebrew and Arabic names in a manuscript that includes folktales written in Judeo-Arabic.[[12]](#footnote-12)

[h] – the realization of /ˀ/ as a glottal fricative is extremely rare, and may be accidental. We found it, for example, in hila (אֶת, Ps 2:3) and hin (כִּֽי, Ps 11:7).[[13]](#footnote-13) This realization is also found sometimes among the Jews of Algiers, for example in the word *əlhaṛḍ*.[[14]](#footnote-14)

To conclude, the phoneme /ˀ/ has a complex status in CJA. It is not as stable as other phonemes in the dialect and is often omitted, leaving behind only the vowel as its representative. However, it has not disappeared completely, and we even found instances when it was “recreated” in certain circumstances. By contrast, the original *hamza* has disappeared from most of the dialects of North Africa. In the Jewish dialect of Tunis the *hamza* has disappeared completely,[[15]](#footnote-15) while it has ceased to represent /\*ˀ/ in the Jewish dialect of Algiers.[[16]](#footnote-16) A similar situation is documented for the dialects of Tlemcen[[17]](#footnote-17) and Ouled Brahim.[[18]](#footnote-18) The original glottal plosive has also ceased to exist in various Moroccan dialects, while the [ˀ] represents the phoneme /q/.[[19]](#footnote-19) In the Judeo-Arabic dialect and Hebrew tradition of Djerba the phonemes /ˀ/ and /h/ have been unified.[[20]](#footnote-20) The original /ˀ/ has also disappeared from the dialect of Sousse.[[21]](#footnote-21)

The unstable status of the phoneme /ˀ/ in CJA is thus unremarkable given its diminished status in other dialects. However, we cannot ignore [ˀ], rare though its instances may be. As we have shown, the realization of [ˀ] may be explained by a combination of morphophonemic factors and the character of the language as more conservative than the colloquial.

/h/

The phoneme /h/ etymologically relates to the CA consonant \*h (ه). Its principal realization in the language of the *šarḥ* of the Jews of Constantine is:

[h] – a voiceless glottal fricative. This realization is common in initial and medial positions, and also in final positions, where it is pronounced carefully. Examples:

*hākdāk* (כֵ֥ן, Ps 1:4), *hābṭ-īn t-tṛāb* (יֽוֹרְדֵ֣י עָפָ֑ר, Ps 22:30), *fi hṛūb-u* (בְּ֝בָרְח֗וֹ, Ps 3:1), *nhāṛ* (יוֹמָ֑ם, Ps 13:3), *mən əd-dhab* (מִ֭זָּהָב, Ps 19:11), *u-nhəzzu* (וַ֝יִּתְגָּֽעֲשׁ֗וּ, Ps 18:8), *u-dāhəš-hum* ( וַיְהֻמֵּֽם, Ps 18:15),[[22]](#footnote-22) *l-məkṛūh* (נָ֝בָ֗ל, Ps 39:9), *kṛah* (שִׁקַּ֡ץ, Ps 22:25), *ilāh* (אֱ֭לוֹהַּ, Ps 18:32).

The realization of [h] is found in the clitic third-person masculine and feminine singular and masculine plural pronouns, as well as in the distal and proximal demonstrative pronouns, presentative conjunctions, and the third-person singular and plural clitic pronouns. The clitic masculine third-person pronoun is realized as [h] when it is suffixed to a word ending in a vowel,[[23]](#footnote-23) for example: *waqqəṛū-h* (כַּבְּד֑וּהוּ, Ps 22;24) and *šqā-h* (עֲמָל֣וֹ, Ps 7:17).

[ø] – we only found the omission of /h/ in two circumstances:

\* – the clitic possessive pronoun and accusative pronoun in the third-person masculine singular, when added to a word ending in a consonant, takes the form [u],[[24]](#footnote-24) for example: *tdəkṛ-u* (תִזְכְּרֶ֑נּוּ, Ps 8:5) and *ṭrāyq-u* (דְרָכָ֨ו, Ps 10:5). The [h] is regularly omitted in this category.

\* - when addressing God, the final *h* is usually realized, but in some instances it was not: *aḷ-ḷah* / *aḷ-ḷa*.

[ˀ] – a voiceless glottal plosive. This realization is uncommon, but appeared occasionally in the speech of two of the informants,[[25]](#footnote-25) alongside the realization of a glottal fricative in the same words: *ˀuwwa* (ה֣וּא, Ps 33:9) and *ˀawda* (הִנֵּ֥ה, Ps 7:15).

The phoneme /h/ has not disappeared from CJA and remains attested in the different settings. By contrast, this phoneme has disappeared from the Jewish dialect of Tunis and is only recognized as a potential realization in the awareness of some speakers. It is manifested in their dialect through the doubling of an adjacent consonant or the lengthening of the closest vowel. While the Jews of Constantine are careful to pronounce the *h* in verbs whose third root letter is *h* (*kṛah*), the Jews of Tunis conjugate these verbs as if their last root letter were ו or י (*kṛa*).[[26]](#footnote-26) Most of the Jews of Algiers do not realize the /h/ either, though some restore it in polished speech, imitating those dialects in which it has been preserved.[[27]](#footnote-27) The unification of the phonemes /ˀ/ and /h/ is particularly prominent in the Hebrew and Arabic speech of the Djerba community, where the unified phoneme is realized as [h], [ɦ] or [ˀ].[[28]](#footnote-28)

Thus, the relative stability of CJA is also reflected in its realization of the phoneme /h/. This is particularly notable given the weakening of this phoneme in other North African dialects. For example, even in the word for “face,” which tends to undergo changes in various dialects, CJA has maintained the [h]: *ˁla wuǧəh* (עַל־פְּנֵי, Ps 18:43), *uǧh-ək* (פָּנֶ֑יךָ, Ps 16:11).

The shift ˁ-h > ḥ-ḥ is found in CJA, as in many other dialects.[[29]](#footnote-29)

[2.3] The Semi-Vowels

The CJA semi-vowels /w/ and /y/ have their origins in the \*w (و) and \*y (ي) of CA respectively. They may also appear as realizations of /ˀ/ with the [y] much commoner than the [w] in this role.[[30]](#footnote-30) The phonemes /w/ and /y/ may function both as consonants and vowels, with conditioning as detailed below.

The consonantal aspect of /w/ is a voiced bilabial fricative [w], while its vocal aspect is a rounded high back vowel [u].[[31]](#footnote-31) The consonantal aspect of /y/ is a voiced palatal fricative [y], while its vocal aspect is an unrounded high front vowel [i].[[32]](#footnote-32)

The conditions for the realization of /w/ or /y/ as a consonant or a vowel are clear. When /w/ or /y/ appears adjacent to a vowel (whether before or after), it is realized as a consonant, but when they do not (i.e. when they appear between two consonants or in an initial/final position preceded/followed by a consonant), they are realized as vowels.[[33]](#footnote-33) Thus we find, for example:

*ulād* (בְּנֵ֥י, Ps 4:3) / *wəld-i* (בְּנִ֥י, Ps 2:7)

*l-uqāt dyāl-i* (עִתֹּתָ֑י, Ps 31:16) / *waqt* (עֵ֗ת, Ps 10:5)

*imīl* (יִמּֽוֹט, Ps 21:8) / *li-ymīl* (לִנְט֥וֹת, Ps 17:11)

The realization of /w/ and /y/ as vowels effectively creates a syllable that may be open or closed, depending on the circumstances in which it appears.

We give examples below of the validity of this clear conditioning of the realizations of /w/ and /y/ in various morphological categories:

a) Behavior of /w/ and /y/ in nouns:

Realization as [w] adjacent to a vowel: *wudn-īn* (אָ֭זְנַיִם, Ps 40:7), *wīdān* (נְ֝הָר֗וֹת, Ps 24:2), *u-d-əl-waqt* (וְ֭עַתָּה, Ps 2:10), *šwārəb* (שִׂפְתֵ֥י, Ps17:1), *swāqi* (פַּלְגֵ֫י, Ps 1:3), *l-xwān-i* (לְאֶחָ֑י, Ps 22:23), *b-ṭ-ṭaġw-a* (בְגֵאֽוּת, Ps 17:10), *ḍ-ḍaw* (א֨וֹר, Ps 4:7).

Realization as [y] adjacent to a vowel: *abyaḍ* (אַ֝שְׁרֵ֗י, Ps 2:12), *ˁudyān-i* (אֹֽיְבַ֣י, Ps 3:8), *b-əl-ˁāfy-a* (בְּשָׁל֣וֹם, Ps 4:9), *tyāb-i* (בְגָדַ֣י, Ps 22:19), *u-zyād-a* (וְע֣וֹד, Ps 37:10), *ḍyāṛ* (חֲצֵרִ֗ים, Ps 10:8), *ˁyāṭ-i* (שַׁוְעִ֗י, Pa 5:3), *yidd-ək* (יָֽדְךָ֨, Ps 17:14).[[34]](#footnote-34)

Realization as [u] when the [w] is not adjacent to a vowel: *uḥīda-t-i* (uḥīda-t-i, Ps 22:11), *uqāṛ-ək* (כְּבוֹדֶֽךָ, Ps 26:8), uṣāyət (פִּקּ֘וּדֵ֤י, Ps 19:9), f-əl-usaˁ (בַמֶּרְחָ֣ב, Ps 31:9), *li-l-urāt-a* (לְנַֽחֲלָ֣ה, Ps 33:12), *uˁāyd-i* (נְדָרַ֥י, Ps 22:26), *uǧīˁ-āt əl-mawt* (חֶבְלֵי־מָ֑וֶת, Ps 18:5), *uǧˁ-i* (נִגְעִ֣י, Ps 38:12), *uṛā-h* (אַֽחֲרָ֔יו, Dt 25:13).[[35]](#footnote-35)

Realization as [i] when there is no vowel adjacent to the [y]: *itīm* (יָ֝ת֗וֹם, Ps 10:14, 18), *mən imīn-i* מִֽ֝ימִינִ֗י, Ps 16:8), *ibəs* (יָ֘בֵ֤שׁ, Ps 22:16).

b) Behavior of the Conjunction ו:

The behavior of the conjunction ו correlates with the conditions presented above regarding the realizations of [w]. When it is attached to a word beginning with a consonant, it is realized as [u]: *u-smaˁ* (וּשְׁמַ֥ע, Ps 4:2), *u-rannən-u* (וְ֝הַרְנִ֗ינוּ, Ps 32:11), *u-ṭāḥ* (וַ֝יִּפֹּ֗ל, Ps 7:16), *u-ḥākəm* (וּ֝מֹשֵׁ֗ל, Ps 22:29), *u-tḍīˁu* (וְתֹ֬אבְדוּ, Ps 2:12), *u-ktāṛu* (וְרַבּ֖וּ, Ps 38:20), *u-ǧāˁu* (וְרָעֵ֑בוּ, Ps 34:11), *u-tṛəffaˁna* (וַנִּתְעוֹדָֽד, Ps 20:9), *u-ḥawz-at-ək* (וַ֝אֲחֻזָּֽתְךָ֗, Ps 20:8), *u-ǧmīˁ* (וְכָל, Ps 33:4).

When the conjunction is attached to a word beginning with a vowel, it is realized as [w]: *w-ana* (וַֽ֭אֲנִי, Ps 2:6), *w-ikūn* (וְֽהָיָ֗ה, Ps 1:3).

The realization [w] of the conjunction ו sometimes appears before words beginning with /ˁ/, /ḥ/ or /h/, though this is not a permanent feature. A possible explanation for this realization is that the pronunciation of these consonants is often accompanied by a short vowel.[[36]](#footnote-36) For example:

*wa-ˁṭēt* (וַתִּתֶּן, Ps 18:36), *wa-ˁla* (וְעַל, Ps 2:2), *wa-hbəṭ* (וַיֵּרַ֑ד, Ps 18:10), *wa-ḥatta* (וְגַם, Gen 24:46), *wa-ḥazzəmti-ni* (וַֽתְּאַזְּרֵ֥נִי, Ps 30:12), *wa-ḥna* (וַֽאֲנַ֓חְנוּ, Ps 20:8). But also: u-*ˁalləm-ni* (וְֽלַמְּדֵ֗נִי, Ps 25:5), *u-ḥazzəmti-ni* (וַתְּאַזְּרֵ֣נִי, Ps 18:40), *u-habṭət* (וַתּ֤וֹרֶד, Gen 24:46).

c) The validity of this condition is also evident from the morphology of the verb:

Plural suffixes are formed by adding /w/ to the singular, while applying the concomitant changes. When the singular form ends in a consonant – in the third-person masculine singular of the past tense and in the first-, second-, and third- person masculine singular of the future tense – the ending is realized as [u]: \*ktəb + /w/ > kətbu, \*nəktəb + /w/ > nkətbu, and similarly also *tkətbu*, *yikətbu*. But when the singular form ends in a vowel – in the second-person masculine and feminine of the past tense,[[37]](#footnote-37) the first-person plural ending will be realized as [w]: \*ktəbti + /w/ > ktəbtīw.

The plural particle also behaves in this manner when it is added to forms of verbs whose third root letter is ו or י that end in a vowel:[[38]](#footnote-38) \*mša + /w/ > mšāw, \*yizha + /w/ > yizhāw, \*nəṛmi + /w/ > nəṛmīw; and similarly: *yəṛmīw*, *təṛmīw*.

The initial morpheme of the third-person masculine singular in the future is [y] when it is followed by a vowel. For example, in Form I in roots with three whole consonants: the first-person *nəktəb* (I will write) and second-person masculine singular *təktəb* (you will write); similarly *yəktəb* (he will write). For example: *yiqtəl* (יַֽהֲרֹ֣ג, Ps 10:8), *yaˁməl* (יַֽעֲשֶׂ֣ה, Ps 1:3), *yiǧbəd-ni* (יַֽ֝מְשֵׁ֗נִי, Ps 18:17). However, when the [y] is followed by a consonant, it is realized as [i].[[39]](#footnote-39) Thus, for example, in Form I of verbs with the middle root letter ו or י: the first-person singular *nmīl* (אֶמּ֥וֹט, Ps 30:7), and the third-person masculine singular *imīl* (יִמּֽוֹט, Ps 21:8). However, even in this environment a remnant of the [y] may sometimes be heard.[[40]](#footnote-40) In infinitive forms comprised of *li* added to the third-person masculine future form, this /y/ is realized as [y] since it appears adjacent to a vowel:, for example, *li-ymīl* (לִנְט֥וֹת, Ps 17:11).

