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## The Prefix Vowels of the Prefix-Conjugation in the Jewish Arabic Dialect of ʿĀna: A Chain of Innovations

**Abstract** The Jewish dialect of ʿĀna exhibits three synchronic vowel qualities for the prefix vowel in the prefix-conjugation of the first stem: *a*, *ə*, and *u*. While the latter vowel is an allophone of *ə*, the former two are independent phonemes. The existence of two phonemic prefix vowels, especially the vowel *a*, is intriguing in regional context since the reconstructed prefix vowel in *qəltu* dialects is assumed to be *\*i*. Therefore, this paper aims to outline the historical developments that led to this synchronic reality. It will argue that the prefix vowel *a* was borrowed from surrounding Bedouin dialects. As for the vowel *ə*, two hypotheses will be suggested to explain its existence: it either developed from the prefix vowel *a* in analogy to other cases of vowel raising, or it is simply a reflection of the older *qəltu* prefix vowel. Regardless of which hypothesis we choose to follow, the assumed historical development has clearly not been finalised, resulting in synchronic free variation.

**Keywords** historical linguistics, Judeo-Arabic, Iraqi Arabic, *qəltu* dialects, the Jewish dialect of ʿĀna, phonology, morphology, analogy, reanalysis

### 1 Linguistic background and methodology

ʿĀna, a town in western Iraq, near the Syrian border, has been home to one of the world's oldest Jewish communities for over two millennia. Like other Jewish communities in the region, the Arabic dialect spoken by the Jewish residents of ʿĀna (JA) belongs to the *qəltu* family of Mesopotamian Arabic (Blanc 1964: 5–6). More specifically, JA, situated on the banks of the Euphrates River, has been classified by Jastrow (1978: 24–26) as part of the Euphrates branch of the *qəltu* family. Consequently, it displays various Bedouin features (Bar-Moshe forthcoming a). The prefix vowel of the prefix-conjugation (PC), which is the main focus of this paper, is just one example of such features.



The following discussion is grounded in data collected through three waves of field research conducted among native JA speakers residing in Israel. A total of 240 minutes of recorded interactions were phonemically<sup>1</sup> transcribed and translated into English (Bar-Moshe forthcoming b<sup>2</sup>). The forms presented below were naturally produced by the speakers during spontaneous speech.

All the participants in the research were born in ʿĀna but immigrated to Israel along with the majority of the community in the early 1950s when they were young. In Israel, Hebrew became their primary language of communication. Some of them resided among native speakers of the Jewish dialect of Baghdad<sup>3</sup> (JB) and, as a minority, had to adapt to it. Consequently, the informants encountered challenges in adhering solely to JA and, to varying degrees, incorporated elements of Hebrew and JB into their speech. Fortunately, as will be clarified below, JA and JB exhibit significant differences in terms of the prefix vowel in the PC of the first stem. Hence, it was relatively easy to distinguish JA forms from JB forms.

## 2 The short vowel system of JA

### 2.1 Overview

Since this paper focuses on the prefix vowel, it is crucial to begin with a brief introduction to the short vowel system in JA. Similar to other *qəltu* dialects (Fischer and Jastrow 1980: 141), the vowel system in JA comprises two phonemes: *a* and *ə*. These phonemic distinctions have emerged through historical vowel changes, which will be discussed in §2.2. However, depending on the phonetic context, the mid-central vowel *ə* can manifest as three different allophones: *a*, *i*, and *u*, as detailed in §2.3. Table 1 provides an overview of the short vowel inventory in JA:

Phonemes	Allophones
<i>a</i>	N/A
<i>ə</i>	<i>a, i, u ~ o</i>

Table 1. JA short vowels<sup>4</sup>

<sup>1</sup> As detailed in §2.3, the phonemic transcription has been expanded to provide a more precise representation of short vowel qualities.

<sup>2</sup> In addition to the texts, this bibliographical item includes a comprehensive grammatical overview of JA.

<sup>3</sup> JB, classified as a *qəltu* dialect within the Tigris Branch, exhibits significant differences from JA in various aspects (Bar-Moshe forthcoming b).

<sup>4</sup> For an extensive analysis of the short vowel system in JA, refer to Bar-Moshe (2022). It is worth noting that two additional short vowels, *e* and *o*, primarily occur as allophones of their long counterparts in unstressed position. These vowels arise from the diachronic vowel

## 2.2 Diachronic vowel changes

The following five diachronic rules are fundamental to JA's phonological system:

