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## Between Analogy and Language Contact: A Case Study of Grammatical Change in Maghrebi Judaeo-Arabic Dialects

**Abstract** Analogy and language contact represent endogenous and exogenous factors of language change. Although both processes have been discussed in the realm of Arabic dialectology, they are usually treated as two unrelated scenarios. The central question that this study posits is whether those are two functionally independent phenomena, or they can operate synergetically. The primary focus of this paper is two typologically distinct Jewish dialects, i.e. sedentary Gabes (Southern Tunisia), and exhibiting numerous Bedouin features Wad-Souf (Eastern Algeria). Based on new data obtained from fieldwork, this paper accounts for five cases of grammar evolution within verb morphology and syntax through the lens of analogy and language contact. It raises the possibility that under certain circumstances, language change can occur at the intersection of endogenous and exogenous factors.

**Keywords** analogy, Judaeo-Arabic, Maghreb, syntax, morphology, language contact

### 1 Introduction

This paper attempts to unearth some of the most conspicuous cases of grammatical change in North African Judaeo-Arabic, with a particular focus on Wad-Souf (eastern Algeria), and Gabes (southern Tunisia). The methodology utilised in this study draws primarily from analogy and language contact. Although the scholarship of the former has a long history in linguistics, it has not received a systematic description in the field of Arabic dialectology, particularly within the Maghrebi dialects. Some scholars do mention analogical processes in morphology (Ratcliffe 2011; Heath 2002), but the scholarship is lacking in-depth analyses based on new data emerging from fieldwork. Moreover, since the syntax of North African Arabic is generally understudied, it is not surprising that virtually nothing is known



about analogical processes in this field.<sup>1</sup> The lack of sufficient text corpora of Maghrebi Arabic, on which potential surveys could be based, is presumably one of the reasons for this lacuna. On the other hand, there exist a number of valuable studies on contact between Arabic and its neighbouring languages, including Modern Hebrew (Manfredi and Tosco 2018; Sibony 2022). To the best of my knowledge, however, the interaction between analogy and language contact in Arabic dialects has never been closely studied.

The core data of this paper entails Jewish varieties of Maghrebi Arabic. The data for Jewish Tripoli (Libya) comes from Yoda (2005), for Jewish Tunis from Cohen (1964) and (1975), while for Jewish Gabes (Southern Tunisia) and Jewish Wad-Souf (Eastern Algeria) the data have been obtained by the author during fieldwork in Israel.<sup>2</sup>

The paper has the following structure: In section (1) a theoretical overview of two types of analogy is discussed, namely extension and reanalysis. Since the majority of data in this paper is related to verbs, section (2) provides a brief summary of the verbal system of North Africa Judaeo-Arabic. Subsequently, section (3) entails an analysis of 5 selected cases of language change in Jewish Gabes and Wad-Souf and is divided in two subsections: entity (3.1) entails cases motivated internally, while in entity (3.2) are discussed two phenomena, where analogy was catalysed by language contact. Finally, conclusions and further research questions are outlined in section (4).

## 2 Analogy—theoretical remarks

Analogy constitutes one of the most basic mechanisms of human reasoning, which, *inter alia*, enables the acquisition of new languages. It has been described by Hofstadter and Sander (2013) as ‘core of cognition’, while Blevins argues that analogy is a ‘search for predictability’ (2009). Undoubtedly, due to its prominent role in human cognition, analogy has a major impact on language development. By applying known patterns and correlations, speakers are able to create new, more predictable language forms. In what follows, I will briefly outline major aspects of analogy utilised as a methodological tool in the exploration of the diachronic evolution of grammar.

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<sup>1</sup> An exception to this rule is Moroccan Arabic, whose syntax has been thoroughly described by Dominique Caubet (1993).

<sup>2</sup> Data for Jewish Gabes comes from an extensive fieldwork conducted in Israel and France between December 2018 and March 2022. The total number of native speakers of Jewish Gabes participating in the research is eight. Out of four men and four women, seven have completed basic secondary education, while one of them has obtained a higher academic degree. Data for Jewish Wad-Souf comes from two stints of fieldwork in Israel (March–April and July–August 2022), during which two native speakers, a woman and a man, aged respectively 74 and 72, were interviewed. The male speaker has obtained a higher academic degree, while the female one has completed basic secondary education.

The cognitive force of analogy has been translated into numerous studies in linguistics. Indeed, it has been one of the most discussed topics in general linguistics in the last century, particularly in the American descriptivist tradition (Blevins 2009: 2; Bloomfield 1933: 275). A vast literature demonstrates analogical processes in the world's languages, mainly in the Indo-European family (Kuryłowicz 1947; Anderson and Jones 1974; McMahon 1994; Hopper and Traugott 2003). Analogical change is most conspicuous in morphology, but it operates in phonology and syntax as well. In morphology, it can be defined as the creation of new morphemes and words by means of an extension of already existing grammatical rules (Ratcliffe 2011). In contrast to grammaticalization, analogy does not produce new grammatical rules but rather attracts existing forms to follow certain paradigms (McMahon 1994: 71).<sup>3</sup>

Broadly speaking, we can distinguish two main types of analogy: extension and reanalysis.<sup>4</sup> Analogical extension is a phenomenon occurring primarily within verbal and nominal morphology, by which irregular verb forms are altered in order to conform to the dominant pattern. This mechanism can be observed in the diachronic development of the verb *aimer* 'to love' in French (Trask 1996). In Old French, as can be seen below, forms of 1PL and 2PL were irregular, since they did not possess /i/ in the first syllable:

|     | Old French    | Modern French |
|-----|---------------|---------------|
| 1SG | <i>aim</i>    | <i>aime</i>   |
| 2SG | <i>aines</i>  | <i>aimes</i>  |
| 3SG | <i>aimet</i>  | <i>aime</i>   |
| 1PL | <i>amons</i>  | <i>aimons</i> |
| 2PL | <i>amez</i>   | <i>aimez</i>  |
| 3PL | <i>aiment</i> | <i>aiment</i> |

Under the pressure of the prevailing pattern featuring /ai/ in the first syllable, the irregular form has been analogically altered. In a similar vein, analogical extension in nominal morphology entails the generalisation of the dominant pattern, as a result of which a prevailing prefix or suffix eradicates marginal and weaker

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<sup>3</sup> Some scholars interpret analogy as a type of grammaticalization, and not as a separate process. Hopper and Traugott define two mechanisms of grammaticalization, i.e. analogy and reanalysis (2003: 39).

<sup>4</sup> In linguistic literature there exists also another commonly applied term, namely 'levelling'. Nevertheless, in the present paper, following Garrett (2008: 125–143), the idea of 'pure analogical levelling' is rejected, and the paradigmatic levelling of irregular verb forms is treated as a case of analogical extension of pre-existing forms.

variants. This is exemplified by the diachronic development of the English plural marker /s-/, which gradually replaced /-a/ and /-u-/ suffixes, e.g. *giefa* > *gifts*, *scipu* > *ships* (Campbell 1959: 222).

Whereas analogical extension changes the morphological surface of the form, reanalysis is a process by which the speaker changes the perceptual interpretation of a form, without altering its morphology. As a result, a form acquires new applications and starts occurring in a new context with simultaneous preservation of its external surface, giving rise to new linguistic structures (Madariaga 2017). This process is exemplified by the reanalysis of the lexical item *mente* 'mind' in Latin, which initially formed the expression *calmamente* 'with calm mind'. The second component of this newly created item was reanalysed as an adverbial marker and subsequently actualised, producing forms like *particularmente* 'particularly', *sinceramente* 'sincerely', *obviamente* 'obviously' in Spanish.