This condition is also manifested in various root types:

\* - in verbs whose first root letter is ו,[[41]](#footnote-41) the conditioning described above is usually realized, with a small number of exceptions:

The past tense of Form I: before a vowel – *wəqfət* (עָֽמְדָ֣ה, Ps 26:12), *wəssˁu* (הִרְחִ֑יבוּ, Ps 25:17); without an adjacent vowel – *uqəf* (עָמָ֑ד, Ps 1:1). An example that emphasizes the applicability of the phonetic conditioning is: *ma-wqəf-š* (ibid., as performed by another informant). Similarly, in the plural: *tuwǧəd* (תִּמְצָֽא, Ps 10:15; 17:3) and u-yuwləd (וְיָ֣לַד, Ps 7:15).[[42]](#footnote-42)

In the verb forms *kəttəb*, *tkəttəb*, *kāteb*,[[43]](#footnote-43) the first root letter, /w/, appears adjacent to a vowel and is always realized as a consonant accordingly (the /y/ also probably behaves in this manner, though no examples were attested in the corpus): *waqqəft* (הֶֽעֱמַ֪דְתָּה, Ps 30:8), *nwəkkəl* (אַפְקִ֪יד, Ps 31:6), *waqqəṛū-h* (כַּבְּד֑וּהוּ, Ps 22:24), *wāǧəb-ni* (עֲנֵ֤נִי, Ps 4:2), *yitwəǧǧaˁ* (יִדְכֶּ֥ה, Ps 10:10), *yitwaqqfu* (יִתְיַצְּב֣וּ, Ps 5:6). Thus the /w/ is acts as a consonant here and, when it is preceded by the conjunction ו, the latter will accordingly be realized as [u], for example: *u-waqqəfti-ni* (וַתַּצִּיבֵ֖נִי, Ps 41:13).

\* In verbs whose middle root letter is ו or י, where the second root consonant is /w/ or /y/, in the verbal forms *kǝttǝb*, *tkǝttǝb*, *smān*, *kātǝb*, and *tkātǝb*, the /w/ or /y/ is adjacent to a vowel, and accordingly is realized as [w] or [y];[[44]](#footnote-44) its doubled appearance in the relevant verbal forms is consistent with the analogous morphological pattern for verbs with three whole root letters: *diyyaˁt* [לבדוק אם ḍ?] (אִבַּ֣דְתָּ, Ps 9:6), *ˁayyṭu* (זָֽעֲק֣וּ, Ps 22:6), *u-duwwəbt* (וַתֶּ֣מֶס, Ps 39:12), *nzuwwəl* (אָסִ֥יר, Ps 18:23), *nbāyəˁ* (אֶשְׁתַּֽחֲוֶ֥ה, Ps 5:8), *ṣāwəb* (כּוֹנֵ֥ן, Ps 40:3), *ḍyāq* (יָֽצַר, I Kgs 8:37), *tˁāwən* (עוֹזֵֽר, Ps 10:14), *yitˁāwəd* (יְסֻפַּ֖ר, Ps 22:31), *utquwwəna* (וַנִּתְעוֹדָֽד, Ps 20:9), *nətġəyyar* (אֶ֝דְאַ֗ג, Ps 38:19).

d) When /w/ or /y/ appears adjacent to the equivalent vowel [u] or [i], we find the following:

The combination /uw/ may be preserved - *\*tǝwğǝd* > *tuwğǝd* (like *tǝktǝb*), or may contract to the vowel [u]: *\*tǝwğǝd* > *tūğǝd* (e.g.: תִּמְצָֽא, Ps 10:15, 17:3).

The combination /iyy/, where a short [i] appears due to the assimilation of the vowel /ǝ/ to the following doubled semi-vowel, may be realized a [īy]:[[45]](#footnote-45) *\*ətkiyysu* > *ətkīysu* (הַשְׂכִּ֑ילוּ, Ps 2:10).

E) When /w/ and /y/ appear alongside each other, both cannot be maintained as vowels and one becomes a consonant. This produces various combinations typified by the following tendencies:

In future tense forms in the verb form *ktǝb* and in the third-person masculine singular in the verb form *kǝttǝb* of verbs whose first root letter is ו, the combination /yw/ is realized as [iw]: *iwaṣlu* (יַגִּֽיעוּ, Ps 32:6), *iwuǧǧaˁ* (יָחִ֣יל, Ps 29:8), similarly to verbs with three whole root letters.

When the conjunction /w/ is added to a third-person masculine singular verb form beginning with /y/, the conjunction will usually be realized as [u]: *u-yaˁfəs* (וְיִרְמֹ֣ס, Ps 7:6) and *u-yilḥaq* (וְיַשֵּׂ֗ג, Ps 7:6). However, when the initial morpheme of the third-person masculine singular future form is realized as [i] due to the absence of an adjacent vowel, the conjunction /w/ will usually be realized as [w]. Thus, for example: *w-ikūn* (וִ֘יהִ֤י, Psw 9:10), *w-iḍīˁ* (וְאָבַ֥ד, Ps 41:6), *w-ixallīw* (וְהִנִּ֥יחוּ, Ps 17:14), and *w-istˁāru* (וְיַחְפְּר֑וּ, Ps 35:4). However, since the form *u-yṭīḥ* (וְנָפַ֥ל, Ps 10:10) occurred, we cannot claim that this an absolute tendency.[[46]](#footnote-46)

Chapter Four discusses /w/ and /y/ as key elements of diphthongsbut we note here that the principal CJA diphthongs found are aw, āw, īw, uw, ay, āy, iy, and īy.

We now describe the other realizations of /y/ and /w/:

\* – realizations of /y/:

[ˀ] – a glottal plosive. When /y/ appears at the beginning of a word before a consonant (an environment in which the realization [i] would be expected), or before the vowel *i* (when we would expect the realization [yi]), the realization [ˀi] is sometimes found. In some instances, the realization of the [y] as [ˀ] occurs in similar circumstances to those in which the realization [ˀ] of /ˀ/ occurs: at the beginning of a verse or word when the previous word ends in a vowel.[[47]](#footnote-47) Examples:

*ˀimūt* (יָ֝מ֗וּת, Ps 41:6), *ˀibəs* (יָ֘בֵ֤שׁ, Ps 22:16), *ˀiṭīḥu* (יִפְּלוּ֮, Ps 5:11), *ˀinfəx* (יָפִ֥יחַ, Ps 10:5), *mən ˀimīn-i* (מִֽ֝ימִינִ֗י, Ps 16:8), *ˀikṣṣəṛ* (פֹּ֝רֵ֗ק, Ps 7:3).

With conditioning similar to that described above, the realization [ˀ] of י is found at the beginning of a word in the Hebrew tradition and Arabic dialect of the Jews of Djerba. The pronunciation of י with a *ḥiriq* as [ˀi] is also found in other Hebrew traditions in North Africa, and, to a limited extent, among the Jews of Italy and the Balkans, Sephardi Jews in Turkey, and the Jews of Kurdistan.[[48]](#footnote-48)

\* - realizations of /w/:

The realization of /w/ as an emphatic voiced bilabial fricative, [ẉ], may appear in an emphatic environment, although even there it is uncommon. For example: *mən ṛəbẉāt* (מֵֽרִבְב֥וֹת, Ps 3:7) and *fi tabẉīq* (בִּתְרוּעָֽה, Ps 33:3). Cantineau documents an emphatic realization of the /w/ in the dialect of Palmyra, in northern Arabian nomadic dialects, and in Huran,[[49]](#footnote-49) while Blanc mentions it occurring in the Druze dialects of the Western Galilee and Mt. Carmel.[[50]](#footnote-50)

To sum up: clear conditions exist in CJA determining the appearance of the various realizations of the semi-vowels /w/ and /y/, each of which has two conditional allophones in complementary distribution. We might alternatively analyze it as a super-phoneme //u-w//, comprising two distinct phonemes /u/ and /w/ that maintain an allophonic relationship,[[51]](#footnote-52) but, it would be difficult to unify the [u] accruing from realizations of [w] with the appropriate vocal phoneme in CJA. This is because CJA does not have a phonemic short *u* vowel – the short vowels are neutralized to /ǝ/)[[52]](#footnote-53)— and the [u] realization of /w/ is not as long as the realizations of the vocal phoneme /ū/.[[53]](#footnote-54) Accordingly, we prefer to regard [w] and [u] as conditional allophones of the phoneme /w/ rather than as conditional phonemes of the super-phoneme //u-w//. Similarly, we prefer to regard the [u] in the word *uqāṛ* (“honor”) as a conditioned realization of the consonantal phoneme /w/ rather than of the vocal phoneme /ū/. Similar arguments may be put regarding [i] and [y] as conditional allophones of the phoneme /y/.

[2.4] Emphatic Spread

[2.4.1] Clarification of the Term “Emphasis”

Before discussing emphatic consonants reflect in the *šarḥ* of the Jews of Constantine, we present an explanation of this term. “Emphasis” as a term in linguistics indicates a certain point of articulation by way of a secondary articulation to certain consonants and distinguishing between these and their equivalents pronounced without this secondary articulation. Accordingly, emphasis is a phonemic property. However, in some languages and in certain circumstances, emphasis may accompany other phones without creating a phonemic distinction between these and their equivalents pronounced without emphasis.

Two principal theories have been posited on the phonetic realization of emphasis in Arabic (as in Hebrew).[[54]](#footnote-55)

The first, adhered to by most scholars, regards emphasis as a secondary articulation that occurs during velarization, and describes the pronunciation of a velarized phone as the retraction of the tongue to the rear while raising the back of the tongue toward the velum. This theory first emerged in Sibawayh’s *Al-Kitāb*, and is supported by Bergstrasser, Girdner, Gravel, Morag, Ferguson, Rabin, and others.[[55]](#footnote-56)

The second explains emphasis as “pharyngealization,” constriction of the pharynx. According to this theory, this secondary articulation occurs through the movement of the epiglottis toward the rear pharynx. Over the years a minority of scholars have supported this theory in its various forms, including Valin, Brockelmann, Tur-Sinai, Marcy, Jacobson,[[56]](#footnote-57) and Hockett.[[57]](#footnote-58) In recent years, this approach has gained support due to the accumulation of experimental data supporting this theory, as identified, for example, by Obrecht, Elani, and Gazali. This explanation is also supported by Laufer’s recent experiments using a network of optical fibers which showed that the secondary articulation accompanying the emphatic consonants in Hebrew and Arabic occurs in the pharynx, not the palate.[[58]](#footnote-59)

Since I did not have the necessary experimental tools to examine the phonetic character of this secondary articulation among the speakers I recorded, I prefer to adhere here to the linguistic term “emphatic” without determining whether this secondary articulation is pharyngeal or palatal.

The previous sections of this book included discussion of each of the emphatic consonants according to its point of articulation. We shall now summarize emphasis in CJA as a holistic phenomenon, including the inventory of emphatic consonants pronounced by the informants and an attempt to identify tendencies in terms of their behavior.[[59]](#footnote-60)

Sibawayh lists four consonants he refers to as مطبقة: ص, ض, ط, and ظ. These four consonants, together with ق, خ, غ, and, in certain conditions, ر and ل, are known as مفخمة.[[60]](#footnote-61) These and several other consonants will be discussed below according to their behavior in CJA in the context of emphasis.[[61]](#footnote-62)

[2.4.2] “Classic” Emphatic Consonants

The “classic” emphatic consonants – /ṭ/, /ḍ/, and /ṣ/ (where *ḍ* unifies \*ḍ and \*ᵭ̱)[[62]](#footnote-63) – correlate with three phonemes – /t/, /d/, and /s/ – with identical points of articulation but without the secondary articulation. These are phoneme pairs distinguishing only by the presence or absence of emphasis: /ṭ/ – /t/, /ḍ/ – /d/, and /ṣ/ – /s/.

These three emphatic phonemes are extremely “strong,” both in terms of their emphatic pronunciation, which is maintained throughout conjugation and declension without environmental condition, and in terms of their ability to impose emphasis on adjacent consonants and vowels.[[63]](#footnote-64) To this trio we may add the /ṛ/, despite the fact that its phonemic status vis-à-vis its unemphatic correlative /r/ is less clear than for the phonemes mentioned above,[[64]](#footnote-66) since its behavior as an emphatic consonant integrates broadly with that of the consonant group /ṭ ḍ ṣ/.

Heath notes that various Arabic dialects are distinguished from each other by means of the behavior of the consonant series /t d s r/ and /ṭ ḍ ṣ ṛ/. In some dialects, these series function in a harmonious manner so that a representative of one series will not appear alongside a representative of the other series within the same root. By contrast, emphasis is limited in other dialects to a single consonant in the root, as is characteristic of CA. This is true, for example, of Mauritanian Arabic and Palestinian Arabic as described by Card.[[65]](#footnote-67) CJA – like the Moroccan dialects of Fez and Meknes, as described by Heath –falls into the former group of dialects. In other words, in a root including one of the phonemes /ṭ ḍ ṣ ṛ/ alongside one of the phonemes from the series /t d s r/, the non-emphatic phoneme usually changes into its emphatic correlative. In synchronic terms, the “new” emphatic realizations can be analyzed as belonging to the “veteran” emphatic phonemes. Examples of this process include:

*əl-ˀaṛḍ* (אָֽרֶץ, Ps 2:8), *ṛṣam* (חֹ֥ק, Ps 2:7), *yimṭəṛ* (יַמְטֵ֥ר, Ps 11:6), *əṣ-ṣulṭān* (הַ֝מֶּ֗לֶךְ, Ps 20:10), *u-ṭāṛ* (וַיָּעֹ֑ף, Ps 18:11), *ġəṭṣu* (טָֽבְע֣וּ, Ps 9:16), *u-bṣəṭ* (וַיֵּ֣ט, Ps 18:10), *u-ṛāḍˁ-īn* (וְֽיֹנְקִים֮, Ps 8:3), *kīf əl-ˁṛūṣ* (כְּ֭חָתָן, Ps 19:6).[[66]](#footnote-68)

However, we found that the four different non-emphatic consonants tend not to integrate in this process of harmonization in an equal manner. This is particularly true of /t/, which may appear alongside an emphatic consonant without acquiring emphasis;[[67]](#footnote-69) for example, in the word *li-t-tṛāb* (לֶֽעָפָ֖ר, Ps 7:6), the /t/ does not acquire emphasis despite the adjacent /ṛ/.