- Rule 1: In an unstressed open syllable, Old Arabic<sup>5</sup> (OA) *\*a*, *\*i*, and *\*u* generally<sup>6</sup> zero-out: OA *\*kabīr* 'big (MS)' > JA *kbiġ*; OA *\*suyūf* 'swords' > JA *syūf*; OA *\*āziba* 'single (FS)' > JA *āzba*.
- Rule 2: Like other dialects in the *qəltu* family (Fischer and Jastrow 1980: 141; Talay 2011: 913), so in JA, OA *\*i* and *\*u* have merged into *ə*: OA *\*kunna* 'we were' > JA *čənna*; OA *\*štaġil* 'work (MS)!' > JA *štaġəl*.
- Rule 3: OA *\*a* is retained in a stressed syllable and in a post-stressed closed syllable: *balad* 'town'.
- Rule 4: In a pre-stressed closed syllable, OA *\*a* tends to be raised to *ə*: OA *\*ḍallēna* 'we stayed' > JA *ḍəllēna*. This diachronic development has occurred in JB as well, but unlike JB, where it appears systematically (Bar-Moshe 2019: 22), this is not the case in JA. Consequently, instances where OA *\*a* is preserved are not uncommon. There seems to be no specific conditioning for this phenomenon. Furthermore, a previous analysis, which drew upon comparisons with other dialects in the region and additional evidence from JA, argued that the free variation between *a* and *ə* in this syllable type can be attributed to incomplete diachronic development of Rule 4 (Bar-Moshe 2022: 60–61).
- Rule 5: In an unstressed position, an originally long vowel shortens: OA *\*yuridūn* 'they want' > JA *yġidūn*; OA *\*yawmayn* 'two days' > *\*yōmēn* > JA *yomēn*.

## 2.3 Phonetic vowel changes

The mid-central vowel *ə* is prone to phonetic changes depending on the flanking consonantal environment. In the vicinity of *ġ*, *x*, *q*, *h*, *ʕ*, *ʔ*, or *h*, a setting which is called *a*-colouring environment,<sup>7</sup> the vowel may be coloured as *a*: OA *\*šihḥa* 'health' > JA *šəḥḥa* -> JA *šəḥḥa* ~ *šaḥḥa*. In the vicinity of a labial, an emphatic, a back con-

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change outlined in Rule 5 (§2.2). Additionally, the short vowel *o* can appear as an allophone of *u* (§2.3). However, the vowels *e* and *o* will not be further elaborated upon here since they are irrelevant for the discussion about the prefix vowel.

<sup>5</sup> I follow Owens (2009: 4) in his use of Old Arabic as an umbrella term for all Arabic varieties attested in old written texts, based on which the forms along the paper were reconstructed.

<sup>6</sup> For some exceptions, see Bar-Moshe (forthcoming b).

<sup>7</sup> The term colouring was introduced by Blanc (1964: 36–37) in his description of the Muslim dialect of Baghdad (MB). Although the corresponding environments in MB and JA exhibit similarities, they are not identical. Compare Bar-Moshe (2022: 53–55) to Blanc (1964: 36–37, 55), Bellem (2008: 190–193) and Youssef (2015: 76).

sonant,<sup>8</sup> or the consonant *r*, a setting which is called *u*-colouring environment, the vowel tends to be realised as *u*:<sup>9</sup> OA \**qiṣṣa* ‘story’ > JA *qəṣṣa* -> JA *qəṣṣa* ~ *quṣṣa*. Similarly, the vowel *a* is predominantly realised as *i* in the vicinity of the consonant *y*. It follows that the phoneme *a* may be retained or, alternatively, replaced by one of its three allophones—namely, *a*, *i*, or *u*—depending on its surroundings.

Vowel colouring is a well-documented Bedouin trait observed to different extents in other dialects of the Euphrates branch and in *gəlat* dialects (Blanc 1964: 36–38; Jastrow 1978: 28, 58–59; Talay 2011: 913). In JA, vowel colouring is inconsistent. Some speakers are more persistent than others in applying it, but even for them, the same form can be readily found with the vowel *a* or with one of its coloured allophones. It appears that speakers make spontaneous decisions on whether to colour the vowel or not, without adhering to any fixed pattern. Given that this paper focuses on the nature of the prefix vowel, the phonemic transcription will be expanded to clearly represent these various allophones of *a* when relevant.

The diachronic and phonetic vowel changes discussed in this section, as well as in §2.2, have resulted in a synchronic asymmetry between OA \**a* and OA \**i* and \**u*. This asymmetry manifests in the greater prevalence of *u*-colouring compared to *a*-colouring. Consequently, speakers have developed increased sensitivity to the preservation of original \**a* over original \**i* and \**u*.<sup>10</sup>

### 3 The prefix vowel of the PC in the first stem

#### 3.1 Introduction

The ancient Arabic grammarians distinguished between two types of Arabic based on the nature of the prefix vowel of the PC in the first stem, whereby certain Arab tribes utilised the vowel *a* while others used the vowel *i*.<sup>11</sup> The term *taltala* was used to designate the latter type of Arabic (Rabin 1951: 61; Versteegh 1997: 143; Grand’Henry 2009: 430–431). While the prefix vowel in most modern Arabic dialects can be traced back to either OA \**a* or OA \**i*, certain dialects exhibit synchronic variation in its output, often concealed by strict phonemic transcriptions. In JA, three distinct vowel qualities are observed: *a*, *a*, and *u*.