Nevertheless, recent decades have brought a decline in the study of analogical change, primarily due to the marginalisation of morphology by the generative school, particularly at its early stages (Blevins and Blevins 2009: 9; ten Hacken 2020: 2). In one of his works, Chomsky states explicitly that 'analogy is simply inappropriate in the first place' (1986: 32). The disregard harboured by generativists towards analogy, combined with its ubiquitous presence in descriptive grammar in the 20th century, have led many scholars to approach analogy with a high degree of suspicion, questioning its methodological effectiveness. However, considering the central role of analogy in human cognition, its importance for the study of the historical development of grammar should not be diminished.

Of particular significance in this paper is the interplay between analogy and language contact. Although these two phenomena tend to be analysed separately, I argue that in certain cases the language change is brought about by the synergy of both. The functional convergence of the endogenous and exogenous factors of a language change was observed by Willis: '[...] even canonical endogenous scenarios may be catalysed by language contact: syntactic analogy may be favoured if the input to acquisition is limited by the presence of another language in the community, and typologically driven change may be the product of language use (production or processing considerations)' (Willis 2017: 492). One can imagine that the catalysing role of language contact is not limited to syntax only but operates within morphology too. Under certain circumstances, a prolonged period of bilingualism is prone to stimulate language-internal processes, like for instance analogy. In the present paper, I shall like to discuss such a possibility in Cases (4) and (5), where language contact with Berber and Israeli Hebrew respectively is suggested to have accelerated an analogical change in Judaeo-Arabic.

### 3 Overview of the verb system of Maghrebi Judaeo-Arabic

Since most of the data in this paper involve verb morphology, let us first provide a brief overview of the verb system of North African Arabic. Although there might be quantitative differences in the distribution of the verb stems within the dialects in question, the following table presents the general verb patterns attested in Judaeo-Arabic spoken in Algeria, Tunisia, and Libya. As can be inferred, IV and IX forms of Old Arabic (OA) are generally absent.<sup>5</sup> As a result, some of the properties of those forms have been passed on to other stems. In addition, like other North African dialects of Arabic, the dialects in question possess the XI stem, which corresponds to the IX stem in the Eastern group (Ritt-Benmimoun 2014: 383). Consequently, there are nine verbal stems in total, each possessing a regular form ( $C_1C_2C_3$ ) ( $C$  standing for consonant), a second radical geminated form ( $C_1C_2C_2$ ), and forms with first radical semi-vowel ( $w/y$   $C_2C_3$ ), second radical semi-vowel ( $C_1$   $w/y$   $C_3$ ) and third radical semi-vowel ( $C_1C_2$   $w/y$ ). Thus, the system of the verbal forms of Maghrebi Judeo-Arabic can be represented as follows:<sup>6</sup>

|                       |                                                                     |
|-----------------------|---------------------------------------------------------------------|
| Stem I                | $C_1C_2\mathfrak{C}_3$                                              |
| Stem II               | $C_1\mathfrak{C}_2C_2\mathfrak{C}_3$                                |
| Stem III<br>T-passive | $C_1\bar{a}C_2\mathfrak{C}_3$<br>$t\mathfrak{C}_1C_2\mathfrak{C}_3$ |
| Stem V                | $tC_1\mathfrak{C}_2C_2\mathfrak{C}_3$                               |
| Stem VI               | $tC_1\bar{a}C_2\mathfrak{C}_3$                                      |
| Stem VII              | $n\mathfrak{C}_1C_2\mathfrak{C}_3$                                  |
| Stem VIII             | $C_1T\mathfrak{C}_2C_3$                                             |
| Stem X                | $staC_1C_2\mathfrak{C}_3$                                           |
| Stem XI               | $C_1C_2\bar{a}C_3$                                                  |

Table 1. Overview of the verb stem in the Jewish varieties of Maghrebi Arabic

<sup>5</sup> For the development of the IV stem in Moroccan Arabic see Aguadé (2012).

<sup>6</sup> The list includes suffix forms of the strong verb solely. Except for a purely dialectal T-passive stem, which has no antecedent in OA, all the other stems have been numbered according to their correspondence to OA.

Stem I in North African Arabic is by far the most common, with a large variety of roots represented. In Classical Arabic, as well as in many modern dialects, the basic stem, i.e. stem I, appears in three vowel sub-groups, each including verbs with a certain meaning (Fischer 2002: 98). This diversity has been considerably reduced in the majority of North African to /ə/ and locally to /a/. Thus, instead of Classical *kabura*, one finds *kbər* 'he grew big', instead of *kataba* – *ktāb* 'he wrote', and instead of *barida* – *brəd* 'he was cold'. Laryngeal and pharyngeal consonants tend to co-occur with /a/, i.e. *dbaḥ* 'he slaughtered', *l'ab* 'he played'. In the Jewish dialect of Tripoli, the vowel reduction is particularly radical since the ultrashort /ə/ remains stable even in the proximity to gutturals (Yoda 2004: 142). Contrary to this, the Muslim dialect of Tunis, for instance, preserved all three short vowels of the suffix conjugation, which subsequently gave rise to six variants of the prefix conjugation (Singer 1984: 331).

The phenomenon described above has a serious impact on the semantic structure of the entire verbal system, particularly stem II, since in Classical Arabic the distinction between 3MSG suffix stem and imperative SG is based on the different vowel qualities. Hence, when all the short vowels have been reduced, there is no possibility to express such differentiation. For instance, in Jewish Gabes, the aforementioned forms are the same, i.e. *šākkər* 'he closed' and 'close (MSG)!'. In Jewish Tripoli this problem of ambiguity has been resolved by differentiation of the stress position, i.e. in perfect forms, the stress falls on the penultimate syllable, while in imperative ones on the ultimate, *ʿallām* 'he taught', but *ʿállām* 'teach!' (Yoda 2005: 142). The dialect of Marāzīg, on the other hand, seems to reflect the OA /i/ vowel of the imperative, i.e. *baṭṭal* 'he stopped', but *baṭṭil* 'stop!' (Ritt-Benmimoun 2011:333). Other dialects, like for example the Muslim dialect of Tunis and the dialect of Sūsa, do not distinguish the suffix stem from the imperative through vowels with different qualities, despite possessing a set of three short vowels (Singer 1984: 368; Talmoudi 1980: 99).

## 4 Analysis

### 4.1 Internally motivated development

In this section, I shall discuss three cases of analogical change, where no external factor was detected. The first two cases exemplify an analogical extension within conjugational patterns, while the third one demonstrates how the purposive particle was reanalysed as a discourse dependency marker.