The harmonic character of emphatic spread is usually confined to a word’s root letters and does not extend to affixes. Accordingly, the *t* – the only consonant in the group /t d s r/ that functions as an affix – does not usually acquire emphasis, even when it is adjacent to an emphatic consonant.[[68]](#footnote-70) However, some rabbis sometimes pronounced several verb forms with an affix /t/ as [ṭ] under the influence of an emphatic root letter: *ṭṭiyyəḥ* (תַּשְׁפִּֽיל, Ps 18:28; תַּכְרִ֖יעַ, Ps 18:40), *uṣṣīṭ* (צִוִּֽיתָ, Ps 7:7), *ˁayyaṭṭ* (שִׁוַּ֥עְתִּי, Ps 30:3).[[69]](#footnote-71)

Thus, /t/ is the most “resistant” of the four consonants mentioned to the environmental acquisition of emphasis. A possible explanation is that common pronunciation of this consonant with a secondary point of articulation – [tš], [ts] or [ty] –simultaneously prevents it from acquiring emphasis.[[70]](#footnote-72) However, this explanation could be challenged by suggesting that as a consonant which in CJA tends readily to accept various secondary articulations, there is no reason why /t/ should be so “opposed” to this particular articulation, particularly when it stands adjacent to a consonant accompanied by the same point of articulation.

To conclude for now, when one of the four emphatic consonants /ṭ ḍ ṣ ṛ/ appears in the same word alongside one or more of their non-emphatic equivalents, the former causes emphasis in the latter due to the tendency to harmony within the word. However, differences can be seen in the extent to which this phenomenon occurs across these four consonants, /t/ being the most likely of them to “resist” emphasis.[[71]](#footnote-73) This is notable since its emphatic equivalent, /ṭ/, has a powerful ability to cause emphasis in other phones. As we will see below, differences in the extent to which these four phonemes acquire emphasis are also found when they appear adjacent to /q/ and /ḥ/: /r s/ become emphatic, whereas /t d/ do not acquire emphasis in this instance.[[72]](#footnote-74)

Thus far we have described the interaction between the four stable emphatic consonants and their non-emphatic correlatives. We will now discuss the impact of /ṭ ḍ ṣ ṛ/ on other consonants in the same word.

The ability of the four stable emphatic consonants to cause emphasis in the consonants /b w m n f l z/, when these appear in the same word, is strong.[[73]](#footnote-76) In many cases, the emphasis spreads to the entire word and occasionally even beyond, for example: *f̣i ḍ-ḍayq-a* (בַּצָּרָֽה, Ps 9:10), *f̣i ḍ-ḍəḷṃ-a* (בְּצֶ֤לֶם, Ps 39:7), *ṃəṇ əḍ-ḍaw* (מִנֹּ֗גַהּ, Ps 18:13), *ṃəṇ ḍ-ḍāḷəṃ* (מֵֽרָשָׁ֥ע, Ps 17:13).[[74]](#footnote-77)

The influence of the emphatic phoneme on the entire word may be both from left to right and vice versa in more of less equal degrees.[[75]](#footnote-78) Examples of emphatic spread from left to right:[[76]](#footnote-79) ṭḷəḅt (שָׁאַ֣לְתִּי, Ps 27:4), iṭaṃṃaˁ (וּבֹצֵ֥עַ, Ps 10:3), ḍāḷəṃ (רָשָׁ֑ע, Ps 9:17), ṣaf̣f̣i (צָרְפָ֖ה, Ps 26:2), ṃəṇ ṛəḅẉ-āt (מֵֽרִבְב֥וֹת, Ps 3:7), iṣaḷḷi (יִתְפַּלֵּ֬ל, Ps 32:6), etc.

Examples of emphatic spread from right to left: *l-əl-ṃakṣūṛ* (לַדָּ֑ךְ, Ps 9:10), *u-ḅṣəṭ* (וַיֵּ֣ט, Ps 18:10), *yiṛəṃṃəḍ* (יְדַשְּׁנֶ֣ה, Ps 20:4), *ṣuḷṭāṇ* (מֶ֣לֶךְ, Ps 24:9), *ṇxəḷḷaṣ* (אֲ֝שַׁלֵּ֗ם, Ps 22:26), *yiṇṭaq* (יַבִּ֣יעַֽ, Ps 19:3), *ḍǝḅḅaṛ ˁliya* (יְעָצָ֑נִי, Ps 16:7), *f̣əḍḍ-a* (כֶּ֣סֶף, Ps 12:7).

When the original emphatic phoneme is located in the middle of the world, its influence may apply in both directions; for example: yiṃṭəṛ (יַמְטֵ֥ר, Ps 11:6), ṇṣaf̣f̣əf̣ (אֶֽעֱרָךְ, Ps 5:4), ṃəṇ ḍ-ḍāḷəṃ (מֵֽרָשָׁ֥ע, Ps 17:13), ṛəṭṭəḅ (הֶחֱלִ֣יק, Ps 36:6), titf̣əḍḍəḷ (תִּתְחַסָּ֑ד, Ps 18:26).

We did not identify any consonants that block emphatic spread. The /y/ is mentioned in this capacity in various dialects, but does not prevent emphatic spread in CJA, for example: *ḍyāṛ* (חֲצֵרִ֗ים, Ps 10:8).

The phonemes /ṭ ḍ ṣ ṛ/ may influence not only the other consonants in the word but also their adjacent vowels. The short vowel /ǝ/ often acquires a more back pronunciation and even becomes a back [å] under the influence of these emphatic phonemes. Even a long /ā/ acquires a back pronunciation adjacent to these consonants, while the high long vowels /ī/ and /ū/ are lowered in their vicinity to [ɪ] and [-[ọ/ų] [לבדוק את הסימנים], respectively, for example: *ġåṭṣu* (טָֽבְע֣וּ, Ps 9:16), *ṇḍåṛt* (רָ֭אִיתָ, Ps 31:8), *ḍā̊ḷəṃ* (רָשָׁ֥ע, Ps 10:13), *əṇḍųṛ* (רְאֵ֣ה, Ps 9:14), *xṭēt* (חָטָ֥אתִי, Ps 41:5).

It is important to note the considerable “strength” of the /ṛ/ manifested, as the above examples show, in its ability to cause emphatic spread throughout an entire word, influencing both consonants and vowels. This explains why we discuss the /ṛ/ here together with the three original emphatic phonemes /ṭ ḍ ṣ/. The /ṛ/ behaves in the same manner in the Moroccan dialect of Fez-Meknes, as described by Heath. By contrast, the strength of /ṛ/ in some of the Tunisian dialects and in many Mashriqi dialects is relatively limited and localized.[[77]](#footnote-80)

[2.4.3] Secondary Emphatic Consonants

Thus far we have discussed the stable emphatic consonants which, with the exception of /ṛ/, are “inherently emphatic.”[[78]](#footnote-81) We will now discuss the secondary emphatic consonants, ones that may acquire emphasis in the vicinity of the classic emphatics (and in some instances in the vicinity of back consonants, as we shall see below) but whose emphatic quality is not permanent. Accordingly, these have the status of conditioned allophones in CJA rather than independent phonemes.

A realization of /z/ as [ẓ] may acquire its emphatic quality from /ṭ ḍ ṣ ṛ/ or from the back consonants /ḥ q ġ/, where these appear in the same root. In this respect, its behavior is similar to that of /r/ and /s/, which acquire emphasis in similar conditions. Unlike /r/ and /s/, however, [ẓ] does not have phonemic status. Examples of the emphatic realization of /z/ include *nəẓḷaq* (אֶמְעָֽד, Ps 26:1) and *ẓaḷṭu* (רָשׁ֣וּ, Ps 34:11).

[ẓ] may influence the adjacent vowel, so that /ǝ/ may be realized as [a], for example: *ẓaḷqu* (מָֽ֝עֲד֗וּ, Ps 18:37). As a secondary emphatic consonant, [ẓ] cannot cause emphasis in other consonants, though it assists in emphatic spread as, for example, in *u-ḥaẓẓəṃti-ni* (וַתְּאַזְּרֵ֣נִי, Ps 18:40).[[79]](#footnote-82)

We will discuss the consonants /b m f w n l/ as a single group due to their similar behavior regarding emphasis. These consonants acquire emphasis from the consonants /ṭ ḍ ṣ ṛ/, for example: yiṇṭaq (יֶהְגֶּ֗ה, Ps 1:2), mkəḅḅaṛ (מַגְדִּל֮, Ps 18:51), *əḍ-ḍəḷṃ* (חָ֝מָ֗ס, Ps 18:49), *ṭḷəḅti* (שָׁאָֽלְתָּ, Ps 40:7), *ḥāf̣əḍ* (נֹצֵ֣ר, Ps 31:24), *u-hḅəṭ* (וַיֵּרַ֑ד, Ps 18:10), *ġəḷṭ-āt* (שְׁגִיא֥וֹת, Ps 19:13), and *ṃəṇ ṛəḅẉ-āt* (מֵֽרִבְב֥וֹת, Ps 3:7). Emphasis is also acquired when these consonants appear between two back consonants; most of the examples of this come from the root √ḥmq: *ḥaṃṃaq* (נִאֵ֖ץ, Ps 10:13), *ḥṃəqt* (גָּעַ֣רְתָּ, Ps 9:6), *ḥṃəq* (פְּנֵ֣י, Ps 34:17), *xāḷq-i* (צוּרִי֮, Ps 28:1). In some cases, emphasis is acquired in the vicinity of /q/ alone, for example: *ṇqalˁu* (נְֽ֭נַתְּקָה, Ps 2:3).

These are secondary emphatic consonants and their status in CJA is of allophones that occur only in an emphatic environment. Most of them (n, f, m, b, l) are almost always emphatic in such environments, although there are a small number of exceptions.

/l/ /b/ and /m/ may be realized as [ḷ], [ḅ], and [ṃ] respectively, even in words that do not include any emphatic consonant, due to emotional factors. Such realizations occur regularly in the divine name *aḷ-ḷah*, as well as in the parental names *ḅāḅa* and *ūṃṃi* (אָבִ֣י וְאִמִּ֣י, Ps 27:10).

The consonants /b m f w n l/ are “passive” in the sense that, while they may acquire emphasis, they cannot cause emphasis in other consonants. However, we found one instance in which the emphatic quality of a [ḷ] led to emphasis in a [ḅ]: *ḅ-aḷ-ḷah* (בֵֽאלֹהִ֬ים, Ps 3:3); it is reasonable to assume that the presence of a double [ḷ] facilitated this spread.

[ṇ] may appear not only as a root consonant influenced by an emphatic consonant but also as the future morpheme of the first-person singular and plural, as well as the *n* of the passive verb form when the root includes an emphatic consonant; for example: *ṇṣaf̣f̣əf̣* (אֶֽעֱרָךְ, Ps 5:4).[[80]](#footnote-83) This is not the usual pattern, however, since emphasis does not spread beyond the root in most cases, as noted.

[2.4.4] Influence of the Back Consonants

We begin our discussion of the influence of the back consonants in the context of emphasis with /q/. Sibawayh dioes not mention /q/ as one of the مطبقة, but the tendency is to describe it too as “emphatic,” since its qualities are close to those of the original emphatic consonants.[[81]](#footnote-84)

An estimate of the strength of /q/ in the acquisition of emphasis by other consonants can be obtained by comparing it to the emphatic consonants /ṭ ḍ ṣ ṛ/. Like these consonants, /q/ may also cause emphasis in /z r s/ both when it precedes and follows them, for example: *u-baṛq-āt* (וּבְרָקִ֥ים, Ps 18:15), *u-bqaṛ* (וַֽאֲלָפִ֣ים, Ps 8:8), *yiqaṣmu* (יְחַלְּק֣וּ, Ps 22:19), *ṣọ̄q-ni* (נְחֵ֬נִי, Ps 5:9), *nəẓḷaq* (אֶמְעָֽד, Ps 26:1), *u-ẓaḷq-āt* (וַֽחֲלַקְלַקֹּ֑ת, Ps 35:6). However, /q/ cannot cause emphasis in an adjacent /t/ or /d/, for example: *qdərt-lu* (יְכָלְתִּ֑יו, Ps 13:5), *yiqtəl* (יַֽהֲרֹ֣ג, Ps 10:8).

The influence of /q/ on /b m f w n l/ may also occur with the assistance of an additional back consonant[[82]](#footnote-85) when they envelop the influenced consonant on both sides, for example: *ḥṃǝq* (פְּנֵ֣י, Ps 34:17).[[83]](#footnote-86) However, when /q/ appears alongside these consonants without an additional back consonant, it does not cause emphasis,[[84]](#footnote-87) for example: *qəflu* (סָּֽגְר֑וּ, Ps 17:10), *qult* (אָ֭מַרְתִּי, Ps 40:8).

The influence of /q/ is not limited solely to consonants and may also extend to the adjacent vowel: /ǝ/ may be realized alongside it as a back [å], while the long /ū/ is lowered to [ọ̄]. This influence is more evident in the vowel preceding the /q/ than in that which follows it. Thus we find *ṣọ̄q-ni* (נְחֵ֬נִי, Ps 5:9), *tfaqd-u* (תִפְקְדֶֽנּוּ, Ps 8:5), *sǝbbaq* (קַדְּמָ֣ה, Ps 17:13), maqqan (הִשְׁגִּ֑יחַ, Ps 33:14), qallǝbt (הָפַ֣כְתָּ, Ps 30:12), *l-mqaddš-īn* (לִ֭קְדוֹשִׁים, Ps 17:3), but *ṛqǝd* (שָׁ֝כַ֗ב, Ps 41:9) and *qǝflu* (סָּֽגְר֑וּ, Ps 17:10).