<sup>8</sup> Including glottal, pharyngeal, uvular, and velar consonants. As such, there is an overlap between *a*- and *u*-colouring consonants, whereby all *a*-colouring consonants also fall under the category of *u*-colouring consonants, but the reverse is not true.

<sup>9</sup> The vowel may also surface as *o*, especially in a post-stressed closed syllable (Bar-Moshe 2022: 64–66).

<sup>10</sup> For a discussion about this asymmetry and its sources, see Bar-Moshe (2022: 59–60).

<sup>11</sup> Bloch (1967: 23–28) challenges the dichotomic approach and provides evidence indicating the coexistence of prefix vowels *a* and *i* in some OA dialects.

This paper aims to provide an account of the diachronic development of the prefix vowels in JA. Building on the understanding of different mechanisms of vowel change, as discussed in §2, we will first present a synchronic overview of the prefix vowel in JA in §3.2. Subsequently, in §4, we will explore the diachronic development of the prefix vowel. We will demonstrate that phonetic vowel changes alone are insufficient to explain the synchronic reality. Instead, we will propose two hypotheses, one involving analogy and the other reanalysis. To assess the likelihood of each hypothesis, we will examine the prefix vowel in various Mesopotamian Arabic dialects in §5.1. This comparative analysis will enable us to eliminate one hypothesis and observe the impact of neighbouring Bedouin dialects on JA. In §5.2, we will seek further support by examining the formation of the long persons. Finally, in §6, we will summarise our findings, which suggest that the synchronic variation of the prefix vowel in JA arises from a combination of paradigmatic changes and contact with Bedouin dialects.

Before we proceed, it is important to clarify the terms ‘short and long persons’. By ‘short persons’ we refer to the 1S, 1P, 2MS, 3MS, and the 3FS. These forms are constructed by combining a prefix and a base in the PC. On the other hand, the term ‘long persons’ refers to the 2FS, 2P, and the 3P. These forms are constructed with a prefix, a base, and a suffix. This distinction affects their conjugation base, whereby short persons present the base -CCVC while long persons present the base -CVCC-. Compare, for example, JA *yaktāb* ‘he writes’ to JA *ykātbūn* ‘they write’. While our primary focus will be on the prefix vowel in the short persons, we will also make references to the long persons in §5.2.

### 3.2 The synchronic reality

In JA, the prefix vowel is quite frequently realised as ə (~ i): JA *yā-ftāḥ* ‘he opens’; JA *nā-ṣ‘ad* ‘we go up’; JA *yā-sbah* ‘he swims’. However, it exhibits two additional vowel qualities, *a* and *u*:

- The prefix vowel may be realised as *u* in *u*-colouring environment: JA *tu-tbux* ‘she cooks’. This happens quite infrequently in JA and is probably conditioned by harmony with the base vowel.<sup>12</sup>
- The prefix vowel is *a*:

<sup>12</sup> In Dēr iz-Zōr and in MB, the vowel *u* was observed only when the base presents the vowel *u* (Blanc 1964: 99; Jastrow 1978: 255). Similar vowel harmonies have also been reported in North Africa (Behnstedt and Woidich 2005: 14) and in Palestinian Arabic (Monahan 2002: 191–192), specifically in certain Bedouin dialects of the Northern Sinai littoral (de Jong 2000: 197).

- always<sup>13</sup> when the first-person singular is involved: JA *a-tbux* ‘I cook’; JA *a-dxol* ‘I enter’; JA *a-sfən* ‘I look’,
- optionally in *a*-colouring environment: JA *ya-qdağ* ‘he can’; JA *ta-ğsəl* ‘she washes’; JA *ya-xrab* ‘he destroys’; JA *ya-ğəf* ‘he knows’,
- ad hoc in other cases, where it cannot be phonetically justified: JA *ya-rkoḏ* ‘he runs’; JA *ta-ltəm* ‘she slaps’; JA *ya-nzəl* ‘he goes down’; JA *na-dxol* ‘we go inside’.

Some level of free variation was observed regarding all the vowel qualities above (except the 1S), whereby the same verb may present the prefix vowel *a* on certain occasions but *ə* (~ *u*) on others. For example, both JA *ta-ğsəl* ‘she washes’ and JA *tə-ğsəl*, and both JA *ya-qra* ‘he reads’ and JA *yə-qra* have been documented. It can be argued that this free variation is a result of the *a*-colouring environment, but the reality is that free variation has also been observed in its absence. For instance, JA *ya-tlaʿ* ‘he goes out’ has been attested alongside JA *yə-tlaʿ*. Similarly, both JA *ya-rkoḏ* ‘he runs’ and JA *tə-rkoḏ* ‘she runs’ have been heard. Determining whether this presumed free variation applies to every verb form is a challenging question to answer given the current size of the corpus.