### Case 1: Extension of the pattern 3rd radical weak of stem I

It has been previously pointed out that analogical extension involves the unification of verb paradigms by adjusting irregular forms to the dominant pattern.<sup>7</sup> In what follows, I present a case of the analogical extension within the verb system of Jewish Wad-Souf. The conjugational pattern of the 3rd radical weak of the stem I is extended analogically to the geminate verbs of the stem I:

Source: stem I, 3rd radical weak, *mša* 'to go'

|      | S-stem       | P-stem       |
|------|--------------|--------------|
| 3MSG | <i>mša</i>   | <i>yəmši</i> |
| 3FSG | <i>mšāt</i>  | <i>təmši</i> |
| 2MSG | <i>mšēt</i>  | <i>təmši</i> |
| 2FSG | <i>mšēti</i> | <i>təmši</i> |
| 1SG  | <i>mšēt</i>  | <i>nəmši</i> |
| 3PL  | <i>mšāw</i>  | <i>yəmšu</i> |
| 2PL  | <i>mšētu</i> | <i>təmšu</i> |
| 1PL  | <i>mšēna</i> | <i>nəmšu</i> |

Output 1: stem I, geminate, *ḥabb* 'to like, to love'

|      | S-stem         | P-stem        |
|------|----------------|---------------|
| 3MSG | <i>ḥabb</i>    | <i>yḥabb</i>  |
| 3FSG | <i>ḥabbət</i>  | <i>tḥabb</i>  |
| 2MSG | <i>ḥabbēt</i>  | <i>tḥabb</i>  |
| 2FSG | <i>ḥabbēti</i> | <i>tḥabbi</i> |
| 1SG  | <i>ḥabbēt</i>  | <i>nḥabb</i>  |
| 3PL  | <i>ḥabbu</i>   | <i>yḥabbu</i> |
| 2PL  | <i>ḥabbētu</i> | <i>tḥabbu</i> |
| 1PL  | <i>ḥabbēna</i> | <i>nḥabbu</i> |

<sup>7</sup> One of the traits of the Maghrebi dialects, namely the /n-/ prefix on the 1SG verb conjugation is in fact an example of analogical levelling, as is the disappearance of feminine forms in 2nd person singular and plural in the prefix conjugation in the vast majority of North African varieties.

This development is attested in virtually all varieties of spoken Arabic and is not confined to Jewish Wad-Souf. However, in this dialect, the expansion of the pattern of the 3rd radical did not stop in stem I but went on to stem II geminate. It is worth noting that the expansion of this pattern is not fully accomplished and both the original and analogically altered forms have been recorded in free speech. The altered form is therefore a variant, which coexists alongside the source form. Once the irregular form was produced in the interview, the speaker was asked to elicit the conjugation of the verb ‘to think’, which is presented as Output 2. First, however, let us consider the original form, whose conjugation was uttered by the same informant on another occasion:

|      | S-stem          | P-stem          |
|------|-----------------|-----------------|
| 3MSG | <i>xamməm</i>   | <i>yxamməm</i>  |
| 3FSG | <i>xamməmət</i> | <i>txamməm</i>  |
| 2MSG | <i>xamməmt</i>  | <i>txamməm</i>  |
| 2FSG | <i>xamməmti</i> | <i>txamməmi</i> |
| 1SG  | <i>xamməmt</i>  | <i>nxamməm</i>  |
| 3PL  | <i>xamməmu</i>  | <i>yxamməmu</i> |
| 2PL  | <i>xamməmtu</i> | <i>txamməmu</i> |
| 1PL  | <i>xamməmnə</i> | <i>nxamməmu</i> |

As can be seen below, the original form of the MSG *xamməm* tends to be shortened to *xamm*, particularly in a fast stream of speech. Due to the phonetic reduction, the third radical merges with the geminated second radical, giving rise to a form, which is identical to that of the stem I geminated. Subsequently, this form is reanalysed as belonging to the stem I and therefore following the pattern of *ḥabb* – *ḥabbēt*, opening the pathway for the analogical extension of this conjugation. Hence the expected form of 1SG and 2MSG *xamməmt* ‘I/you (m) thought’ is replaced by analogically deduced *xammēt*:

Output 2: stem II, geminate, *xamməm* ‘to think’

|      | S-stem          | P-stem         |
|------|-----------------|----------------|
| 3MSG | <i>xamm(əm)</i> | <i>yxamməm</i> |
| 3FSG | <i>xammət</i>   | <i>txamməm</i> |
| 2MSG | <i>xammēt</i>   | <i>txamməm</i> |

|      | S-stem         | P-stem         |
|------|----------------|----------------|
| 2FSG | <i>xammēti</i> | <i>txammi</i>  |
| 1SG  | <i>xammēt</i>  | <i>nxamməm</i> |
| 3PL  | <i>xammu</i>   | <i>yxammu</i>  |
| 2PL  | <i>xammētu</i> | <i>txammu</i>  |
| 1PL  | <i>xammēna</i> | <i>nxammu</i>  |

### Case 2: Extension of the stem I conjugation pattern on stems VIII (2nd radical weak) and XI

Another example of the analogical extension of the conjugational pattern of stem I is attested in the verbal morphology of forms VIII and XI in Wad-Souf. Those marginal stems, characterised by an infixed /t-/ after the first radical, and by a long /ā/ after the second radical respectively, under the pressure of stem I, have lost their distinguishing morphological features. I shall start the discussion of this phenomenon from stem VIII. As far as I could establish, no sound root occurs in stem VIII neither in Jewish Gabes, nor in Jewish Wad-Souf.<sup>8</sup> This is primarily to the fact, that sound roots occurring originally in stem VIII shifted either to the T-passive stem, e.g. *\*ltamm* > *tlamm* ‘to gather’ in Jewish Wad-Souf, or to stem V, e.g. *\*ntfax* > *tnəffax* ‘to get swollen’ in Jewish Gabes.<sup>9</sup> The original form of stem VIII is, however, attested in the Bedouin dialect of Douz, where the infixed /t/ morpheme remains after the first radical, e.g. *ʔntʔfix* – *yintʔfix* ‘to get swollen’ (Ritt-Benmimoun 2014: 370). When the second radical is a weak consonant, i.e. /y/ or /w/, it shifts to a long /a/ vowel, which occurs throughout both the suffix and the prefix conjugations. Let us now consider the regular conjugation of the verb ‘to choose’ (root: √xyr) in stem VIII 2nd radical weak in Jewish Gabes:

|      | S-stem        | P-stem         |
|------|---------------|----------------|
| 3MSG | <i>xtār</i>   | <i>yəxtār</i>  |
| 3FSG | <i>xtārt</i>  | <i>təxtār</i>  |
| 2MSG | <i>xtārt</i>  | <i>təxtār</i>  |
| 2FSG | <i>xtārti</i> | <i>təxtāri</i> |

<sup>8</sup> Several sound roots in stem VIII are attested in Jewish Tripoli (Yoda 2005: 179). The situation in Jewish Tunis, on the other hand, resembles that of the two dialects under investigation, i.e. only several irregular roots are attested in this stem.

<sup>9</sup> This matter is discussed in a greater detail in Case 4.

|     | S-stem        | P-stem         |
|-----|---------------|----------------|
| 1SG | <i>xtārt</i>  | <i>nəxtār</i>  |
| 3PL | <i>xtārna</i> | <i>yəxtāru</i> |
| 2PL | <i>xtārtu</i> | <i>təxtāru</i> |
| 1PL | <i>xtāru</i>  | <i>nəxtāru</i> |

Against this background, let us now consider the conjugation of the same verb in Jewish Wad-Souf:

|      | S-stem        | P-stem        |
|------|---------------|---------------|
| 3MSG | <i>xtār</i>   | <i>yuxtar</i> |
| 3FSG | <i>xtārt</i>  | <i>tuxtar</i> |
| 2MSG | <i>xtārt</i>  | <i>tuxtar</i> |
| 2FSG | <i>xtārti</i> | <i>tuxtri</i> |
| 1SG  | <i>xtārt</i>  | <i>nuxtar</i> |
| 3PL  | <i>xtārna</i> | <i>yuxtru</i> |
| 2PL  | <i>xtārtu</i> | <i>tuxtru</i> |
| 1PL  | <i>xtāru</i>  | <i>nuxtru</i> |

Inasmuch as the suffix stem preserves the original long /ā/ vowel, in the prefix conjugation it is significantly reduced, while the infix /t-/ is reanalysed as a part of the root. Hence, the conjugational pattern of the prefix form follows the I stem pattern in analogy to the type *rgud* – *yurgud* ‘to fall asleep’:<sup>10</sup>

|      | S-stem        | P-stem        |
|------|---------------|---------------|
| 3MSG | <i>rgəd</i>   | <i>yurgud</i> |
| 3FSG | <i>rəgdət</i> | <i>turgud</i> |
| 2MSG | <i>rgədət</i> | <i>turgud</i> |
| 2FSG | <i>rgətti</i> | <i>turgdi</i> |
| 1SG  | <i>rgədət</i> | <i>nurgud</i> |
| 3PL  | <i>rəgdu</i>  | <i>yurgdu</i> |
| 2PL  | <i>rgəttu</i> | <i>turgdu</i> |
| 1PL  | <i>rgədna</i> | <i>nurgdu</i> |

<sup>10</sup> The thematic vowel.