In the Jewish dialect of Tunis, the /q/ influences preceding consonants and vowels, but has no influence on subsequent ones.[[85]](#footnote-88) Among those Jewish speakers from Algiers who realize the /\*q/ as [q] (primarily due to its restoration under the influence of other dialects), this consonant does not maintain the typical qualities of an emphatic consonant and does not influence its neighbors.[[86]](#footnote-89)

On the basis of the data we have presented regarding CJA, we can conclude that /q/ has considerable emphasizing strength, though less so than /ṭ ḍ ṣ ṛ/.

The pharyngeal phoneme /ḥ/ is not emphatic itself but has emphasizing properties similar to those of /q/, albeit to a lesser degree.[[87]](#footnote-90) Under its influence, /r s z/ may acquire emphasis too; for example: *mǝn ǝṛ-ṛḥam* (מֵרָ֑חֶם, Ps 22:11), *fəṛṛaḥt* (שִׂמַּ֖חְתָּ, Ps 30:2), *ṣḥāb-u* (עָבָ֥יו, Ps 18:13), *ḥaẓẓəṃti-ni* (וַתְּאַזְּרֵ֣נִי, Ps 18:40).

Influence on the labials is possible with the assistance of /q/ when the two consonants envelope the influenced consonant, for example: *ḥṃəqt* (גָּעַ֣רְתָּ, Ps 9:6). However, when a labial appears alongside /ḥ/ alone, it does not acquire emphasis, for example: *ḥabbīt* (אָ֭הַבְתִּי, Ps 26:8).

Like /ḥ/, the equivalent pharyngeal phoneme /ˁ/ may also cause emphasis in the /ṛ/; for example: *ˁṛǝft* (יָ֭דַעְתִּי, Ps 41:12), *kīf ǝl-ˁ rūṣ* (כְּ֭חָתָן, Ps 19:6), and *dṛāˁ* (זְר֣וֹעַ, Ps 10:15).

The velar consonants /x ġ/ may cause emphasis in other consonants, but their strength is the least of all the consonants capable of causing emphasis. We found a handful of examples of such influence,[[88]](#footnote-91) such as *xālq-i* (צוּרִי֮, Ps 28:1) and *kīf l-ġẓāl-āt* (כָּֽאַיָּל֑וֹת, Ps 18:34).

The pharyngeal phonemes /ḥ ˁ/, the velar phonemes /x ġ/, and /h/ (although it does not cause emphasis) all influence their adjacent vowels. However, this subject will be discussed in Chapter Three.

[2.4.5] Conclusion

We have discussed two aspects of emphatic spread in CJA:L firstly, the emphatic quality of certain consonants, whether this is primary or secondary; and, secondly, the property of certain consonants to cause emphasis in others. We have also discussed the relationship between these two aspects.

As we have seen, the three classic emphatic consonants /ṭ ḍ ṣ/, together with /ṛ/, are distinguished from their non-emphatic correlatives, /t d s r/ and have the strongest emphatic quality and the strongest capacity to cause emphatic spread. There is a tendency to achieve harmony within the root, whereby the influence of /ṭ ḍ ṣ ṛ/ can be discerned throughout the word, both in consonants and vowels, and equally in both directions. In this respect, emphasis can largely be regarded as a quality of an entire root, that is, as suprasegmental. The condition for this is that the root includes a stable emphatic consonant capable of causing emphatic spread and passive consonants capable of acquiring emphasis.[[89]](#footnote-92) However, exceptions to this pattern lead us to define this as a tendency rather than a rule. No obstacles were found to emphatic spread though, of the phonemes /t d s r/, we found /t/ most “resistant” to emphasis.

The /q/ has a secondary capacity to cause emphasis; it may do so regarding the consonants /s z r/ and it also influences the adjacent (and particularly the preceding) vowel. With the assistance of an additional back consonant, it may even cause emphasis of one of the labial consonants or of /l/. Additional back consonants that may cause emphasis are /ġ x ˁ ḥ/, but their influence is relatively weak.

Secondary emphatic consonants in which the emphasis is not phonemic are [ḅ, ẉ, f̣, ṇ, ṃ, ḷ, ẓ]. These consonants acquire their emphatic quality from stable emphatic consonants and, in certain circumstances, from back consonants. In addition, some of these consonants may acquire an emphatic quality for emotional reasons.

From a diachronic perspective, we may divide the various emphatic consonants into three categories according to the layer of emphasis: historical emphasis, permanent synchronic emphasis, and circumstantial emphasis. The historical emphatic consonants are /ṭ ḍ ṣ/ and these are also the most stable emphatics in CJA. Their correlatives /t d s/, as well as /r/, belong to the second layer since, in certain circumstances, they became permanently emphatic, with the reservation regarding /t/ as discussed above. The third layer, “circumstantial emphasis,” comprises all the secondary emphatic consonants /b w f n m l z/. As their name implies, these acquire their emphatic quality from their surroundings, and their status in the dialect is allophonic.

[2.5] Phenomena of Assimilation and Dissimilation in the Consonants

[2.5.1] Phenomena of Assimilation

The reading by the Constantine rabbis of the *šarḥ* to the Psalms revealed phenomena of consonantal assimilation. The most prominent phenomenon of assimilation is emphatic spread, which was discussed in detail above.[[90]](#footnote-93) In most of the other instances, the assimilation was most often though not always partial and mainly regressive, but with progressive instances. A minority of the examples reflect permanent assimilation,[[91]](#footnote-94) but the large majority reflect possible circumstantial assimilation found on an occasional rather than a permanent basis. Most of the consonantal realizations resulting from assimilation have already been presented and discussed, so this section will offer a brief, horizontal portrait assessing the scope of the overall phenomenon of assimilation.[[92]](#footnote-96)

[2.5.1.1] Partial Assimilation

This consists of:

a) Assimilation of vocal loss, whereby a voiced consonant becomes voiceless through assimilation to an adjacent voiceless consonant. Examples:

b>p: *pḥāl* (כְּמוֹ, Ps 29:6), *səppḥu* (שִֽׁירוּ, Ps 33:3), *p-šyyāḥ* (בְּחַרְבֹ֖נֵי, Ps 32:4). The assimilation in these words is regressive.

z>s: *ḥrəst* (שָׁ֝מַ֗רְתִּי, Ps 17:4), *nəggəst* (“I made dance”). In these words the assimilation is regressive.

ġ>x: permanent assimilation has occurred in the spoken language in the root √ġsl, which has become √xsl, even in forms in which a vowel separates the [x] and the [s]: xǝslǝt (“she bathed”). When reading the *šarḥ*, two of the rabbis also pronounced the root as √xsl, although the orthography is almost always etymologically based: ג;סל.[[93]](#footnote-97) Thus we find: *nǝxsǝl* (אֶרְחַ֣ץ, Ps 26:6) and *u-xselt* (וָֽאֶרְחַ֖ץ, Ps 73:13). The phoneme /ġ/ has also lost its voiced quality and become [x] through assimilation to the following voiceless consonant in words from the root √fṛġ, albeit not in a permanent manner, for example: *nfǝṛṛǝx-hum* (אֲרִיקֵֽם, Ps 18:43), *yitfǝṛṛǝx-fī-h* (יָצ֣וּק בּ֑וֹ, Ps 41:9).

ḍ>ṭ: *tṭīˁ* (תֹּאבֵֽד, Ps 1:6), *u-tṭīˁu* (וְתֹ֬אבְדוּ, Ps 2:12). This shift occurred in the pronunciation of this root with one informant. It is possible that this reflects an isolated adoption of the [ṭ] realization of [ḍ] current in the sedentary dialects of the Constantine Province. However, it is also possible that it reflects progressive assimilation, so that the /ḍ/ has lost its voiced quality under the influence of the preceding voiceless /t/.

b) Assimilation of voicedness, whereby a voiceless consonant becomes voiced through assimilation to an adjacent voiced consonant. Examples:

k>g: regressive assimilation sometimes occurs in the root √kdb > √gdb: *gdūb* (“lies”).

rk>rg is a progressive assimilation found in two instances: *rǝgˁ-u* (הַכְרִיעֵ֑הוּ, Ps 17:13), *ibārǝg* (יְבָרֵ֖ךְ, Ps 29:11).[[94]](#footnote-98)

s>z: *nḥāz dəṛˁī-ya* (קֶֽשֶׁת)־נְ֝חוּשָׁ֗ה זְרֽוֹעֹתָֽי), Ps 18:35); the final [s] in the word *\*nḥās* acquires a voiced pronunciation under the influencing of the voiced consonant that begins the following word.

ṣ>z: *u-mḥzǝnt-i* (וּמְצֽוּדָתִ֣י, Ps 31:4). The voiced realization [z] of the /ṣ/ here may be due to the influence of the voiced /n/, despite the short vowel that separates the two consonants.

ṣ>ẓ: this regressive assimilation sometimes occurs in the words *ẓġāṛ* (עֽוֹלְלִ֨ים, Ps 8:3, 17:14) and *ẓġīr* (“small”).

f>ṿ: this regressive assimilation occured in the word *ṿǝḍ-ǝk* (חַסְדְּךָ, Ps 36:8) as pronounced by one of the informants.

x>ġ: this regressive assimilation occurs in the pronunciation of the female informant from Constantine: *ġubz* (“bread”)

t>ğ: when /t/ appears before /d/ (regressive assimilation): *ǧdayyaˁ* (תְּאַבֵּ֑ד, Ps 21:11), *ǧdawwi* (מְאִירַ֥ת, Ps 19:9), *ždakṛ-u* (תִזְכְּרֶ֑נּוּ, Ps 8:5). These instances seem to involve a shift of the [tš] realization of /t/ to its voiced equivalent [dž], which is sometimes pronounced as a true fricative [ğ= d͜ž]. We found one example of the shift t>ğ before the consonant /b/, which is also voiced: *nǝğbǝṛṛa* (וְ֝נִקֵּ֗יתִי, Ps 19:14).

t>d: when /t/ comes before a voiced consonant: *dğāwǝb-ni* (תַעֲנֵ֣נִי, Ps 17:6),[[95]](#footnote-99) *dġayyar* (תְּ֝קַנֵּ֗א, Ps 37:1).

[2.5.1.2] Full Assimilation

dt>tt: this full assimilation entails loss of voicedness, with the voiced consonant /d/ assimilating and becoming identical to the following voiceless /t/:[[96]](#footnote-100) *qˁatt* (יָ֭שַׁבְתִּי, Ps 26:4), *ṛqǝtt* (שָׁכַ֗בְתִּי, Ps 3:6), *ğḥǝtt* (כִחַ֥דְתִּי, Ps 40:11), *ulitt-ǝk* (יְלִדְתִּֽיךָ, Ps 2:7), *uǧǝtt* (“I found”).

tḍ>ḍḍ: this full regressive assimilation entails acquisition of voicedness, with the voiceless consonant /t/ assimilating and becoming identical to a following voiced /ḍ/: *ḍḍuwwi* (תָּאִ֣יר, Ps 18:29).

ˁh>ḥḥ: an unvoweled /ˁ/ followed by /h/ shift to [ḥḥ]. The realization of both consonants changes: the voiced pharyngeal fricative becomes voiceless and the voiceless glottal fricative a voiceless pharyngeal fricative. For example: *itǝbbaḥ-ḥum* (רֹֽדְפָֽם, Ps 35:6), *u-mǝnnaḥ-ḥum* (וַֽיְפַ֫לְּטֵ֥ם, Ps 37:40), *imǝnnaḥ-ḥum* (יְפַלְּטֵ֣ם, Ps 37:40), and *nǝqṭaḥ-ḥum* (אַצְמִיתֵֽם, Ps 18:41). This shift also appeared in the possessive pronoun forms: *\*ntāˁ-ha*>*tāḥ-ḥa* (“her”), *tāḥ-ḥum* (“their”).

The shift ˁh>ḥḥ is documented in Sibawayh’s *Kutāb* and mentioned by Al-Zamakhshari as a common feature in the dialects of Banu Tamim.[[97]](#footnote-101) This shift, which is documented in ancient dialects and was found in our study of CJA, is also present in other modern Arabic dialects.[[98]](#footnote-102) We did not, however, find examples of similar shifts, such as ḥh>ḥḥ, hḥ>ḥḥ, and ˁḥ>ḥḥ, in the corpus.[[99]](#footnote-103)

t>ğ: /t/ may assimilate to a following radical /ğ/, effectively yielding full assimilation:[[100]](#footnote-104) *ğğizz-u* (תִּדְּפֶ֥נּוּ, Ps 1:4). One informant pronounced *ğǝğǝzz-u* here, with a vowel separating the two now-identical consonants.

k>q: The [k] of the possessive suffix becomes [q] through attraction to the initial [q]:[[101]](#footnote-105) *fi qalb-qum* (בִ֭לְבַבְכֶם, Ps 4:5)

n>m: One informant assimilated the radical /n/ to a following /m/ of an affix: *mnbaˁ*>*mmbaˁ* (מְק֣וֹר, Ps 36:10).[[102]](#footnote-106) In this word, the /\*n/ both follows /m/ and is followed by another labial consonant, /b/, thereby assisting its assimilation to /m/.[[103]](#footnote-107)

n>m: permanent assimilation occurrs in the root √xmn, which has become √xmm after the /n/ assimilated to the double /m/ of the *kǝttǝb* verb form:[[104]](#footnote-108) *xammǝmu* (חָֽשְׁב֥וּ, Ps 21:12), *xammǝmt* (זַ֝מֹּתִ֗י, Ps 17:3), *ixammǝm* (יַחְשֹׁ֗ב, Ps 36:5).

\* – in some instances, the /n/ of the preposition *mǝn* assimilates to the definite article of the following word, for example: *mǝl ǝl-qǝlb* (מִלֵּ֑ב, Ps 31:13), *mǝl ǝl-bṭan* (מִבָּ֑טֶן, Ps 22:10).