## 4 The historical perspective

### 4.1 Phonetic vowel changes

The prefix vowel in the majority of Modern Arabic dialects, including Mesopotamian Arabic, is believed to continue OA \**i* (Fischer and Jastrow 1980: 44; Jastrow 1983: 106; Versteegh 1997: 42; Owens 2009: 69–70). Assuming this is true, one might be inclined to attribute the situation in JA to phonetic changes. It could be suggested that the vowel *ə* (< \**i*) has simply been coloured by *a* or *u* in the appropriate consonantal environment. Under this assumption, a form like JA *ya-qdağ* would have developed from \**yə-qdağ* and a form like JA *tu-tbux* would have developed from \**tə-tbux* through colouring. This explanation would have been satisfactory if it were not for the fact that some forms exhibit the prefix vowel *a* outside of the *a*-colouring context, as mentioned earlier. Furthermore, although *u*-colouring is a much more common phenomenon than *a*-colouring, it is rarely attested as a prefix vowel in JA. This suggests that vowel colouring is not the primary mechanism behind the vowel change in this case. Additionally, in the short persons, the prefix vowel occurs in a stressed syllable, a syllable type where OA \**a* is retained while OA \**i* lowers into *ə*. If the prefix vowel was *ə* (< \**i*), it would indeed be susceptible to colouring, but then again, we find the vowel *a* beyond the *a*-colouring spectrum.

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<sup>13</sup> Fischer and Jastrow (1980: 44) attribute the occurrence of the vowel *a* to the frequent use of the pronoun *ana* ‘I’ before the verb.

Conversely, if the prefix vowel was *a*, it should have been retained, and by extension, it would have not been subject to vowel colouring.

It becomes evident, therefore, that phonetic vowel changes are insufficient to account for the synchronic reality observed in JA in regard to the prefix vowel of the PC in the first stem. Regardless of whether we consider *ə* or *a* as the original prefix vowel of the dialect, we encounter contradictory examples. This necessitates the search for an alternative explanation.

#### 4.2 Analogy and reanalysis

Upon comparing verbal forms with or without a pronominal suffix, it becomes apparent that the forms followed by a suffix present the prefix vowel *ə*, while those without a suffix display the prefix vowel *a*: JA *yə-qtəl-u* ‘he hits/kills him’ vs. JA *ya-qtəl* ‘he hits/kills’. This aligns with Rule 4, providing a potential explanation for the emergence of the prefix vowel *ə*, namely, that it has developed in analogy to the forms with a pronominal suffix. In other words, the different vowels in JA *ya-qtəl* and JA *yə-qtəl-u* promoted the development of JA *yə-qtəl*, where the prefix vowel is *ə* despite the absence of a subsequent pronominal suffix. If this explanation holds true, it implies that *ə* was initially introduced as a prefix vowel in unstressed syllables and subsequently extended to stressed syllables through analogy. This process may have further facilitated through contact with the JB, where Rule 4 applies systematically and the prefix vowel is always *ə* (Bar-Moshe 2019: 22, 33).

Having said that, an alternative argument can be made for an opposing analogical development. It may be the case that the prefix vowel *a* reflects a reanalysis of the vowel *ə* in a pre-stressed closed syllable as originating from OA *\*a*. Consequently, due to the speakers’ awareness to original *a* in a pre-stressed closed syllable, the prefix vowel *ə* in a verb like JA *yə-qtəl-u* may have led them to infer that the suffix-less form should exhibit the vowel *a* in accordance with Rule 4.

Analogy and reanalysis, then, may explain the peculiar synchronic distribution of *a* and *ə* as prefix vowels. It may have operated in two contrasting manners:

1. Hypothesis 1: The prefix vowel *ə* arose in analogy to the same vowel in a pre-stressed closed syllable (*ya-qtəl* vs. *yə-qtəl-u* > *yə-qtəl* vs. *yə-qtəl-u*).
2. Hypothesis 2: The prefix vowel *a* reflects the reanalysis of the prefix vowel *ə* in a pre-stressed closed syllable as originating from OA *\*a* (*yə-qtəl* vs. *yə-qtəl-u* > *ya-qtəl* vs. *yə-qtəl-u*).

As can be seen from the representation of the two processes in brackets, the opening point of Hypothesis 1 is the ending point of Hypothesis 2, and vice versa. Hypothesis 1 posits that the prefix vowel was initially *a*, while Hypothesis 2 sug-

gests that it was *a*. The question that we need to answer is, then, which one of these two developments is more plausible. To do that, we shall gather evidence from surrounding dialects and examine the forms of the long persons.

## 5 Which hypothesis is more probable?

### 5.1 The prefix vowel in surrounding Arabic dialects

The majority of modern Arabic dialects display reflexes of the prefix vowel *\*i*, although there are notable exceptions among Bedouin dialects in North and East Arabia, as well as certain dialects in North Africa, where the prefix vowel *a* is observed<sup>14</sup> (Versteegh 1997: 143). Nevertheless, upon closer examination of the prefix vowel in specific *qeltu* dialects, intriguing instances come to light.