The example below demonstrates even further extension of the stem I pattern, involving also suffix forms in Jewish Wad-Souf:

Stem XI, *ḥmār* ‘to blush’

|      | S-stem        | P-stem        |
|------|---------------|---------------|
| 3MSG | <i>ḥmār</i>   | <i>yáḥmar</i> |
| 3FSG | <i>ḥāmrət</i> | <i>táḥmar</i> |
| 2MSG | <i>ḥmart</i>  | <i>táḥmar</i> |
| 2FSG | <i>ḥmarti</i> | <i>táḥmri</i> |
| 1SG  | <i>ḥmart</i>  | <i>náḥmar</i> |
| 3PL  | <i>ḥamru</i>  | <i>yáḥmru</i> |
| 2PL  | <i>ḥmartu</i> | <i>táḥmru</i> |
| 1PL  | <i>ḥmarna</i> | <i>náḥmru</i> |

The long /ā/ inserted after the second radical, which is the hallmark of stem XI, is reduced in all forms except for 3MSG and 3FSG, resembling the regular conjugational pattern of the stem I, e.g. *ḏḥak* ‘to laugh’. In addition, in the prefix conjugation, the stress is placed on the penultimate syllable, and not on the ultimate syllable containing the shortened /ā/ (see the parallel conjugation in Jewish Gabes below). The quantitative reduction of the long /ā/ triggered analogical subduction of form XI under the pattern of stem I. Interestingly, in Jewish Gabes, this analogical extension is not attested and both stem VIII and XI preserve their long /ā/ vowel, preventing the expansion of the conjugational pattern of stem I. Let us consider the conjugation of the verb *ḥmār* ‘to blush’ in Jewish Gabes:

|      | S-stem        | P-stem         |
|------|---------------|----------------|
| 3MSG | <i>ḥmār</i>   | <i>yəḥmār</i>  |
| 3FSG | <i>ḥamrət</i> | <i>təḥmār</i>  |
| 2MSG | <i>ḥmārt</i>  | <i>təḥmār</i>  |
| 2FSG | <i>ḥmarti</i> | <i>təḥmri</i>  |
| 1SG  | <i>ḥmārt</i>  | <i>nəḥmār</i>  |
| 3PL  | <i>ḥamru</i>  | <i>yəḥmāru</i> |
| 2PL  | <i>ḥmartu</i> | <i>təḥmāru</i> |
| 1PL  | <i>ḥmarna</i> | <i>nəḥmāru</i> |

### Case 3: Reanalysis of the subordination particle as a discourse dependency marker

This case deals with the reanalysis of the subordination particle /bāš/, which, as explained by Cohen, consists of the preposition /b/ and the interrogative particle /āš/ ‘what’ (1975: 258). The etymology of this item suggests that originally it served to introduce adverbial clauses of purpose, i.e. parallel to Spanish *para que*, which also include the ‘what’ element. This usage is exemplified by the following sentences from Jewish Gabes:

- (1) *yəlžəmma*                      *ṭabḥaṣ*                      *bāš*                      *tədxəl*  
 must.FSGX.3FSG.her      bend.PFX.3FSG      SUB                      enter.PFX.3FSG  
 ‘She had to bend over in order to enter.’
- (2) *xūya*                      *kif*                      *yži*                      *a‘ṭiy*  
 brother.mine                      when                      come.3MSG.FSGX                      give.IMP-him  
*flūš*                      *bāš*                      *ya‘māl*                      *šəbbāt*  
 money                      SUB                      make.PFX.3MSG                      Shabbat  
 ‘When my brother comes, give him money so that he can have Shabbat.’

Similarly, in Jewish Wad-Souf, where the particle /bāš/ has two allomorphs, i.e. /bəš/ and /məš/:<sup>11</sup>

- (3) *ğarblu*                      *l-ṛmāl*                      *bəš*                      *ywəlli*                      *kull*      *ṇḏīf*  
 sift.FSGX.3PL                      DEF-sand      SUB                      become.PFX.3PL      all      clean  
 ‘They were straining the sand in order to make it all clean.’

In those sentences, the realisation of the state of affairs<sup>12</sup> included in the subordinate clause is dependent on the main clause in that the main state of affairs (SoA) had to occur to enable the realisation of the dependent SoA. As I demonstrate in the following paragraph, this logical contingency has furnished a further expan-

<sup>11</sup> It appears that this allomorphic variation is free and is not conditioned phonologically. Nevertheless, new portions of data and further research should cast more light on this matter.

<sup>12</sup> Following the terminology proposed by Cristofaro, the events coded by the main and the dependent clause shall be referred to as ‘states of affairs’ (SoA). This term has been borrowed from Functional Grammar (Siewierska 1991) and is more precise than ‘event’, as the latter implicates dynamicity and punctuality (Cristofaro 2005: 25).

sion of the primarily purpose marking particle /bāš/ to introduce content clauses and order complements. Let us now consider the following sentence from Jewish Gabes (4) and Jewish Wad-Souf (5):

- (4) *hūwa qarṛər bāš yšakkər əl-ḥānūt*  
 he decide.FSGX.3MSG SUB close.PFX.3MSG DEF-shop  
*wa yəmšī mən blād*  
 and go.PFX.3MSG from city  
 ‘He decided that he will close the shop and leave the city.’

- (5) *rāš əl-blād ḥkəm ‘al yahūd məš yšakkru əḥwānət*  
 head DEF-city order.FSGX.3MSG on Jews SUB close.PFX.3PL shops  
 ‘The mayor of the city ordered Jews to close their shops.’

The dependency of the subordinate SoAs in sentences (4) and (5) is different from that in purpose clauses, where there is a close semantic link between the independent and dependent SoAs, e.g. in (1) the semantic integration between the action of bending over and entering. A closer look at the two clauses in (4) and (5) reveals that the semantic relationship between the two clauses is not as close as in purpose clauses and the SoAs are more independent. Nonetheless, the logical link between the two SoAs is similar, i.e. the occurrence of the SoAs in the dependent clause is subject to the occurrence of the main SoAs. In this way, /bāš/ has been extended onto semantically independent but logically linked content clauses. Thus, /bāš/ in (4) essentially introduces the content of the decision, while the same particle in (5) introduces the content of an order or request.