\* – assimilation of the *l* of the definite article to the various consonants will be discussed in Chapter Seven: The Definite Article.

[2.5.2] Dissimilation

Consonantal dissimilation occurred in a small number of words in the corpus. In most cases, they involved the presence of two palatoalveolar sibilants in the same word.[[105]](#footnote-109)

š>s: when /ğ/ and /š/ appear in the same word in the *šarḥ*, the dissimilation š>s is seen. This dissimilation is permanent in the word *ğays* (חַ֭יִל, e.g.: Ps 18:40). In other instances, this dissimilation can be seen in the orthography and pronunciation of CJA, but not in the spoken language:[[106]](#footnote-110) *s-sǝğr-a* when reading the šarḥ (כיף סג'רא: כְּעֵץ֮, Ps 1:3), but š-šǝğr-a in normal speech; *l-s-sǝmš* when reading the *šarḥ* (in some instances) (לסמש: לַ֝שֶּׁ֗מֶשׁ, Ps 19:5), but always *šǝmš* in the spoken language.

\* – the main particle of negation in the *šarḥ* on the Psalms is *layš*. One informant, who translated without reading from the printed text, often used the dialectal negation construction *ma-...–š*. When the negated verb form ends in *š*, the negative particle –š may drop out through dissimilation,[[107]](#footnote-111) for example, *ma ifǝttǝš* (בַּל־יִדְרֹ֑שׁ, Ps 10:4).

\* – one of the informants pronounced the word *yirwāw* (יִ֭רְוְיֻן, Ps 36:9) as *yirvāw*. This may be an instance of assimilation, but the pronunication in this case may have been influenced by Hebrew and/or its orthography (ירואו).

[2.6] Liquid Exchanges

The rabbis’ reading of the *šarḥ* attested to exchanges between the liquid consonants l, m, n, and r. These exchanges were realized by different informants in different words; each showed a characteristic pattern of exchange in his or her idiolect.

n / l:

\* – in the first-person singular future forms: *ǝlbārǝk* (אֲבָרֵ֗ךְ, Ps 16:7), *ǝlḥǝbb-ǝk* (אֶרְחָֽמְךָ֖, Ps 18:2), *ǝlfǝttǝš* (אֲבַקֵּֽשׁ, Ps 27:8), *ǝlxabbaṛ* (אַגִּ֥ידָה, Ps 40:6).

\* – in the preposition *mǝn*: mǝl-waqt (מֵעֵ֬ת, Ps 4:8). This may reflect the contamination of the preposition by the definite article in the phrase *men ǝl-waqt*; it is also possible that this was preceded by an assimilatory interim stage *mǝl ǝl-waqt*.[[108]](#footnote-112)

\* – bṭan-hum > bṭal-hum (בִ֫טְנָ֥ם, Ps 17:14).

\* – u-lli yistanqǝm > u-lli yistalqǝm (וּמִתְנַקֵּֽם, Ps 8:3).

m/n:

\* – *nǝddāḥ* (לַ֭מְנַצֵּחַ, Ps 12:1), although the same informant also often used the form *l-ǝ;-mǝddāḥ* (לַמְנַצֵּ֗חַ, Ps 13:1).

\* – a permanent exchange has occurred in the word denoting belonging and possession: *mtāˁ* > *ntā*.[[109]](#footnote-113)

l/r:

\* – two of the informants occasionally realized the root √fḍl with an l/r exchange: *faḍr-ǝk* (e.g.: חַ֭סְדְּךָ, Ps 5:8; 31:8; 36:11), *fāḏr-ǝk* (חֲ֝סִֽידְךָ֗, Ps 16:10). However, they also often pronounce these forms with *l*, for example: *fāḏl-ǝk* (חַ֭סְדְּךָ, Ps 26:3) [check], *fḍǝl* (חֶ֣סֶד, Ps 25:10).

\* – the word *ḍǝlm*, meaning “oppress,” was sometimes pronounced with an l/r exchange by two of the informants: *ḍǝrm* (חָ֝מָ֗ס, Ps 18:49; 27:12).

\* – the l>r exchange occurs occasionally in *d-ǝl-waq*>*d-ǝr-waq* (e.g.: עַתָּ֣ה, Ps 12:6; 17:11). This shift occurred in the pronunciation of one informant when reading the *šarḥ*; the other informants were familiar with this realization, but did not use it when reading the *šarḥ*.[[110]](#footnote-114)

In all three above-mentioned words in which the exchange l>r occurs, the /l/ is preceded by the consonant /ḍ/.

\* The l/r exchange is also seen in *fi qǝrb-i* (בְלִבִּ֑י, Ps 4:8).

\* – an exchange of the two labial consonants b/m is found in the word[[111]](#footnote-115) *qallǝmti* (הָפַ֣כְתָּ, Ps 30:12).

\* – see Chapter Three regarding the epenthetic vowel that sometimes appears before an initial /l m n r/.[[112]](#footnote-116)

[2.7] Metathesis

Several instances of metathesis were found in the reading of the *šarḥ* to the Psalms. We will confine our discussion here to instances of permanent metathesis, setting aside incidental metathetic performances by one of the informants during the course of reading.[[113]](#footnote-117) Various forms are used in the *šarḥ* and in the spoken language to convey the sense of the verb “answer;” these all stem from a single classical root: جوب. In the language of the *šarḥ*, the metathetic form ואג'ב (*wăğǝb*) is used;[[114]](#footnote-118) for example: *wāğǝb-ni* (עֲנֵ֤נִי, Ps 4:2). However, in the spoken language, the form appears without metathesis: ג'אוב (*ğāwǝb*).[[115]](#footnote-119) Rabbi Yosef Renassia’s trilingual dictionary records جاوب as the equivalent of the Hebrew השיב (p. 382). Interestingly جاوب, which is the original form in Arabic, is used in the spoken language, while the metathetic form is dominant in the language of the *šarḥ*. In the *šarḥ* of the Jews of Tafilalet, one of the traditions differs from the other two in its use of the verb זאווב (*zawb*) as opposed to וואזב (*wazb*).[[116]](#footnote-120) This metathesis is found in other Maghrebi dialects, such as the Jewish dialects of Tunis[[117]](#footnote-121) and Algiers[[118]](#footnote-122) and the Muslim dialects of Jijel[[119]](#footnote-123) and Tlemcen.[[120]](#footnote-124)

Another verb in which metathesis has occurred is *ṣənnet*, which is used in the šarḥ to translate the Hebrew verbs האזין, הקשיב; for example: *ṣannət* (הַֽאֲזִ֥ינָה, Ps 5:2) and *tṣannət* (תַּקְשִׁ֥יב, Ps 10:17). This root has its origins in the metathesis of the root نصت (√nṣt), which is used in the same sense in CA. This metathesis is also found in other Maghrebi dialects,[[121]](#footnote-125) as well as in the dialects of Syria and Palestine,[[122]](#footnote-126) where the /t/ has an emphatic realization.

The verb קלל is translated in the *šarḥ* by נעל: *u-mənˁal-īn-u* (וּ֝מְקֻלָּלָ֗יו, Ps 37:22),[[123]](#footnote-127) a metathesis of the Arabic root لعن (√lˁn). In his dictionary, Rabbi Yosef Renassia recorded both لعن (p. 294) and نعل (p. 262), giving the Hebrew לקלל for both. This metathesis also occurs in the Jewish dialect of Tunis, where *nˁal* is used in this sense.[[124]](#footnote-128) The metathetic term is also heard occasionally in the dialects of Syria and Palestine.[[125]](#footnote-129)

The word ברית is translated in the *šarḥ* to the Psalms as העד:[[126]](#footnote-130) *u-hāˁd-u* (וּ֝בְרִית֗וֹ, Ps 25:10, 14).[[127]](#footnote-131) This word was created by metathesis from the CA عهد *\*ˁahd*.[[128]](#footnote-132)

**Chapter Three: Vowels**

## A General Outline of the Vocal Phonemic System

The vocal phonemic system in CJA comprises three stable long vocal phonemes (/ā/, /ū/, and /ī/), two long vocal phonemes of secondary status (/ē/ and /ō/), and a single short vocal phoneme (/ǝ/). This chapter will examine each of these phonemes in detail, but we will present the main features briefly here.

The long vowels /ā/, /ū/, and /ī/ have a clear phonemic status in CJA. In terms of quality, each of them is distinguished from the others and all three are distinguished from the short vocal phoneme /ǝ/. In most instances, they reflect the long vowels of CA and only occasionally the lengthening of short vowels.

The remaining two long vocal phonemes, /ē/ and /ō/, may be described as “potential” rather than “actual” phonemes for several reasons. Firstly, they appear only as a result of the contraction of the ancient diphthongs \*aw and \*ay, and even this contraction does not occur regularly. Secondly, the contrasting pairs proving their phonemic status are not words in common use among speakers. Lastly, the spheres in which they are realized are almost exactly the same as those of the phonemes /ū/ and /ī/.

Of the short vowels, a single phonemic vowel is dominant, the central vowel /ǝ/, created as a result of the neutralization of the classical short vowels ـُ, ـَ, and ـِ. This vowel is sometimes the product of the lengthening of an epenthetic vowel that originally emerged in order to break a sequence of consonants in one of the developmental stages of the dialect. The short vowel /ǝ/ has an established phonemic status in CJA and is clearly distinguished from the long vocal phonemes. The phonemic status of /ǝ/ is also proved by the fact that no minimal pairs were found distinguishing this vowel from other short vowels, while contrasting pairs were found for *ǝ* and *ø*.

The distinction on which the phonemic vocal system is based is one of quality, as we will establish, although it also includes attention to the quantitative dimension. In other words, in certain contexts it is the quantitative aspect, which usually plays a secondary function, that permits one to clearly distinguish between pairs of words.

The diversification of the realizations of the long vowels under the influence of their consonantal surroundings is also apparent in the speech of the Jews of Constantine, but vastly more extensive is the diversification of the realizations of the short vowels [a u i ǝ]. These realizations are largely conditional on their adjacent consonants: [a] is realized alongside back and emphatic consonants; [i] alongside /y/; and [u] in the vicinity of labials (and occasionally back consonants). The last of these vowels often appears in the future tense singular forms of Form I verbs, probably in order to preserve the classical vowel on the second root letter. The realization [ǝ] occurs in all other circumstances, appearing even in situations when one might expect another conditioned realization of the /ǝ/.

The long vowels have become dominant. These may be subdivided into true long vowels – ones whose realization is sometimes long and sometimes less so – and vowels that have a short realization but are regarded structurally as long. The latter category includes vowels in the enclitic possessive pronouns, the verb endings for various persons, and so forth, as will be discussed below. The /ǝ/ always has a short realization, and sometimes an extremely short one, but its range of lengths is narrower.

Our discussion of the vowel system in CJA also includes the role of the reduced vowel despite it not having phonemic status and occurring only in certain phonetic circumstances. This vowel often plays an epenthetic role, accompanying an initial consonant cluster and facilitating its pronunciation. This appears to be largely due to the application of the rule dictating the omission of short vowels in open syllables, a rule in CJA that creates numerous initial consonant clusters. The reduced vowel can also be found alongside pharyngeal consonants and as a participant in various formal processes, such as *sursaut* and *ressaut*.

To sum up, the vowel system of CJA as reflected in the rabbis’ reading of the comprises three principal long vocal phonemes, two secondary long vocal phonemes, a single short vocal phoneme, and a reduced vowel that lacks contrastive value.

This vowel system is broadly consistent with those of the various North African dialects. The stable presence of long vowels is documented in many Maghrebi dialects and the process of neutralization of the short vowels into a short central vowel is also a familiar feature in them. Most Maghrebi dialects feature a binary short vowel system comprising either the phonemes /ǝ/ and /u/ or /ǝ/ and /a/. Some, such as the Jewish dialect of Algiers,[[129]](#footnote-133) have /ǝ/ as the lone short phoneme. In this respect, CJA may be positioned between a single-phoneme short vowel system comprising /ǝ/ alone and a binary one featuring /ǝ/ and /u/; the justification for this is the survival of /u/ in CJA, as will be described below.

Our discussion of the vowel system will include an examination of the origins of the various vowels, the circumstances in which they appear, and the qualitative and quantitative aspects of their various realizations. Noting beforehand that *amaleh* is not found in CJA, we will describe the phenomenon of vocal harmony and possible dissimilation it features.

Diagram of the vowel system of CJA[[130]](#footnote-134)

[כאן יבוא הציור]

[3.2] The Long Vowels

[3.2.1] The Phonemic Status of the Long Vowels

CJA’s three stable long vowels, /ā/, /ū/, and /ī/, as reflected in the reading of the *šarḥ* to the Psalms by rabbis from Constantine, have distinct qualities from each other, with all of them contrasting in both quality and quality with the short vocal phoneme, /ǝ/. Accordingly, it would seem possible to establish that they are phonemes in this dialect.

In addition to these, which relate largely to the equivalent three CA long vowels, two long vowels /ō/ and /ē/ are also found, created due to the contraction of diphthongs. The discussion below will clarify the reasons why we prefer to deem these two potential phonemes in restricted use.