Jastrow's claim (1983: 106) that the prefix vowel in Mesopotamian Arabic continues OA *\*i* seems to be supported by the data in Table 2, whereby most of the *qeltu* dialects present the prefix vowel *a* ~ *i*. Specifically, the *qeltu* dialects of the Tigris, Kurdistan, and Anatolia branches present this vowel exclusively, with the exception of Daragözü and Tikrit. Daragözü exhibits the vowel *a* in addition to *a*, but it seems to be conditioned by *a*-colouring environment (Jastrow 1973: 49). Tikrit, on the other hand, solely presents the vowel *a* (Jastrow 1983: 106). The reality in the Euphrates branch is quite diverse. Khawētna aligns with the rest of the *qeltu* group, showcasing the vowel *a* (Talay 1999: 97–98). In Dēr iz-Zōr, the vowel is also *a* but it may occasionally surface as *u*.<sup>15</sup> Conversely, in Hīt (Khan 1997: 79), and potentially in Albu Kmāl<sup>16</sup> as well, the prefix vowels *a* and *i*, respectively, may be coloured as *a*.

Among the dialects listed in Table 2, JA stands out as the only dialect that showcases three different phonetic realisations of the prefix vowel: *a*, *a*, and *u*. Disregarding the vowel *u*, whose occurrence is phonetically conditioned, and given that the vast majority of the dialects exhibit the prefix vowel *a* (< *\*i*), our attention will focus on the prefix vowel *a*.

The dialect of Tikrit,<sup>17</sup> being the only one in our sample that exclusively exhibits the prefix vowel *a*, holds significant importance in unravelling the origin of this prefix vowel in JA. Jastrow, who addressed some morpho-phonemic pe-

<sup>14</sup> For a full list of dialects that present the prefix vowel *a*, see Behnstedt and Woidich (2005: 13–14).

<sup>15</sup> In harmony with *u* as base vowel (Jastrow 1978: 255).

<sup>16</sup> The only example with the prefix vowel *a* that Behnstedt (1997: 285) notes for Albu Kmāl is *ya-ʿrif* 'he knows'. The fact that the prefix vowel is followed by <sup>ʿ</sup> casts the suspicion that it is conditioned by colouring.

<sup>17</sup> A recent publication about the *qeltu* dialect of Al-Dōr in the vicinity of Tikrit notes there the prefix vowel *a* as well (Hassan 2022).

Dialect		Prefix vowel		Dialect		Prefix vowel			
Tigris, Kurdistan, Anatolia	JB	ə	yə-ktəb	Euphrates	Hit	i	yi-ktib		
			yə-b'at				yi-rkab		
	CB	ə	tə-ktəb			Albu Kmāl	a	i	ya-ʿrif
			tə-ftaḥ						yi-nzil
	Tikrit	a	ya-ktəb				a	i	yi-lbas
			ya-šgāb						yi-ḍrub
	Kirkuk	ə	yə-ʿgəf		a				ə
			yə-šgāb				yə-ḍrəb		
	ʿAqra/Arbil	ə	yə-ʿmāl		ə	ə	yə-lʿab		
			yə-ftaḥ						
	Mosul	ə	yə-qtəl		i	Dēr iz-Zōr	i	yi-ktib	
			yə-msak					ti-šrab	
	Mardin	ə	yə-ktəb		u	u	yū-ḍrub		
			yə-šrab						
	Daragözü	ə	tə-msək		JA	ə	yəftaḥ		
			tə-ftaḥ				tə-ğsəl		
		a	ta-qtəḥ				a	ya-qdağ	
								u	tu-ṭbux

Table 2. The prefix vowel of the PC in the short persons in *qəltu* dialects<sup>1</sup>

<sup>1</sup> Table 2 also presents the different possible base vowels for each dialect to highlight that they do not necessarily correspond to the prefix vowel. The data in Table 2 are sourced from: JB (Bar-Moshe 2019: 40); The Christian dialect of Baghdad (CB) (Blanc 1964: 100; Abu-Haidar 1991: 46); Tikrit (Johnstone 1975: 93; Jastrow 1983: 108); Kirkuk (Jastrow 1992: 247–248); ʿAqra/Arbil (Jastrow 1990: 76–77); The Muslim dialect of Mosul (Jastrow 1979: 45); Mardin (Jastrow 2015: 181); Daragözü (Jastrow 1973: 55); Hit (Khan 1997: 78–79); Albu Kmāl (Behnstedt 1992: 39; Behnstedt 1997: maps 142, 144, 145, 146); Khawētna (Talay 1999: 96); Dēr iz-Zōr (Jastrow 1978: 255).