However, Jewish Wad-Souf attests to even further development of this particle. Namely, in this dialect, it occurs in a non-subordinate context:

- (6) *kān məš yəšru ḥāža u ybīʿu ḥāža*  
 to be.FSGX.3MSG SUB buy.PFX.3PL thing and sell.PFX.3PL thing  
 ‘They **would** buy or sell something.’
- hāḏa hūwa ma kān*  
 this.MSG he REL to be.FSGX.3MSG  
 ‘This is what it was.’

|                                         |            |                  |              |             |            |              |                  |
|-----------------------------------------|------------|------------------|--------------|-------------|------------|--------------|------------------|
| <sup>HE</sup> <i>avál</i> <sup>HE</sup> | <i>bəš</i> | <i>yəṭṣaḥḥbu</i> | <i>ṣaḥba</i> | <i>gəlb</i> | <i>ʿal</i> | <i>gələb</i> | <i>glil glil</i> |
| but                                     | SUB        | befriend.PFX.3PL | friendship   | heart       | on         | heart        | hardly           |

‘But they **would** hardly be heartfelt friends.’

The fragment has been excerpted from a middle of a narrative about relationships between Jews and Muslims in Wad-Souf. As can be seen, the subordinate particles /məš/ and /bəš/ do not introduce a syntactically embedded clause. The first sentence of the fragment would be grammatically correct also without /məš/ and would have the meaning of past habitual. Why did the speaker choose to insert the purposive subordinator? The explanation lies in the reanalysis of this particle as a discourse dependency marker. Since in subordinate clauses it encodes a contingency of the embedded clause on the main clause, it was analogically reanalysed as a marker of a higher level dependency, namely the discursive one. Hence in sentences, where the subordinate particle does not introduce a subordinate clause, it marks a contingency of a segment of discourse on the previous parts of the narrative. Such a continuation is usually expressed by an elaboration in order to provide more details of what has just been said. The general framework of the symbiosis between Jews and Muslims in Wad Souf was outlined before by the sentence: *ygūlu l-məšlmīn hūma tamīm, yaʿni mūš tāʿna ḥna, mūš məntāna; ma ygarrbūhəm yāšər* ‘they were saying that the Muslims are impure, it means they are not like us, they are not from us; they (i.e., the Jews) would not get too close to them’. After this segment of discourse, the /məš/ particle comes to mark that the story it precedes depends on what has been previously outlined and functions as elaboration.

Crosslinguistically, purposive clauses provide fertile ground for the emergence of new grammatical markers and constructions (Schmidtke-Bode 2009). Interestingly enough, within the Semitic family, the pathway of evolution from the purpose clauses to discourse dependency forms is attested in some varieties of North-Eastern Neo-Aramaic (NENA). Let us first have a look at a purpose clause, which in NENA can either be introduced by a *ta* ‘to’ particle, or asyndetically (Khan 2021: 181). As can be seen, in those dialects, the bare present stem *qatəl* functions as a subjunctive:

- (7) Christian Barwar (Khan 2021: 177)

|                                                         |                      |                           |
|---------------------------------------------------------|----------------------|---------------------------|
| <i>ṣəlye = le<sup>l</sup></i>                           | <i>ta-t-ʿázəl</i>    | <i>ʾūrxə.<sup>l</sup></i> |
| go.down.PTCP = cop.3MSG                                 | to-comp-go.SBJV.3MSG | way                       |
| ‘He went down in order to set off on the road.’ (A15:5) |                      |                           |

However, the same subjunctive verb form is found outside of the subordinate context, i.e. without being preceded by an embedding verb:

(8) Christian Urmi (Khan 2016 2: 122)

*mājjət = da*      ʾá      *náša*      *xəšlə*<sup>1</sup>      *ǰášəḵ*  
indeed = also      this      man      go.pfv.3MSG      see.SBJV.3MSG

ʾó      *bétu*      *súra*      *víyyə = va*      *xa*      *yacca*  
that      his.house      small      become.PTCP = cop.pst.3MSG      a      big

*máx*      *bátət*      *mālcə*      *víyyə = va*.<sup>1</sup>  
like      house.of      kings      become.ptcp = cop.pst.3ms

‘Indeed the man went off and **saw** that his small house had become huge, it had become like the house of kings.’ (A 54:5)

The syntactic dependency encoded by the /t-/ particle in example (7) is extended functionally to mark also discourse dependency in example (8) by means of reanalysis. Since the event expressed by the purpose clause is posterior to the main, embedding clause, the subjunctive form of the purposive clause was reanalysed as factual and started being used in the context of past habitual, or when a sequence of events takes place (Khan 2021:180). In those instances, the subjunctive form continues the line of narration started by a regular narrative past form, on which it is temporally and logically dependent. It seems that the same temporal implicature underlines the development attested in Jewish Wad-Souf, where the ‘dependant’ verb forms are flagged by the purposive particle.

#### 4.2 Convergence of internally and externally motivated factors

In the second part of the analytic section of this paper, I shall discuss two cases of analogical extension, whose target form resembles forms found in a donor language. Under these circumstances, the analogical change is analysed as being catalysed by language contact.

#### Case 4: Extension of the /t-/ passive prefix

It has been shown in Table 1 that some verb stems occurring in Classical Arabic are only scarcely attested in the Maghrebi dialects (form VI and XI), while others have uneven geographical distribution (IV, VII). This is particularly the case with stems expressing passivity and reflexivity. Depending on the region the passive voice of stem I is realised either through the /n-/ prefix, i.e.  $nəC_1C_2əC_3$ , or the /t-/ prefix, i.e.  $təC_1C_2əC_3$ .<sup>13</sup> In a number of dialects, both stems exist and are

<sup>13</sup> The syllabic structure of the /n-/ stem is not uniform across the region. While in both Jewish Tripoli (Yoda 2005:177) and in Jewish Gabes the schwa is placed after the /n-/ prefix, in

used interchangeably, while in others the two competing forms fulfil different pragmatic functions. Moreover, as will be demonstrated, in Jewish Gabes and in other dialects of the region a secondary process takes place, attesting to an analogical change. In the present section, I argue that the replacement of the OA *n*-stem by a dialectal *t*-stem passive took place in analogy to stems V and VI, which form passive of forms II and III respectively, stimulated by language contact with Berber.<sup>14</sup> The /*t*-/ prefix in those dialects is reanalysed as a marker of passivity, opening a pathway to its extension over the stem VII. In the following paragraphs, I will first describe the distribution of the two stems across North Africa, proposing subsequently a reconstruction of the analogical process leading to the emergence of the /*t*-/ stem.

Let us first discuss the distribution of the /*n*-/ and the /*t*-/ stems in selected dialects of Libya, Tunisia, and Algeria. Within the Libyan dialectological landscape, the passive stem with an /*n*-/ prefix seems to prevail. Indeed, it occurs in Jewish Tripoli, although the /*t*-/ stem seems to be sporadically employed too to express passivity (Yoda 2005: 177). The /*n*-/ stem is well attested and stable also in the Muslim variety of Tripoli (Pereira 2008: 109). In the Muslim dialect of Benghazi, the /*n*-/ stem is dominant, but a limited number of verbs form passive voice with an infixed /*t*-/ (Benkato 2014: 79). Overall, it could be tentatively established that Libyan Arabic exhibits a preference towards the /*n*-/ stem.<sup>15</sup>

The Tunisian varieties seem to be more heterogeneous in terms of their expressions of the passive. Within the Bedouin varieties of Tunisian Arabic, the central and northern dialects employ the /*t*-/ type passive, while the southern ones utilise the /*n*-/ type (Basset 1950: 215). The /*n*-/ stem is attested among others in the Bedouin dialect of Marāzīg (Ritt-Benmimoun 2014: 361).<sup>16</sup> In terms of sedentary dialects, according to D. Cohen, some vestiges of this conjugation can be found also in the Jewish dialect of Tunis (Cohen 1975: 125). Nevertheless, this prefix seems to be perceived as unusual and artificial, since its speakers tend to use a hybrid prefix /*tən*-/ consisting of the combination of the /*n*-/ prefix and the morpheme /*tə*-/, which are naturally associated with passivity and reflexivity. As a result, one can find forms like *tənḍrab* 'he was hit' (Cohen 1975: 124). The /*n*-/ prefix has completely disappeared from both the Muslim dialect of Sūsa, in which the reflexive-passive function was acquired subsequently by the pattern

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the dialect of Douz the vowel is placed after the first radical and the initial consonantal cluster is resolved by an epenthetic vowel, i.e. *ənfiṭam* 'he was weaned' (Ritt-Benmimoun 2014: 361).