In support of these statements, we present the following minimal pairs:[[131]](#footnote-135)

a) Contrast Between the Long Vowels

ī/ū: This qualitative contrast is found in the following nouns in which the second root consonant is /w/ or /y/:

|  |  |
| --- | --- |
| (“festival”) *ˁīd* | *ˁūd* (“tree”) |
| (ר֣וּחַ, Ps 18:16) *rīḥ* | *ṛūḥ* (soul; וְ֭נַפְשִׁי, Ps 6:4)[[132]](#footnote-136) |

ā/ī: This qualitative contrast appears in an entire category of third-person masculine singular forms in the past tense compared to second-person imperatives of verbs from roots whose second consonant is /y/:

|  |  |
| --- | --- |
| (“saved”) *ġāt* | *ġīt* (הוֹשִׁ֑יעָה, Ps 20:10, 28:9) |
| (קִנֵּא֙, Dt 25:13) *ġāṛ* | *ġīr* (“be zealous!”) |
| (“awoke”) *fāq* | *u-fīq* (וְ֭הָקִיצָה, Ps 35:23) |

This contrast is also found as a categorical contrast between an adjective in the masculine singular in the *fˁīl* pattern and its plural in the *fˁāl* pattern:

|  |  |
| --- | --- |
| (גָּד֣וֹל, Ps 21:6, 104:25) *kbīṛ* | *kbāṛ* (הַגְּדֹלִֽים, Ps 115:13) |
| (חֹלֶ֑ה, Gn 48:1) *mṛīḍ* | *mṛāḍ* (“sick” (pl.)) |
| (רָ֑ב, Ps 19:11) *ktīr* | *ktāṛ* (רַבִּ֑ים, Ps 22:13) |

ā / ū: This qualitative contrast was also found in an entire category: the third-person masculine singular of the past tense versus the second-person singular imperative, in verbs from roots whose second consonant is /w/:

|  |  |
| --- | --- |
| (rose) *qām* | *qūm* (קוּמָ֤ה, Ps 17:13)[[133]](#footnote-137) |
| (אָמַ֣ר, Ps 10:6) *qāl* | *qūl* (אֱמֹ֥ר, Ps 35:3) |
| (הָיָ֣ה, Ps Ps 22:15) *kān* | *kūn* (הֱֽיֵה, Ps 30:11) |

b) Contrast between the long and short vowels:

We present below minimal pairs for the principal realization of the short phoneme [ǝ], illustrating the contrast between it and the vocal phonemes /ā/, /ū/, and /ī/. These contrasts are principally qualitative, but also have a quantitative aspect, since we are contrasting the quality of a long vowel with that of a short one. A handful of minimal pairs contrasting the phoneme /ā/ with the [a] realization of /ǝ/[[134]](#footnote-138) prove that the questionnaire aspect cannot be ignored, since it has a distinguishing value in certain circumstances.[[135]](#footnote-139)

ǝ/ā: This categorical contrast is found between nouns with the singular pattern *fˁǝl* and plural pattern *fˁāl*:

|  |  |
| --- | --- |
| (“rope”) *ḥbǝl* | *ḥbāl* (חֶבְלֵ֣י, Ps 18:6) |
| (הַר, Ps 2:6) *ğbǝl* | *ğbāl* (ְּֽהַרְרֵי, Ps 36:7) |
| (הַגָּמָֽל, Gn 24:64) *ğmǝl* | *ğmāl* (הַגְּמַלִּ֖ים, Gn 24:64) |

This contrast is also found in verbs between the third-person masculine singular past tense of Form I verbs and the infinitive of this form according to the pattern *fˁāl*:

(“laying”) *ṛqād* : *ṛqǝd* (שָׁ֝כַ֗ב, Ps 41:9)[[136]](#footnote-140)

An ā/ǝ contrast is also found between the ending of the construct form of singular feminine nouns and the plural construct. However, these are not minimal pairs in the full sense, since there is also a distinction between the two forms in stress which falls on the penultimate syllable in the singular but on the final syllable in the plural. It is possible that this influences the length of this vowel. Nevertheless, we have presented these word pairs since, according to the speakers’ linguistic awareness, the long *ā* in the plural morpheme /-āt/ has a clear distinguishing value: they repeatedly stated that, in order to form the plural, “you must add āt,” pronouncing an exaggeratedly long vowel as they give this explanation:[[137]](#footnote-141)

|  |  |
| --- | --- |
| (“the man’s trouble”) *'ḍayq-ǝt ǝṛ-ṛāǧǝl* | *ḍay'q-āt ǝṛ-ṛāǧǝl* (“the man’s troubles”) |
| (“the flute’s melody”) *'nǝġm-ǝt ǝl-ǧuwwāq* | *nǝġ'm-āt ǝl-ǧuwwāq* (“the flute’s melodies”) |
| (“the man’s melody”) *'ġnāy-ǝt ǝṛ-ṛāǧǝl* | *ġnā'y-āt ǝṛ-ṛāǧǝl* (“the man’s melodies”)[[138]](#footnote-142) |

ǝ/u: This contrast occurs between a noun with the singular pattern *fˁǝl* and plural form *fˁūl*:

|  |  |
| --- | --- |
| (כָזָ֣ב, Ps 4:3) *kdǝb* | *kdūb* (“lies”) |
| (“month”) *šhǝr* | *šhūr* (“months”) |

This contrast is also found in the spoken language between the masculine singular form of an adjective denoting a color and its plural form:

|  |  |
| --- | --- |
| (“red,” masc. sing.) *ḥmǝṛ* | *ḥmūṛ* (“red,” pl.) |
| (“green,” masc. sing.) *xdǝṛ* | *xdūṛ* (“green,” pl.) |
| (“white,” masc. sing.) *byǝḍ* | *byūḍ* (“white,” pl.) |

All the above forms (and the names of the other colors) are taken from the questionnaire. The singular form *fˁǝl* is used in the spoken language while, as we have seen above, the form used in the *šarḥ* is *ˀafˁal*.[[139]](#footnote-143) The plural form *fˁūl* is found in the spoken language, but is not common; in everyday speech the singular form *fˁǝl* is also used for plural nouns.[[140]](#footnote-144)

The a/ū contrast between the words *bḥaṛ* (הַיָּ֑ם, Ps 8:9) : *bḥūṛ* (יַמִּֽים, Ps 8:9, 24:2) is effectively an instance of the ǝ/ū contrast: since the second consonant in the root is /ḥ/, the short vowel [a] appears in the singular as the allophone of /ǝ/ in these circumstances.

ǝ/ī: This contrast is found in the following pair:

(“interest”) *gdǝm* : *gdīm* (בְּנֶשֶׁךְ֮, Ps 15:5) [בלגדים in the *šarḥ*]

The minimal pairs presented thus far contrast the three long vowels /ā/, /ū/, and /ī/ with the principal realization of the short vocal phoneme /ǝ/. These contrasts are mainly ones of quality rather than quantity. Even if a speaker incidentally shortens the long vowel in one word or lengthens the short vowel in the other, the distinction between the two will still be apparent. However, the qualitative aspect cannot be ignored. In the minimal pairs we present below between *ā* and *a*, the qange difference is decisive and failure to observe blurs the distinction between the words, leaving the speaker dependent solely on context.

a/ā: This contrast between the long vocal phoneme /ā/ and the realization [a] of the short vocal phoneme /ǝ/ is *a priori* restricted to those circumstances in which this realization appears, i.e., primarily adjacent to back or emphatic consonants.[[141]](#footnote-145) This should be regarded as a specific instance of the ǝ/ā contrast.

We found the contrast a/ā distinguishing between the third-person masculine singular of the Form I past tense verbs and the infinite form in the *fˁāl* pattern when the second or third root letter of the root is /ˁ/:

|  |  |
| --- | --- |
| (יָשָֽׁב,Ps1:1) *qˁad*[[142]](#footnote-146) | *qˁād* (וּבְמוֹשַׁ֥ב, Ps 1:1) |
| (שָׁמַ֥ע, Ps 6:9) *smaˁ* | *smāˁ*(לְשֵׁ֣מַֽע, Ps 18:45) |

The forms *qˁad*, *smaˁ* belong to the overall form of the third-person masculine singular of the past tense in Form I verbs: *ktǝb*. However, since the second or third root letter of these verbs is /ˁ/, the vowel [a] appears alongside as a conditioned allophone of the phoneme /ǝ/. Thus, the distinction between this form and the infinitive form for the same root, verbal form, and radical pattern is solely quantitative. Accordingly, in certain circumstances, vowel length plays a distinguishing role in CJA.[[143]](#footnote-147) D. Cohen also presents similar contrasts for the Jewish dialect of Tunis, such as: (“painted”) *šbä̆ġ* : *šbǟġ* (“painting”).[[144]](#footnote-148) He documents, he determined, on the basis of a small number of pairs in which the *ă* contrasts with other short vowels, that /ă/ constitutes a phoneme, albeit one with a destabilized status.[[145]](#footnote-149)

The a/ā contrast may appear between the suffix of the construct form of a feminine singular noun and its plural form when the third root letter is /ˁ/. For example:

|  |  |
| --- | --- |
| (תּוֹרַ֣ת אֱלֹהָ֣יו, Ps 37:31) *'šrīˁ-at ilāh-u* | *šrī'ˁ-āt* (תוֹרֹת֙, Ps 24:5) |
| (עֲדַ֣ת מְ֭רֵעִים, Ps 22:17) *'ǧmāˁ-at l-qbāḥ* | *ǧmā'ˁ-āt* (בְּ֝מַקְהֵלִ֗ים, Ps 26:12) [in the *šarḥ*: פ'לג'מאעאת] |

However, the vowel following the /ˁ/in the singular form is often pronounced [ǝ] and, in these instances, this should be regarded as a similar contrast to that presented above between *‘nǝġm-ǝt*/*neġ’m-āt*, regarding which we adopted a cautious position.[[146]](#footnote-150)

The minimal pairs presented above prove beyond doubt the existence of the three long vocal phonemes /ā/, /ū/, and /ī/ in CJA.

c) The Status of the Vowels ē and ō

These vowels do not originate in CA but are the product of the contraction of the diphthongs *ay* and *aw* (respectively) in those instances where it occurs.[[147]](#footnote-151) Their phonemic status can be established on the basis of pairs in which they are contrasted with other long vocal phonemes:

|  |  |
| --- | --- |
| (“except, apart from”) *ġēṛ* | *ġāṛ* (קִנֵּא֙, Dt 25:13) |
| (“except, apart from”) *ġēṛ* | *ġīṛ* (“be zealous!” masc. sing.) |
| (אָוֶן, e.g. Ps 6:9) *zōṛ* | *zūṛ* (“visit!” masc. sing.) |
| (אָוֶן, e.g. Ps 6:9) zōṛ | zāṛ (visited, 3p masc. sing.) |

While these minimal pairs indeed prove the phonemic status of the vowels *ē* and *ō*, several factors the weaken the force of these contrasts. While the rabbis were familiar with the word *ġēṛ*, they were more inclined, at least when reading the šarḥ, to employ the phrase *mǝn xǝlf* in the sense of “except, apart from” (e.g., Ps 18:32).

The word *zōṛ*, a contraction of the diphthong in \*zawṛ, was used interchangeably by the rabbis with the form maintaining the diphthong. From this we may conclude that contrasts such as *zōṛ*/*zūṛ* are not permanent and so such pairs reflect a potential contrast realized only in certain circumstances. More broadly, the phonemes /ē/ and /ō/ have a limited distribution, restricted as noted to those instances in which the above-mentioned contraction of diphthongs occurs. As we will see in the relevant chapter, these diphthongs do not contract regularly.

Further evidence of the weak status of the phoneme /ō/ can be found in the fact that both the stable phoneme /ū/ and the phoneme /ō/ are pronounced in the same range of realizations extending from [ū] to [ō].[[148]](#footnote-152) Thus, the clear distinction between /ū/ and /ō/ is confined to a very limited range of instances, while in the majority of circumstances this distinction is blurred.[[149]](#footnote-153) An example of these representational nuances can be seen, on the one hand, – from the perspective of the phoneme /ō/ – in the occurring in the contraction of the diphthong \*aw; for example: *b-ǝl-xōf* (בְּיִרְאָ֑ה, Ps 2:11), *u-xų̄f* [לבדוק את הסימן] (וּפַ֪חַד, Ps 31:12); and, on the other hand – primarily from the perspective of the phoneme /ū/ - in the enclitic third-person masculine singular pronoun,[[150]](#footnote-154) for example: *ğays-o* (חֵ֝יל֗ו, Ps 33:17), *tfakd-ọ* (תִפְקְדֶֽנּוּ, Ps 8:5), *yifəkk-u* (יַצִּילֶ֥נּוּ, Ps 34:20), *yiḥarz-u* (יִשְׁמְרֵ֣הוּ, Ps 41:3). Similarly, in Rabbi Renassia’s trilingual dictionary, we find the Arabic word دربوز (“railing”) transliterated first as *derboze* and then as *derbouze* (p. 32). This same dictionary also includes numerous examples of exchanges between the qualities *o* and *u* in Hebrew words, for example: פִשוֹט (p. 199), קרוֹב (p. 324); but: ארוּך (p. 168); עזוֹת פנים (p. 117), but עזוּת פנים (p. 166); צוֹרה (p. 166), but שנוי הצוּרה (p. 298); זוֹג (p. 321), גִדּוֹל (p. 168), תשלוֹם (p. 321), התאמתוֹת (p. 242), תוֹצאה (p. 382), but: תוּכחה (p. 383), אפרוּח (p. 352), רוח צפוּן (p. 41), and מבוּהל (p. 10).

Thus, in the Hebrew speech of the Jews of Constantine there is no clear distinction between the vowels *u* and *o*, i.e., between the *shuruq* and the *ḥolam*.[[151]](#footnote-155)

Exchanges between *ē* and *ī* are less common than those between *ū* and *ō*, but exist, for example, in the vowel of a contracted diphthong: *l-xīr* (ט֥וֹב, Ps 4:7), but *kull xēr* (כָל־טֽוֹב, Ps 34:11), *u-lēl* (וָלָֽיְלָה, Ps 1:2), but *līl* (לַּ֗יְלָה, Ps 17:3). This exchange is also found in the realizations of /ī/ in the first- and second-person masculine and feminine, and the third-person feminine singular of verbs whose third root letter is י: *ˁṭēt* (נָתַ֣תָּה, Ps 21:3) and *šqēt* (יָגַ֤עְתִּי, Ps 6:7), as opposed to *mšīt* (הָלַ֑כְתִּי, Ps 26:1).

We thus conclude that the vowels *ē* and *ō* are phonemes of restricted use. In very specific conditions, we find phonemic contrasts with other vowels but, in others, the phonemic distinction between these vowels and the other long vowels is eroded. More generally, these vowels have a limited distribution in CJA. Nevertheless, they should not be ignored and so we have included them as long vocal phonemes with secondary status, in contrast to the principal long vocal phonemes /ā/, /ū/, and /ī/.