cularities of Tikrit back in 1983 (106–107), claimed that the prefix vowel *a* in this dialect reflects an innovation rather than an archaic element. According to Jastrow, the emergence of this vowel can be attributed to analogy with forms that include pronominal suffixes. In particular, Jastrow examined pairs like *qátlat* ‘she hit’ vs. *qətlát-u* ‘she hit him’ (< \**qatlát-u* < *qátlat* ‘she hit’ + *-u* ‘3MS’) or *bášla* ‘onion’ vs. *bəšlát-u* ‘his onion’ (< \**bašlát-u* < *bášla* ‘onion’ + *-u* ‘3MS’). As the forms on the right show, when a pronominal suffix is added in Tikrit, the pre-stressed vowel *a* of the closed syllable is systematically realised as *ə*. Thus, Tikrit, like JA, adheres to Rule 4. Furthermore, Jastrow observed that when a pronominal suffix is added to them, the syllabic structure of PC forms like *yə-qtál-u* ‘he hits him’ is identical to the forms on the right side. Thus, Jastrow argued that the suffix-less forms of the PC were formed in analogy to the forms on the left, resulting in *ya-qtəl* instead of *yə-qtəl*.

Jastrow’s explanation aligns with Hypothesis 2 and may support its potential applicability to JA. However, it is important to note that the situation in Tikrit differs from that in JA. In Tikrit, the prefix vowel *a* is exclusively present, indicating that the alleged analogical development was so successful that it eliminated any traces of the original prefix vowel *ə*. This contrasts with JA, where both vowels are synchronically attested. If the original vowel in JA was *ə* and Hypothesis 2 accurately describes its development, the question arises as to why traces of the original vowel still persist in JA. The only explanation for that could be that unlike Tikrit, the development that Hypothesis 2 outlines has not fully materialised in JA. But why would it not?

The reason for the persistence of both the vowel *a* and *ə* in JA may be attributed to the application of Rule 4. In Tikrit, as documented by Johnstone (1975: 92) and Jastrow (1983: 105), and similar to JB as observed by Bar-Moshe (2019: 22), the vowel raising process of OA \**a* into *ə*, as governed by Rule 4, appears to be consistently applicable without exceptions. However, in JA, the development of Rule 4 has not reached a definitive conclusion, resulting in synchronic variation between the vowels *a* and *ə* in pre-stressed closed syllables. This incomplete implementation of Rule 4 in JA may have consequently led to the partial effectiveness of Hypothesis 2, where the analogical development has not fully left its mark.

However, the restricted application of Rule 4 actually undermines the plausibility of Hypothesis 2. Hypothesis 2 proposes a more intricate analogical development compared to Hypothesis 1. Specifically, while Hypothesis 1 suggests a paradigmatic development driven by analogy, Hypothesis 2 involves a process of reanalysis. To comprehend this distinction, let us examine each stage of the two hypotheses individually:

Hypothesis 1: *ya-qtəl* vs. *yə-qtəl-u* > *yə-qtəl* vs. *yə-qtəl-u*

Stage 1: *ya-qtəl* vs. *yə-qtəl-u* requirements: prefix vowel *a*; Rule 4

Stage 2: *yə-qtəl* vs. *yə-qtəl-u* mechanism: analogy



Arabic is the absence of *taltala*, which entails the use of the prefix vowel *a* rather than *i*.<sup>19</sup> Hence, it is plausible to consider that certain Šāwi dialects, including those spoken around ʿĀna, have consistently maintained the vowel *a* as the prefix vowel, and that JA borrowed it from these dialects. If this proposition holds true, the prefix vowel in JA would simply be another feature borrowed from its neighbouring Bedouin dialects (Bar-Moshe forthcoming a).

Jastrow's explanation for the emergence of the prefix vowel *a* in Tikrit through Hypothesis 2 is based on the understanding that the original prefix vowel in *qəltu* dialects is OA \**i*. Therefore, Jastrow could not entertain an explanation like Hypothesis 1 that posits that the vowel was *a* at the starting point. However, our explanation does not contradict the fact that, as a member of the *qəltu* group, in JA the prefix vowel used to be *i* as well. Instead, we propose that the introduction of the prefix vowel *a* in JA occurred at a later stage due to contact with surrounding Bedouin dialects.

Finally, it is also plausible to consider a simpler explanation for the synchronic variation observed in the prefix vowel of JA. This explanation suggests that the introduction of the prefix vowel *a* through contact with Bedouin dialects was not fully successful in completely replacing the original prefix vowel *ə*. Currently, there is no conclusive evidence to exclude this explanation.

## 5.2 The long persons

The long persons in JA follow the pattern prefix-C-prefix\_vowel-CC-suffix.<sup>20</sup> Similar to the short persons, the quality of the prefix vowel can also change in the long persons. In fact, some of the conditions that determine the value of the prefix vowel for the short persons are also applicable to the long persons:

- Constituting part of a pre-stressed closed syllable, the vowel is mostly realised as *ə*: JA *yfəthūn* 'they open'; JA *tsəbhūn* 'you (FS) swim'; JA *tləbsūn* 'you (P) wear'.