<sup>14</sup> The emergence of the T-passive in analogy to stems V and VI was first proposed by Aggadé and Elyacoubi (1995:65).

<sup>15</sup> Naturally more studies are required in order to confirm this hypothesis.

<sup>16</sup> Bin Murad reports that the formerly Bedouin population inhabiting the region of Nifzawa (southern Tunisia) used the VII and the VIII forms interchangeably in order to encode the passive voice of the stem I, while in the rural community dwelling in the north of the same region the T-passive form prevails (Ritt-Benmimoun 2014: 360).

*tifal* (Talmoudi 1980: 103), and the Muslim dialect of Tunis (Cohen 1975: 125). In these dialects the function of the OA form VII was inherited by the conjugation with the prefix /t-/.<sup>17</sup> Marcel Cohen points out that this type of prefix in the passive conjugation precedes historically the infixation present in the form VIII and is typical to Tunisian dialects (Cohen 1912: 227). On the other hand, the dialects of Djerba feature both the /n-/ stem, as well as the /t-/ stem. The Ibadite variety demonstrates preference towards the /t-/ variant, while the Malakite one favours the /n-/ stem. In addition, the Malakite variety of Ababsa has developed an alternative /l-/ prefix, which is presumably a phonetic variant of /n-/. The /n-/ variant is also attested in the Jewish variety of Djerba Arabic (Behnstedt 1998: 69). In Jewish Gabes the use of passive stems is generally limited, with both the /n-/ and the /t-/ stem being only scarcely attested.

Within the Algerian dialects, the /n-/ stem is very well attested in the Bedouin dialect of Oulad Brahim of Saida (Marçais 1908: 99), as well as in the sedentary dialects of Tlemcen (Marçais 1908: 99) and Oran (Guerrero 2015: 226), where the /n-/ stem has outranked the /t-/ form as the main device for expressing passivity. However, Marçais points out that in some dialects spoken east of Oran (Mazouna, Mostaganem) it is the /t-/ stem that has prevailed (1908: 99). Similarly, the /n-/ stem serves as a principal way of encoding the passive in Jewish Algiers, where the /t-/ prefix has mostly intensive meaning (Cohen 1912: 218). On the other hand, in Jewish Wad-Souf, the /n-/ stem is non-existent, and the /t-/ stem serves as the sole means for expressing the passive: *l-m'āž əddābhu* (by assimilation of the /t-/ to /d/) 'the goats have been slaughtered', *hūwa təḍṛāb* 'he has been beaten', *əl-<sup>HE</sup>sod<sup>HE</sup> təkšāf* 'the secret was revealed'. Similarly, in the north of Constantine and in Djidjelli (Marçais 1956: 193). Grand'Henry reports the prevalence of the /t-/ stem in the Arabic spoken in the region of Mzab (1976).

This brief comparison suggests that neither Tunisian nor Algerian Arabic can be unequivocally classified as /t-/ or /n-/ dialects, as the distribution of those forms is uneven and diverse. It is important to notice that the state of affairs in Morocco is similar. Virtually in all non-Saharan Muslim varieties of Moroccan Arabic, both variants coexist (Heath 2002: 355). In some Jewish dialects, like Debdou, Ksar Es-Souk and Oujda, as well as in the urban belt Rabat-Meknes-Fes the /n-/ stem is the only option. In the western dialects of Jewish Moroccan Arabic, the two forms in question have different grammatical functions, namely the /n-/ stem is usually used with human referents, while the /t-/ stem accompanies non-human nouns. Heath has attested several examples from the hybrid /tn-/ and /nt-/ passives (2002: 355).

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<sup>17</sup> As has been observed by D. Cohen, the usage of ungeminated /t-/ prefix is one of the characteristics of the Eastern Maghrebi dialects, since both Moroccan and Algerian dialects tend to use a geminated prefix /tt-/, i.e. *ttamal* 'to be done' (Cohen 1912: 228, Cohen 1975: 124).

In the Jewish dialect of Gabes, the dominant strategy of expressing the passive is different from the binary system described above.<sup>18</sup> Besides the monopartite /n-/ and /t-/ stems, which are attested only scarcely, often the speakers choose an active verb with an impersonal subject, followed by a direct object, e.g. *qəṭlū* 'they killed him', instead of the anticipated *nəqtāl* or *təqtāl* 'he was killed'. This development, involving a bipartite construction, i.e. a verb and a personal pronoun, conforms to Kuryłowicz's 1st law of analogy, stating that bipartite (complex) markers tend to replace monopartite (simple) ones (1947). This is exemplified among others by the periphrastic future in spoken French (*je vais voyager* instead of *je voyagerai* 'I am going to travel') and some varieties of Spanish (*voy a cantar* instead of *cantaré* 'I am going to sing'), which often comes to replace the monopartite future tense form. As pointed out by McMahon, the analogical change from single to double marking is motivated by disambiguation (1994: 77). This explains why in Jewish Gabes the 3MSG form of the VII stem *nəqtāl*, which can be interpreted as 1S form of the prefix stem, or *təqtāl*, which resembles 2MSG and 3FSG of the prefix stem, is replaced by more overtly marked form *qəṭlū*.

In those dialects, where the /t-/ stem is attested, the /t-/ morpheme of stems V, VI, and VIII, analysed as a marker of passivity, has been extended analogically onto the formation of the passive of from I. From the point of view of analogical reasoning, the "irregular" and non-/t-/ OA /n-/ stem has been fully or partially eradicated since it did not match the mirror-like system of verbal stems. Thus, the analogical development which took place in some dialects of Maghrebi Arabic can be summarised as follows:

if stem II  $C_1\bar{a}C_2C_3$  (active)  
 + /t/ = stem V  $tC_1\bar{a}C_2C_3$  (passive)

and:

stem III  $C_1\bar{a}C_2\bar{a}C_3$  (active) + /t/ = stem VI  $tC_1\bar{a}C_2\bar{a}C_3$  (passive)

then:

stem I  $C_1C_2\bar{a}C_3$  (active) + /t/ =  $tC_1C_2\bar{a}C_3$  (passive)

The survey presented above shows that the distribution of the /n-/ and the /t-/ passive variants is conditioned neither geographically, nor communally. The sole regularity that can be observed is an absence of the /t-/ passive in the Libyan dialects mentioned above. If we accept a hypothesis that the prefixed /t-/ stem was not part of the verb system imported from the Arabian Peninsula in the 7th century CE, but rather emerged regionally at a later stage through the

<sup>18</sup> In order to ascertain similar tendency in other dialects a thorough investigation should be conducted, which, however, due to the limitation of the present article and insufficient data, was not feasible.