A comparison between this picture and the situation in other Maghrebi dialects shows that the stable presence of the long vowels /ā/, /ū/, and /ī/ is not unique to CJA. These vowels are documented (in some instances alongside /ē/ and /ō/) in dialects, such as the Jewish dialects of Tunis[[152]](#footnote-156) and Algiers;[[153]](#footnote-157) the Muslim dialects of Tlemcen[[154]](#footnote-158) and Ouled Brahim;[[155]](#footnote-159) the Jewish dialect of Sefrou;[[156]](#footnote-160) and the dialects of Takrouna and Marzig.[[157]](#footnote-161)

1. Cohen 1912, p. 37. [↑](#footnote-ref-1)
2. Cohen 1975, p. 38. [↑](#footnote-ref-2)
3. Cantineau 1960, pp. 84-85. [↑](#footnote-ref-3)
4. See the discussion below on the realization of [w]. [↑](#footnote-ref-4)
5. Cohen 1912, p. 37. [↑](#footnote-ref-5)
6. See the discussion on p. 57 below. The shift in this root is already found in medieval Judeo-Arabic; see: Blau 1980a, p. 32, §4a; p. 82, §91. [↑](#footnote-ref-6)
7. However, cf. the realization of the singular after the definite article – *l-udən*, p. 60. See also Section [4.5]. [↑](#footnote-ref-7)
8. This realization occurred occasionally in the pronunciation of two of the informants. [↑](#footnote-ref-8)
9. Cantineau 1938, p. 853; Ostoya-Delmas 1938, p. 72. [↑](#footnote-ref-9)
10. Katz 1981, p. 15. [↑](#footnote-ref-10)
11. For example, a Jew born in Tiberias pronounced *muqtamar* in this manner; similarly, a Muslim native of the same city pronounced *madīnat baġdād əz-zawraq*. Levine informed me of this and heard the second testimony from Blanc. [↑](#footnote-ref-11)
12. Ms 2836 at the library of the Ben-Zvi Institute. For example: טומקה (=טומאה), נביקים (=נביאים), שקול (=שאול), לקארד(= ארץ). See: Bahat 1983, pp. 13-14. [↑](#footnote-ref-12)
13. One informant’s pronunciation featured numerous examples of the opposite shift in both Arabic and Hebrew words, where he often realized /h/ as [ˀ]. [↑](#footnote-ref-13)
14. See additional examples in Cohen 1912, p. 39. [↑](#footnote-ref-14)
15. Cohen 1975, p. 36. [↑](#footnote-ref-15)
16. Cohen 1912, p. 35. [↑](#footnote-ref-16)
17. Marçais 1902, p. 19. [↑](#footnote-ref-17)
18. Marçais 1908, p. 5. [↑](#footnote-ref-18)
19. Brunot 1950a, pp. 36-37; Heath and Bar-Asher 1982, p. 44. [↑](#footnote-ref-19)
20. Katz 1978, pp. 2-4. [↑](#footnote-ref-20)
21. Talmoudi 1980, p. 39. [↑](#footnote-ref-21)
22. Cf. the conjugation of form I *ddəš* or *dəšš* among the Jews of Tunis: Cohen 1975, p. 34; see also below. [↑](#footnote-ref-22)
23. It is realized as [əh] when it follows a diphthong ending in *w*; see Chapter Seven for a detailed discussion of pronouns. [↑](#footnote-ref-23)
24. See previous footnote. [↑](#footnote-ref-24)
25. One of the informants even pronounced /h/ as [ˀ] in Hebrew words: *ˀa-ššem* (יְהוָ֗ה, Ps 9:14 and elsewhere); conversely, he pronounced /ˀ/ as [h]: *hašira* (אָשִׁ֥ירָה, Ps 13:6). Cf. below regarding this phenomenon as a permanent feature in the Jewish dialect of Djerba. [↑](#footnote-ref-25)
26. Cohen 1975, pp. 34-35. Regarding other Tunisian dialects, see: Fischer and Jastrow 1980, p. 253. [↑](#footnote-ref-26)
27. Cohen 1912, pp. 32-33. [↑](#footnote-ref-27)
28. Katz 1978, pp. 2-3. [↑](#footnote-ref-28)
29. For discussion of this shift, see Sections [2.2.10] and particularly [2.5.1.2]. Marçais notes that the regular realization of /h/ in the dialect of Oualed Brahim is closer to the pronunciation of /ḥ/, particularly when it is doubled (1908, p. 9). [↑](#footnote-ref-29)
30. See the discussion in Section [2.2.11]. [↑](#footnote-ref-30)
31. This vowel is discussed in Chapter Three. [↑](#footnote-ref-31)
32. See previous footnote. [↑](#footnote-ref-32)
33. This condition is often found in other dialects: In the Jewish dialect of Tunis: Cohen 1975, p. 63; in the Jewish dialect of Algiers: Cohen 1912, p. 105; and in Tafilalet: Heath and Bar-Asher 1982, p. 47. Marçais defines the condition in the dialects of Tlemcen and Ouled Brahim as depending on whether *w* and *y* appear in a closed consonantal or open vocal syllable (1902, p. 35; 1908, p. 30). However, cf. the different behavior of /w/ in the Druze dialect of the Western Galilee and Mt. Carmel, where the consonantal aspect is dominant: Blanc 1953, pp. 54-55. [↑](#footnote-ref-33)
34. The realization *yədd* of this word is characteristic of the sedentary dialects in the Constantine Province, in contrast to *îd* in the nomadic dialects. See: Mangion 1937, p. 376. The doubling of the *d* in this word, which probably reflects a subconscious tendency among speakers to create a stable triconsonantal word, is also found in many other dialects. Examples include the Jewish dialect of Tunis: Cohen 1975, p. 143, and the Jewish dialect of Algiers: Cohen 1912, pp. 105-106. Documentation of the pronunciation of a glottal plosive at the beginning of this word exists for the Arabic dialect of the Jews of Djerba: Katz 1978, p. 24. [↑](#footnote-ref-34)
35. An interesting form is *yitwaxxru lawṛa* (יִסֹּ֣גוּ אָ֭חוֹר, Ps 40:15), see Section [10.5]. [↑](#footnote-ref-35)
36. See the discussion of the short vowel before these consonants in Section [3.4.2]. Cf. the phenomenon described by Cohen for the Jewish dialect of Algiers: the semi-vowel will always be realized as [y] or [w] when the initial consonant in the word is ˁ followed by a vowel separating it from the semi-vowel: *ˁăi̯äd* (festivals), *ˁău̯ǟd* (horses (1912, p. 108). [↑](#footnote-ref-36)
37. Regarding the unique features of the second person singular forms (masculine and feminine), which sometimes end in -ti and sometimes -t, see Section [7.2.1.1]. The second-person plural forms in the past, which were created by analogy to the first person singular form ending in -ti, always ends in -tīw. [↑](#footnote-ref-37)
38. See Section [7.2.5] for a detailed discussion of these verb types. It is interesting to compare the behavior of these forms in Tunis: the Jewish dialect has *mšaw* but *yəmšyu*, while the Muslims realize both vowels with hiatus – *mšǟsu*, *yəmšīu*: Cohen 1975, p.64. [↑](#footnote-ref-38)
39. For a detailed discussion on this issue, see Section [7.2.1.2]. [↑](#footnote-ref-39)
40. See previous footnote. [↑](#footnote-ref-40)
41. Only one example of a verb with first root letter י was included in the corpus. [↑](#footnote-ref-41)
42. The forms *tūğəd* and *yūləd* exist alongside these forms. Regarding the presence of two alternative forms, see p. 71 below. [↑](#footnote-ref-42)
43. It is reasonable to assume that similar behavior will be seen in the verb form *tkātəb*, but no examples occur in the corpus. [↑](#footnote-ref-43)
44. For a detailed discussion of verbs whose second root letter is ו or י in these and other verbal forms, see sections [7.3.6] and [7.4] below. The addition of the plural morpheme to verbs whose third root letter is ו or י was discussed above; other forms of verbs whose third root letter is ו or י are not relevant here, but will be presented in detail in Sections [7.2.5], [7.3.7], and [7.4] ff. [↑](#footnote-ref-44)
45. This is also a common occurrence in the Jewish dialect of Tunis: Cohen 1975, p. 45. Cf. the alternative realizations ii̯i̯/ īi̯ among the Jews of Algiers: Cohen 1912, p. 109. [↑](#footnote-ref-45)
46. According to Bar-Asher, the combination /yw/ is realized by speakers from Tafilalat as [yu] or [iw], without any real conditioning. But cf.: Heath and Bar-Asher 1982, p. 47. [↑](#footnote-ref-46)
47. See Section [2.2.11]. [↑](#footnote-ref-47)
48. Katz 1978, pp. 23-24. [↑](#footnote-ref-48)
49. Cantineau 1960, p. 87. [↑](#footnote-ref-49)
50. Blanc 1953, pp. 54-55. [↑](#footnote-ref-50)
51. I heard this opinion regarding the Jewish dialect of Tafilalat from Bar-Asher. [↑](#footnote-ref-52)
52. For detailed discussion of this feature, see Section [3.3]. [↑](#footnote-ref-53)
53. See Section [3.2] for a detailed discussion of the phoneme /ū/. Cohen presents arguments along this line regarding the Jewish dialect of Tunis (1975, pp. 63-64). However, a principled and structural perspective, the [u] vowel in such instances could be regarded as a long vowel, even if it is not realized as such. This is similar to the pattern in other words in which the *hamza* is omitted. See Section [3.2.3]. [↑](#footnote-ref-54)
54. Another theory not widely accepted today on the emphatic phones in most Semitic languages regards emphasis as a guttural-pharyngeal articulation; this realization of emphasis is found in the Semitic languages of Ethiopia. See: Morag 1963, p. 70. [↑](#footnote-ref-55)
55. Laufer 1987, p. 3. [↑](#footnote-ref-56)
56. Ibid., pp.4-6. [↑](#footnote-ref-57)
57. See Hockett 1955, p. 29. [↑](#footnote-ref-58)
58. Laufer 1987, pp. 4-14. [↑](#footnote-ref-59)
59. The written reflection of the behavior of these consonants will be discussed in Chapter Six: The Orthography of Zichron Ya‘akov. [↑](#footnote-ref-60)
60. Cantineau 1960, pp. 23-24. According to Cohen, Sibawayh also includes the phonemes /a/ and /y/ as مُفَخَّمَة in certain circumstances (1969, p. 60). [↑](#footnote-ref-61)
61. This discussion of emphasis is based on one of the analytical approaches presented by Heath 1987, pp. 295-326. In addition to this approach, which focuses largely on the expansion of emphasis in the root and affixes of words, Heath also proposes several models for its expansion, including the supra-segmental model, the syllable expansion model, and the vocal model (ibid., pp. 311-313, 321-324). However, Heath notes that these are proposed models that may be viable in the long term, while the more precise outcomes for the phenomenon of emphasis in the Moroccan dialect, which he describes at its current developmental state, will be secured through an analysis of the emphatic foci and emphatic spread. We have drawn on this analytical method only insofar as it was consistent with the data for CJA and our corpus, which does not include examples of all the types of the phenomenon Heath notes. I would like to thank Heath for allowing me to read his book prior to its publication. [↑](#footnote-ref-62)
62. See Section [2.2.3]. [↑](#footnote-ref-63)
63. Essentially, we are discussing assimilation here but, due to its unique characteristics, we discuss it as a separate issue. [↑](#footnote-ref-64)
64. For detailed discussion of this point, see Section [2.2.5]. See also Cohen’s comments on *ṛ* as a progenitor of emphasis, similar to other dental(-alveolars): (1912, p. 90). [↑](#footnote-ref-66)
65. Heath 1987, p. 308. [↑](#footnote-ref-67)
66. Additional examples may be found in section [2.2] under the various consonants. [↑](#footnote-ref-68)
67. Consonants mentioned by Cantineau as lacking *tafkhīm* in the Palmyra dialect also include the *t* and the *d* (1934, pp. 39-40). [↑](#footnote-ref-69)
68. Cf. Heqath 1987, pp. 295-296. Cf. p. 79 below regarding an initial [ṇ]. [↑](#footnote-ref-70)
69. The corpus did not include sufficient examples of roots including /\*t/ alongside a stable emphatic consonant to allow us to assess the behavior of /t/ alongside such a consonant within the verbal root itself. [↑](#footnote-ref-71)
70. Heath and Bar-Asher use this explanation for the pronunciation of the word /tṛab/ in the Jewish dialect of Tafilalat: Heath and Bar-Asher 1982, p. 40; Heath 1987, p. 309. Marçais notes that, in the Tlemcen dialect, [ţ] / [ts] [check sign] never become [ṭ] in normal adjacency with an emphatic consonant (1902, p. 31). Regarding the /t/ in CJA, see Section [2.2.3]. [↑](#footnote-ref-72)
71. Heath presents a hierarchy of the emphatic consonants in the Moroccan dialect of the Fez-Meknes region and also notes that /t/ is less likely to acquire emphasis than the other three consonants (Heath 1987, pp. 309-310). [↑](#footnote-ref-73)
72. See Section [2.4.4]. [↑](#footnote-ref-74)
73. These consonants will be referred to as “secondary emphatic consonants” and will be discussed in Section [2.4.3]. [↑](#footnote-ref-76)
74. Naturally, this phenomenon begins by “attacking” enclitic words. [↑](#footnote-ref-77)