<sup>19</sup> In some Najdi Arabic dialects, there is evidence of a distribution that appears to align with Barth-Ginsberg Law. Specifically, these dialects exhibit the prefix vowel *i* when the base vowel is *a* (*yi-sma* 'he listens') but use the prefix vowel *a* when the base vowel is *i* or *u* (*ya-ktib* 'he writes') (Ingham 1994: 20; Behnstedt and Woidich 2005: 13; Huehnergard 2017: 16). However, this distribution cannot be claimed to persist in JA, as numerous counter examples can be found. Consider, for instance, JA *ya-qdağ* 'he can' and JA *tə-rkoğ* 'she runs'.

<sup>20</sup> Although the prefix vowel in the long persons does not immediately follow the prefix, we propose that it has metathesised and moved to the next syllable (as explained in detail at the bottom of this section). Therefore, this vowel represents the prefix vowel and can be referred to as such. In order to prevent confusion, the various morphemes will not be separated in the forms of the long persons.

- In *a*-colouring environment, the vowel is usually realised as *a*: JA *tǧaslīn* ‘you (FS) wash’; JA *ṭḥafǧūn* ‘you (P) dig’; JA *yṭaḥnūn* ‘they grind’.
- Finally, the vowel may be realised as *u* in *u*-colouring environment: JA *yṭubxūn* ‘they cook’.

Instances of free variation were observed in the long persons as well. One can find examples such as JA *yqatlūn* ‘they kill/hit’ alongside JA *yqatlūn*, and JA *yǧəslūn* ‘they wash’ alongside JA *yǧaslūn*. Free variation between *a* and *u* was also observed in JA *yṭabxūn* ~ *yṭubxūn* ‘they cook’. It is worth noting that the vowel *a* in JA *yṭabxūn* is not surrounded by any consonant that triggers *a*-colouring.

Upon closer examination of the forms of the long persons, such as the verb JA *yfəṭḥūn* ‘they open’, two different hypotheses arise regarding their formation:

3. OA *\*yafṭaḥūn* > *\*yafṭhūn* > *\*yafəṭḥūn* > JA *yfəṭḥūn*
4. OA *\*yafṭaḥūn* > *\*yafṭhūn* > JA *yfəṭḥūn*

The first stage, which involves the elision of the base vowel *a* in an open unstressed syllable (Rule 1), is identical in both cases. Consequently, a cluster of three consonants was created. The distinction between the two hypotheses lies in how this cluster is resolved. The first hypothesis proposes that an anaptyctic vowel is inserted between the first and second consonants of the root, followed by the elision of the prefix vowel in accordance with Rule 1. On the other hand, the second hypothesis suggests that the vowel of the first syllable has simply metathesized to separate the consonants.

When Jastrow (1978: 90) examined the forms of the long persons in JB and Dēr iz-Zōr, the former equivalent to JA, he argued that the vowel is an anaptyctic vowel that became phonemicized. However, the forms found in Dēr iz-Zōr, for example, *yikitbūn* ‘they write’ and *yudurbūn* ‘they hit’, differ from those found in JB, JA, and Tikrit. In Dēr iz-Zōr, unlike the other three dialects, the prefix vowel is retained despite the fact that the rule governing its elision in an open unstressed syllable is also valid in this dialect, and despite the fact that initial clusters of two consonants are acceptable there (Jastrow 1978: 55, 87). Jastrow argued that the long persons in Dēr iz-Zōr have developed similarly to the first hypothesis mentioned earlier, except for the final stage (OA *\*yiktibūn* > *\*yiktbūn* > *yikitbūn*). However, the absence of the prefix vowel in JA and JB, where the respective forms are JA *ykəṭbūn* and JB *ykəṭbōn*, suggests that they have developed differently in these dialects, which may support the metathesis hypothesis.

The subtle differences between the two hypotheses are significant for our discussion, particularly because the second hypothesis suggests that the base vowel reflects the prefix vowel. In fact, it can explain the occurrence of the vowel *a* outside of the context of *a*-colouring environment in a form like JA *yṭabxūn*. This

example provides additional support for the hypothesis that the prefix vowel in JA was *a*.<sup>21</sup>

The presence of the vowel *a* in forms such as JA *yġādūn* ‘they want’, JA *yħabbūn* ‘they love’, or JA *ysammū-ha* ‘they call her (by name)’<sup>22</sup> can be explained if we consider that it reflects a metathesized prefix vowel whose value was *a*. It is possible that this vowel developed through analogy to the prefix vowel of the long persons of sound roots in the first stem. For instance, the vowel *a* in JA *yġādūn* may have simply emerged in analogy to the vowel *a* in JA *yħabxūn* ‘they cook’. Similarly, the vowel *a* in JA *ysammū-ha* may be analogical to the metathesized prefix vowel *a* in JA *yħabxū-ha* ‘they cook it (F)’. However, it is important to note that alternative explanations<sup>23</sup> for the occurrence of *a* in these cases can be proposed, and further research is needed to investigate this matter more thoroughly.