analogical extension of the /t-/ prefix of stems V and VI, the question naturally arises where this innovation started. Since the /t-/ stem is poorly attested in Libya, and its distribution in Algeria and in Tunisia seems to be rather random, we could suppose that its diffusion is related to nomadic movements across the region. According to Catherine Taine-Cheikh, the occurrence of the /t-/ stem is much higher in the western dialects than in the eastern ones, where we still find traces of the internal vocalic passive (Taine-Cheikh 1983: 76). One should not exclude therefore a possibility that the analogical extension of this prefix was stimulated by language contact with Berber, where the /t-/ prefix functions as a marker of the passive in many dialects. Heath points out that the shift from infix to prefixed /t-/ passives was influenced probably by Berber, which has similar prefixed /t-/ passives (2002: 356). Below one can find several examples of the /t-/ passive in Berber:

| Dialect                  | Active                  | Passive                      |
|--------------------------|-------------------------|------------------------------|
| Awjila (eastern Libya)   | <i>āmt</i> 'to bury'    | <i>ittemt</i> 'to be buried' |
| Touareg of Iwellemmeden  | <i>elmed</i> 'to learn' | <i>tālmād</i> 'to be learnt' |
| Kabyle                   | <i>gzem</i> 'to cut'    | <i>ttegzem</i> 'to be cut'   |
| Chleuh                   | <i>šš</i> 'to eat'      | <i>ttš</i> 'to be eaten'     |
| Figuig (eastern Morocco) | <i>sek</i> 'to build'   | <i>ttwasek</i> 'to be built' |

Table 2. Formation of the passive in Berber (based on Kossmann 2002)

Indeed, the /t-/ prefix is a common marker of passivity in many varieties of Berber. Although language contact and analogy tend to be perceived in linguistics as two separate phenomena, cases like this form ground to an intersection of those two factors. Namely, when a target form of an analogical change is similar to a form found in a language in contact, the latter can act synergetically as an additional factor of a language change. In the case of the /t-/ prefix, it is plausible that since within Arabic, there had existed a potential for the analogical extension of the /t-/ passive marker, the language contact with Berber stimulated and accelerated this development, triggering the loss of the stem VII in some varieties. It is worth noting that the emergence of the /t-/ passive stem is not limited only to the Maghreb. Also in some dialects of Upper Egypt and the Levant, where the Berber influence is not expected, we observe the loss of the /n-/ stem (Nishio

1995: 209). It is rather difficult to establish whether we deal here with two independent phenomena, or there exists some sort of historical continuum between those dialectal families.<sup>19</sup>

### Case 5: Extension of the strict agreement pattern

The patterns of grammatical agreement have recently gained a lot of attention in the scholarship of both literary and dialectal forms of Arabic. The general interest in grammatical concord resulted in several pioneering studies, casting new light on its diachronic development. In dialectology, agreement patterns in Tunisian Arabic are well-described thanks to the studies on Southern Bedouin dialects of Tunisian Arabic (Ritt-Benmimoun 2017), as well as the urban north (Procházka and Gabsi 2017). There exist numerous studies on this phenomenon in Cairene Arabic (Belnap 1991, 1993, 1994, 1999), the Libyan dialect of Fezzan (D'Anna 2017), and Omani Arabic (Bettega 2018). Similarly, also in the realm of Quranic and Classical Arabic, the topic has received a lot of scholarly attention (Reckendorf 1921:24; Freguson 1989; Belnap and Shabaneh 1992, 1994; Dror 2013, 2016; D'Anna 2020). Finally, the problem of grammatical concord in both written and spoken forms of Arabic has been extensively treated in Bettega and D'Anna (2023). Against this background, grammatical concord in Jewish varieties of North African Arabic remains *terra incognita*. The exception to this tendency is the grammar of Jewish Tripoli, where Yoda mentions that plural nouns always agree with their arguments (Yoda 2005: 285).

A study of grammatical concord in Judaeo-Arabic has the potential to make a significant contribution to our knowledge of this grammatical phenomenon for two reasons. Firstly, there exists a wealth of textual Judaeo-Arabic sources, which reflect both the literary and the colloquial language alike, and therefore might reveal invaluable information about the diachronic development of the agreement. Secondly, since Judaeo-Arabic dialects in the second half of the 20th century were transplanted from their natural environment into Hebrew-speaking Israel, one can assume that the Israeli Hebrew system of strict agreement has affected the Judaeo-Arabic. The study of this phenomenon can be crucial for establishing the sensitivity of grammatical concord in a language contact situation. To this end, in the following paragraphs, I will analyse several examples of grammatical concord in a few dialects of North African Arabic, simultaneously providing historical data where possible. I argue, that, as in the previous case, the

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<sup>19</sup> The emergence of the /t-/ stem in the eastern dialects might have been stimulated by the passive verb forms with the /t-/ prefix in Aramaic (Bunis 2018: 185). One can imagine a situation, where during the Arabization of North Africa this form spread westwards and was further promoted by a parallel form in Berber.

generalisation of the strict agreement in modern dialects of Maghrebi Judaeo-Arabic took place at the intersection of analogy and language contact.

One of the most striking features of the syntax of the surviving varieties of Maghrebi Judaeo-Arabic is their strict grammatical agreement. This tendency stands in striking contrast to the Muslim and Bedouin dialects, where plural controllers low in animacy and individuation trigger agreement with 3rd personal singular feminine. This type of agreement in the present study will be called 'deflected'.<sup>20</sup> The situation prevailing in those varieties has in fact long historical tradition. Some modern dialects, like Cairene and Damascus Arabic, reflect similar variation between strict and deflected agreements as found in Old Arabic sources (e.g., pre-Islamic poetry) and Christian Middle Arabic, reflecting colloquial language (Belnap and Gee 1994: 131). In contradistinction to this tendency, in Classical Arabic a rapid generalisation of the rule of deflected agreement with nonhuman controllers took place.<sup>21</sup> Against this historical background, two questions arise regarding the evolution of the agreement in Judaeo-Arabic. Firstly, do Judaeo-Arabic sources reflecting the spoken language point to a similar level of variation, or rather the distribution of the deflected agreement in this variety has always been rather limited? And secondly, has the prevalence of the strict agreement in modern varieties been caused by language contact with Israeli Hebrew, or is rather rooted in the internal development of Judaeo-Arabic?

In order to better understand the nature of the agreement in Judaeo-Arabic, let us first discuss this phenomenon in non-Jewish Arabic from a diachronic perspective. As pointed out below, we can assume with a high degree of certainty that, in contradistinction to Classical Arabic, the system of agreement in non-Jewish Arabic has been relatively stable, exhibiting variation between the strict and the deflected options. Belnap and Gee in their quantitative study of the occurrence of different variants of agreement in textual sources from between the 6th and the 14th century demonstrate that the agreement with nonhuman plural heads was almost equally distributed between feminine singular, feminine plural, and broken plural. For instance, in works of Imru' al-Qays from the 6th century, those categories account respectively to 38%, 31%, and 31% of the occurrences, while in Al-Xansā' from the 7th century to 48%, 27%, and 25% (Belnap and Gee 1994: 132). Those proportions are disrupted from the 7th century onward when the deflected agreement becomes the only option for non-human heads. The explanation for this development is rather complex, but we can assume that along with the introduction of the Quran and activities of grammarians and non-native speakers of Arabic intellectuals, written

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<sup>20</sup> Following Belnap and Gee (1994) and Ritt-Benmimoun (2017).

<sup>21</sup> As argued by Belnap and Gee, the generalisation of the pre-existing deflected agreement in CA might have taken place due to the scribal practices of non-native speakers of Arabic, who were unsure of the rules of variation between the two types of agreement (Belnap and Gee 1994:141).