75. In the Moroccan dialect of Fez-Meknes, described by Heath, a clear “preference” can be seen for right-to-left emphatic spread, whereas left-to-right spread is limited (1987, p. 321). The influence of the emphatic consonants applies mainly to preceding phonemes in the Jewish dialect of Tunis too, while the influence on subsequent phonemes is weaker. See: Cohen 1975, pp. 14, 32. Cohen notes that assimilation of the emphatic consonants in the Jewish dialect of Algiers may be both progressive or regressive and may extend across an entire word. However, emphasis in this dialect may also disappear in many instances (1912, p. 90). In the Tlemcen dialect, emphasis does not usually extend beyond a given syllable. See: Marçais 1902, p. 31. In Egyptian Arabic, emphasis may spread in both directions and across an entire word. See: Cohen 1969, p. 69. [↑](#footnote-ref-78)
76. That is, from the start of the word forward. The left-right directions relate to a phonemic transcription; in Arabic or Judeo-Arabic script, of course, these directions are reversed. [↑](#footnote-ref-79)
77. Heath 1987, pp. 297-298. [↑](#footnote-ref-80)
78. *Par nature*, to use the term employed by French dialectologists. This term is used in contradistinction to the secondary emphatic consonants, which acquire their emphatic quality under the influence of their phonetic environment: *par position*. For example, see: Cantineau 1934, pp. 39-40. [↑](#footnote-ref-81)
79. For examples of the appearance of [ẓ], see Section [2.2.4]. [↑](#footnote-ref-82)
80. For additional examples, see Section [2.2.3]. [↑](#footnote-ref-83)
81. Cantineau 1934, pp. 37-38; Wright 1981, I, p. 8. It is worth recalling in this context that some scholars regard /q/ as the emphatic equivalent of /k/, i.e. as /ḳ/. See: Laufer 1987, pp. 13-14. See also Cohen’s remarks on this subject (1975, p. 32). Brunot asserts that /q/ ≠ /ḳ/ (1950a, p. 36). [↑](#footnote-ref-84)
82. Cf. Heath 1987, p. 306. [↑](#footnote-ref-85)
83. The other examples were presented on p. 78 above. [↑](#footnote-ref-86)
84. With the exception of *ṇqalˁu* ((נְֽ֭נַתְּקָה, Ps 2:3), which was presented on p. 78 above. [↑](#footnote-ref-87)
85. Cohen 1975, pp. 31-32. [↑](#footnote-ref-88)
86. Cohen 1912, p. 52. [↑](#footnote-ref-89)
87. Cf. Heath 1987, p. 307; Cohen 1975, pp. 32-33. [↑](#footnote-ref-90)
88. Cf. Heath and Bar-Asher 1982, p. 41. [↑](#footnote-ref-91)
89. Cf. Heath 1987, pp. 309, 325. [↑](#footnote-ref-92)
90. See Section [2.4]. [↑](#footnote-ref-93)
91. We will note these instances later; whenever it is not mentioned, the assimilation is not permanent. [↑](#footnote-ref-94)
92. The reflection of assimilation in writing will be discussed in Chapter Six: The Orthography of Zikhron Ya‘akov. [↑](#footnote-ref-96)
93. See Sections [2.2.8] and[6.1.2]. [↑](#footnote-ref-97)
94. Cohen suggests that this phenomenon can be explained as progressive or regressive assimilation caused “from a distance” by the [ˁ] (1912, pp. 81-82). [↑](#footnote-ref-98)
95. Cf. the full assimilation t>ğ below. [↑](#footnote-ref-99)
96. This phenomenon is found, for example, in the Hebrew tradition of the Jews of Baghdad. See: Morag 1977, p. 87. Cf. from as early as the pronunciation of CA: Wright 1981, I, p. 16; In Medieval Arabic: Blau 1980a, p. 34, §12a. [↑](#footnote-ref-100)
97. Al-Zamakhshari, X, pp. 136-137; Cantineau 1960, p. 73 [check bibliography]. [↑](#footnote-ref-101)
98. For example, in the dialect of Tlemcen (Marçais 1902, p. 26) and in the dialect of Ouled Brahim (Marçais 1908, p. 11). It appears only occasionally in the Jewish dialect of Algiers: Cohen 1912, pp. 33, 75. It is also present in Mashriqi dialects: Cantineau 1960, p. 76. [↑](#footnote-ref-102)
99. Cf. Marçais 1902, pp. 25-26; Marçais 1908, p. 11. [↑](#footnote-ref-103)
100. For two possible explanations of this phenomenon, see Section [2.2.3], p. 28. Cf. above, Section [2.5.1.1], and see also: Cohen 1912, p. 75. [↑](#footnote-ref-104)
101. Among the Jews of Algiers, this assimilation may occur when [k] immediately follows /q/. See: Cohen 1912, p. 75; Marçais 1902, p. 25. [↑](#footnote-ref-105)
102. In the *šarḥ*, this word is written מנאבע (Ps 36:10). When I asked him to write it, Rabbi Daniel Renassia wrote this word as אמבע. [↑](#footnote-ref-106)
103. M. Cohen and D. Cohen document n/m exchanges before the bilabial consonant *b*: Cohen 1912, p. 73; Cohen 1975, pp. 43-44. [↑](#footnote-ref-107)
104. According to Bossier’s dictionary, which documents the Algerian and Tunisian dialects, a degree of differentiation has developed between the roots خمن and خمم, the latter being the more common (pp. 307, 310). Marçais reports that in the Mashriqi dialects, with the exception of Iraq’s, the root with /n/ is still current. See: 1908, p. 27 & n.2 and also: Dozy 1927, I, pp. 406-407. The root √xmm is found in additional Maghrebi dialects, for example, in Ouled Brahim (ibid.) and among the Jews of Algiers: Cohen 1925, p. 125. [↑](#footnote-ref-108)
105. Cf. Fischer and Jastrow 1980, p. 252. [↑](#footnote-ref-109)
106. For further detail, see Section [2.2.4] and Chapter Six: The Orthography of Zikhron Ya‘akov. [↑](#footnote-ref-110)
107. Regarding the behavior of this element in similar instances in the Jewish dialect of Algiers, see Cohen 1912, p. 77. [↑](#footnote-ref-111)
108. As we saw in Section [2.5.1.2] in forms such as *mǝl ǝl-bṭan* (מִבָּ֑טֶן, Ps 22:10). [↑](#footnote-ref-112)
109. The *n* in this word is an example of assimilation before a dental consonant: Cohen 1912, p. 74; Cohen 1975, p. 44. [↑](#footnote-ref-113)
110. For a discussion of this word, see Section [10:5]. [↑](#footnote-ref-114)
111. Exchanges of b/m are already documented in the writings of the Arab grammarians. See: Cantineau 1960, p. 28. [↑](#footnote-ref-115)
112. In Section [3.4]. [↑](#footnote-ref-116)
113. However, we will comment on one example of chance metathesis documented in writing: in the printed *šarḥ*, the verb זכר in Psalm 9:13 is translated פ'תכר and, following this, two of the rabbis read [ftkkǝṛ]. Since the verb זכר, which appears frequently in the *šarḥ*, is always translated by the verb תפ'כר [tfǝkkǝṛ] (e.g. Ps 25:6) or by the verb דכר [dkeṛ], it would seem that the metathetic form תפכ'ר is accidental and may even be a printing error. [↑](#footnote-ref-117)
114. With just one exception in the orthography: ג'אובתיני (עֲנִיתָֽנִי, Ps 22:22); and in a small number of instances in the reading of the *šarḥ* by two of the informants. The rabbi who translated without looking at the printed *šarḥ* always translated it as *ğăwǝb*. [↑](#footnote-ref-118)
115. However, in the Sefer Ha-Azharot, Rabbi Yosef Renassia translated לֹ֣א תַֽעֲנֶ֑נּוּ (2 Kgs 4:29) as ליס תג'אובהו. Rabbi Yosef Renassia’s book Sefer Ha-Azharot was republished with additions under the name Azharot La-Shevu‘ot by Rabbi Daniel Genassia. See: vol. 1, p. 129. [↑](#footnote-ref-119)
116. Bar-Asher 1985, p. 229. [↑](#footnote-ref-120)
117. Cohen 1975, p. 119. [↑](#footnote-ref-121)
118. Cohen notes that even in CA, roots including a semi-vowel tend to create doublets in which the semi-vowel appeared in different locations (1912, p. 99).. Barthélemy (1930, p. 127) and Elihi (1977, p. 381) document the form ג'אוב for the dialects of Syria and Palestine. [↑](#footnote-ref-122)
119. Marçais 1956, p. 184. [↑](#footnote-ref-123)
120. Marçais 1902, p. 76. [↑](#footnote-ref-124)
121. For example, in the Jewish dialect of Algiers: Cohen 1912, p. 100, and in the Jewish dialect of Tunis: Cohen 1975, p. 44. [↑](#footnote-ref-125)
122. Barthélemy 1930, p. 446. Barthélemy explains the form *ṣanaṭ* as comprising of *naṣata* and *ṣamata*. [↑](#footnote-ref-126)
123. In the reading of Gen 8:21, the form לְקַלֵּ֨ל was pronounced *li-yinˁal*. [↑](#footnote-ref-127)
124. Cohen 1975, p. 44. [↑](#footnote-ref-128)
125. Elihi 1977, p. 453; Barthélemy 1930, p. 758. [↑](#footnote-ref-129)
126. The orthography of the word is inconsistent: העדו (Ps 25:10), העאדו (Ps 25:14). [↑](#footnote-ref-130)
127. The rabbis also translated the Hebrew word ברית as *hāˁǝd* when reading other biblical verses (Ez 16:61; Dt 25:13; Is 24:5). However, in the Passover Haggadah published by Rabbi Yosef Renassia, *Zeved Tov*, בריתו is translated עאהדו (p. 14), without metathesis. [↑](#footnote-ref-131)
128. In the Jewish dialect of Tunis, the form *ˁǟd* is used with this meaning; this also comes from \*ˁahd, but the /h/ is not realized in this dialect. See: Cohen 1975, p. 36. [↑](#footnote-ref-132)
129. Cohen 1912, p. 104. [↑](#footnote-ref-133)
130. Non-phonemic realizations are enclosed in parentheses. [↑](#footnote-ref-134)
131. Many of the pairs are attested in the corpus, at least for one member; other contrasting pairs were taken from other biblical verses read to me by the rabbis, including some from the questionnaires presented to them. [↑](#footnote-ref-135)
132. Although this pair also includes the distinction r/ṛ, we have presented it as a secondary contrasting pair, since the r/ṛ may be analyzed in two ways: as an allophone or a phoneme; we have also adopted this approach in similar instances below. [↑](#footnote-ref-136)
133. See Section [7.2.4.3] regarding the long vowel in the imperative form of verbs of this type. [↑](#footnote-ref-137)
134. In the dialects of Tunis, too, D. Cohen identifies minimal contrasts of a qualitative character, particularly for the quality *a* (1970b, p. 159). [↑](#footnote-ref-138)
135. A spectrograph examination found a significant difference between the lengths of the vowels /ǝ/ and /ā/. My thanks to Dr. Laufer for undertaking this examination on my behalf. [↑](#footnote-ref-139)
136. Regarding the contrast between these forms, cf. below at p. 94. [↑](#footnote-ref-140)
137. The plural form *nǝġm-āt* is found, for example, in Ps 4:1. One of the rabbis initially read this word as *'nǝġm-at*, but immediately corrected himself to *nǝġ'm-āt*, showing that he sensed the difference between these two forms. [↑](#footnote-ref-141)
138. Regarding the contrast between these forms, cf. p. 94 below. [↑](#footnote-ref-142)
139. See p. 58 above [↑](#footnote-ref-143)
140. Evidence of this is that the female informant used the singular form exclusively to translate plurals; one of the rabbis explicitly mentioned this feature. [↑](#footnote-ref-144)
141. See Section [3:3]. [↑](#footnote-ref-145)
142. These forms were also examined in the following verses: Ps 27:4 (שִׁבְתִּ֣י), 29:10 (יָשָׁ֑ב, וַיֵּ֥שֶׁב), 107:32 (וּבְמוֹשַׁ֖ב זְקֵנִ֣ים), 1 Sm 20:25 (מ֨וֹשָׁב֜וֹ, מוֹשַׁב֙). Two of the rabbis used the form *mǝqˁad* when translating the latter two verses. The same form – מקעד – appears in the *šarḥ* to the Psalms itself (107:32). Nevertheless, the more characteristic form in the *šarḥ* in the sense of the Hebrew שבת or מושב is קעאד, while מקעד is more typical of the spoken language, despite its penetration in Ps 107:32. One of the rabbis also mentioned the existence of the form *qaˁd-a* to translate שֶבת. [↑](#footnote-ref-146)
143. On the importance of the quantitative distinction in Moroccan dialects, see: Brunot 1950a, p. 40. [↑](#footnote-ref-147)
144. Cohen 1975, p. 50. [↑](#footnote-ref-148)
145. Ibid., pp. 50-52. [↑](#footnote-ref-149)
146. See pp. 92-93 above. [↑](#footnote-ref-150)
147. For a detailed discussion, see Chapter Four: Diphthongs. [↑](#footnote-ref-151)
148. In the Jewish dialect of Algiers, too, the realizations of /ū/ may extend as far as [ọ̄], while the latter has no phonemic status: Cohen 1912, p. 130. In Tlemcen, too, *ō* and *ē* are regarded merely as variants of the other long vowels: Marçais 1902, p. 38. [↑](#footnote-ref-152)
149. Cohen described the difficulty in the Jewish dialect of Algiers in distinguishing between the vowels *ī* and *ū*, created by the contraction of the diphthongs between *ī* and *ū*, originating from CA (1912, p. 111). [↑](#footnote-ref-153)
150. Regarding the perception of the vowel in the above-mentioned pronoun as long, see Section [3.2.3]. [↑](#footnote-ref-154)
151. Similarly, the Jews of Djerba do not distinguish between the *shuruq* (*qubbutz*) and the *ḥolam*; all three vowel signs are regarded as a single vowel, realized as *o*, *U* or *u*. In general, the unification of the *shuruq* and the *ḥolam* is typical of the Hebrew traditions of the Jews of North Africa. Katz 1978, pp. 93-95. [↑](#footnote-ref-155)
152. Cohen 1975, pp. 50, 54. [↑](#footnote-ref-156)
153. Cohen 1912, p. 114. [↑](#footnote-ref-157)
154. Marçais 1902, p. 37. [↑](#footnote-ref-158)
155. Marçais 1908, pp. 37-41. [↑](#footnote-ref-159)
156. Stillman 1981, p. 236. [↑](#footnote-ref-160)
157. Fischer and Jastrow 1980, p. 250. [↑](#footnote-ref-161)