## 6 Conclusion

The historical development of the prefix vowel in the PC of the first stem in JA is a complex issue. With the exception of the 1S, which consistently presents the prefix *a*, the prefix vowel surfaces as either *a* or *ə* (< \**i*, which may be coloured as *u*) in the rest of the persons, making it challenging to establish a definitive justification for one vowel quality without questioning the presence of the other. Nevertheless, two hypotheses have been put forward to explain this synchronic anomaly:

- Hypothesis 1: The original prefix vowel was *a*, but when a pronominal suffix was added to the verb, a stress shift occurred, causing the vowel to raise from *a* to *ə* (Rule 4). Subsequently, verbs without a pronominal suffix were influenced, leading them to assimilate their prefix vowel into *ə* as well (*ya-qtəl* vs. *yə-qtəl-u* > *yə-qtəl* vs. *yə-qtəl-u*).
- Hypothesis 2: The original prefix vowel was *ə* (< \**i*), and it was reanalyzed as *a* thanks to Rule 4. Specifically, after the development of Rule 4,

<sup>21</sup> As for Tikrit, the vowel of the long persons is *ə* due to the consistent applicability of Rule 4 in that dialect. This explains why the vowel *a* does not appear in the first syllable of forms such as *yqətlāwn* ‘they kill’ or *tšəġbāyn* ‘you (FS) drink’ in Tikrit (Jastrow 1983: 108).

<sup>22</sup> Form a pure diachronic phonological perspective, the following forms are expected for these verbs: JA *yġidūn* (< \**yġidūn* < OA \**yuridūn*); JA *yħabbūn* (< OA \**yuhəbbūn*); and JA *ysammū-ha* (< OA \**yusammū-ha*). The former involves Rule 5 while the latter two involve Rule 4. These expected forms may coexist in free variation with the ones that feature the vowel *a*.

<sup>23</sup> The vowel *a* in JA *yġādūn* ‘they want’ might have been *a*-coloured as follows: OA \**yuridūn* > \**yġidūn* > \**yġidūn* > \**yġədūn* -> JA *yġādūn*. The same can be argued also for OA \**yuhəbbūn* > \**yħəbbūn* -> JA *yħabbūn*. These explanations cannot be ruled out since, unfortunately, only roots with *a*-colouring consonants were attested in the corpus for hollow roots and roots with a geminate final consonant. As for JA *ysammū-ha*, this form can be alternatively claimed to have preserved its OA form due to the partial applicability of Rule 4.

the unstressed prefix vowel of verbs followed by a pronominal suffix was interpreted as originating from *a*, and as a result, the prefix vowel of suffix-less verbs was hyper-corrected into *a* (*yə-qtəl* vs. *yə-qtəl-u* > *ya-qtəl* vs. *yə-qtəl-u*).

The starting point of Hypothesis 1 corresponds to the ending point of Hypothesis 2. Determining which hypothesis is more plausible posed a challenge due to the significant amount of free variation observed in the dialect regarding the quality of the prefix vowel. Nevertheless, we contend that Hypothesis 1 is more likely because it does not necessitate the complete development of Rule 4. In contrast, Hypothesis 2 proposes a more complex process involving the reanalysis of Rule 4, which presupposes its complete effectiveness. Given that Rule 4 has not reached its final stage, we have concluded that the scenario proposed by Hypothesis 2 is less probable.

The presence of the prefix vowel *a* in JA appears to contradict the pattern observed in other *qəltu* dialects, where the prefix vowel is thought to derive from OA \**i*. However, there is no reason to exclude the option that the original prefix vowel was \**i* (> *ə*) in JA as well, and that it was later replaced by *a* under the influence of surrounding Bedouin dialects. This vowel, in turn, is sometimes raised into *ə* thanks to Rule 4 and under the analogical development that was assumed by Hypothesis 1.

The diachronic development of the prefix vowel in JA can be summarised as follows:

Stage 1: *i* (as a *qəltu* dialect)

Stage 2: *a* (due to contact with Bedouin dialects)

Stage 3: free variation *ə/a* (Hypothesis 1, due to partial applicability of Rule 4)

It is also possible that Stage 3 has not even been reached. In that case, the synchronic variation that the prefix vowel exhibits in JA may result from an incomplete development of Stage 2, whereby the prefix vowel *i* has not been fully replaced by the prefix vowel *a*. Additional research will be required to determine which of the above scenarios is more plausible.

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## Symbols and abbreviations

>	diachronic development	JA	Jewish dialect of ʿĀna
->	synchronic development	JB	Jewish dialect of Baghdad
~	free variation	M	masculine
*	reconstructed form	MB	Muslim dialect of Baghdad
1	first person	OA	Old Arabic
2	second person	P	plural
3	third person	PC	prefix-conjugation
CB	Christian dialect of Baghdad	S	singular
F	feminine		

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