Arabic became more prescriptive and more detached from the spoken language (Belnap and Gee 1994). As stated above, many modern dialects of Arabic still reflect the OA system, which exhibits the two types of agreement. This is also the case in North African dialects when the head is low in individuation and generic. Several examples from Muslim Tunis can be found below:<sup>22</sup>

- (9) *l-klēb*                      *bdēt*                      *tēkəl*  
 DEF-dogs                      start.FSGX.3FSG                      eat.PFX.3FSG  
 ‘The dogs started eating.’
- (10) *kif*    *l-‘abēd*                      *bdēt*                      *təžri*                      *l-qtaṭēs*    *harbət*  
 when DEF-people                      start.FSGX.3FSG    run.PFX.3FSG    DEF-cats    flee.FSGX.3FSG  
 ‘When people started running, the cats fled.’

However, controllers with a higher degree of individuation are in strict agreement with their targets:<sup>23</sup>

- (11) *ər-ržēl*                      *qā‘dīn*                      *yošrbu*                      *fi-qahwa*  
 DEF.men                      sit.AP.PL                      drink.PFX.3PL                      in-coffee  
 ‘The men are drinking coffee.’

As confirmed by Procházka and Gabsi, the deflected agreement with human controllers is rather rare and limited to *nās* and *‘abēd* as collectives denoting people, but other groups of nouns demonstrate a wide array of variation (2017: 245). A similar tendency is attested in the Bedouin dialect of Nifzāwa (Tunisia) and in Benghazi (Libya) (Ritt-Benmimoun 2017; Benkato 2014: 88).<sup>24</sup>

Against this background, in several Jewish dialects of North African Arabic the strict agreement is the only available variant. This has been already pointed out by Yoda for Jewish Tripoli (2005). Jewish Gabes (Southern Tunisia) and Wad-Souf (Eastern Algeria) are additional two dialects, where, at least synchronically, we observe this tendency:

<sup>22</sup> Based on author’s own data.

<sup>23</sup> As pointed out by Brustad, also the gender of the controller can affect the choice of agreement, with masculine nouns being more individuated and animate (Brustad 2000: 38).

<sup>24</sup> To a lesser extent in the south-Libyan dialect of Fezzan, where the deflected agreement account to only 10% of occurrences of plural heads. Nevertheless, the data for this dialect do not contain abstract and less individuated nouns, and therefore is not representative for the distribution of the deflected agreement (D’Anna 2017: 119).

## Jewish Gabes (Tunisia)

- (12) *l-ʿaṣāfir*    *əlli*    *šəfthəm*                    *āməš*    *žāw*                    *mən*    *š-šəhra*  
 DEF-birds    REL    see.FSGX.1SG.them    yesterday    come.FSGX.3PL    from    the-desert  
 ‘The birds that you saw yesterday had come from the desert.’
- (13) *tlāta*    *baṭṭixāt*            *li*    *baʿtəthəm*                    *bəntək*            *fihəm*    *ramz*  
 three    watermelons    REL    send.FSGX.3FSG.them    daughter.your    in.them    hint  
 ‘The three melons that your daughter sent you, there is a hint in them.’
- (14) *dār*                    *l-aʿrīš*                    *əbdāw*                    *yğannīw*  
 house                    DEF-groom                    start.FSGX.3PL                    sing.PFX.3PL  
 ‘The family of the groom started singing.’
- (15) *ənnša*                    *žāw*                    *yəṭlbu*                    *l-ma*  
 women                    come.FSGX.3PL                    ask.PFX.3PL                    DEF-water  
 ‘Women came to ask for water.’

## Jewish Wad-Souf

- (16) *kān*                    *šəkkāt*    *kānu*                    *yəṭrbu*                    *nsāwīnhəm*    *maʿrūfīn*  
 be.FSGX.3MSG    families    be.FSGX.3PL    hit.PFX.3PL    women.their    know.PP  
 ‘There were families, which were known for hitting their women.’
- (17) *kānu*                    *nās*    *yğūlu*                    *hāḏi*    *əš-šəkka*    *šəkkət*    *əz-žabda*  
 be.FSGX.3PL    people    say.PFX.3PL    this.FSG    DEF-family    family    DEF-butter  
 ‘People would say: this family is very mild (literally: this family is a family of butter).’
- (18) *l-mʿāz*                    *mātu*                    *bi-l-mṛāḏ*  
 DEF-sheep                    die.FSGX.3PL                    in-DEF-disease  
 ‘The sheep perished because of the disease.’
- (19) *l-wulād*                    *l-kull*                    *xaržu*                    *mən*    *mádrasa*  
 DEF-children                    DEF-all                    exist.FSGX.3PL                    from    school  
 ‘All the children went out of school.’

- (20) *kānu*            *‘anda*    *tlāṭa*    *arb‘a*            *xarrāfāt*        *t‘āwəḍ*  
be.FSGX.3PL    at.her    three    four            tales            repeat.PFX.3FSG  
  
*‘alīm*            *kull*        *márra*    *hāḍākum*    *xarrāfāt*  
on.them.3PL    every    time    those.3PL    tales  
  
‘She had three or four tales, she would repeat them every time, those tales.’

The examples clearly indicate that strict agreement is the general rule in those dialects, regardless of the level of individuation, human/non-human distinction, or abstract/concrete. Since neither the dialect of Gabes nor that of Wad-Souf preserved the feminine forms of the plural, all the plural controllers are followed by targets in the masculine form of the plural. This tendency is particularly surprising in the case of Wad-Souf. Inasmuch as Gabes is a first-wave, sedentary dialect, Wad-Souf exhibits numerous Bedouin features, e.g. realisation of /q/ as /g/ as in *yǧūlu* ‘they say’, preservation of interdentals, as in *hāḍi* ‘this FSG’, or plural *nsāwīn* ‘women’, instead of the sedentary form *nsa*. One would expect, therefore, that this explicitly conservative dialect would also reflect the Bedouin-type pattern of agreement, characterised by a wide range of variation between the strict and deflected options. Since no case of deflected agreement in this conservative variety has been attested, it seems that in the past its distribution was only marginal, or that it has never been an option. This assumption is further confirmed by a statistical survey of agreement in Jewish Tunis. Below one can find a table summarising the study based on Cohen’s text corpus from 1964:<sup>25</sup>

|                   | Verbs | %         | Adjectives | %   | Pro-nouns | %   | Total %   |
|-------------------|-------|-----------|------------|-----|-----------|-----|-----------|
| Masculine plural  | 104   | <b>90</b> | 17         | 100 | 31        | 100 | <b>93</b> |
| Feminine singular | 11    | <b>10</b> | 0          | 0   | 0         | 0   | <b>7</b>  |
| Total             | 115   |           | 17         |     | 31        |     |           |

Table 3. Agreement patterns in Jewish Tunis (Cohen 1964)

<sup>25</sup> If a plural head is followed by more than one target in the same person, it has been counted as one. Generic sentences without a subject always contain verb in 3PL and therefore have not been considered in the survey. The transcription system of the examples from Jewish Tunis has been adapted from the source.

The corpus in question contains mainly transcriptions of free-speech narratives related to the Jewish community in Tunis, but several poems have been included too. The survey has revealed several striking tendencies. Firstly, the deflected agreement occurs only in verbs. No occurrences of the deflected agreement have been found in adjectives or pronouns. Secondly, out of 163 occurrences of plural heads with their targets, only 11 are in 3FSG, which amounts to only 7% of all the examples. It is important to notice, however, that out of the 11 samples of deflected agreement, 3 appear in poetry, where, they were apparently conditioned by rhyme, like in the following example (Cohen 1964:123):

- (21) *yūm*                      *žəm‘a*                      *‘al-bəkriya*  
 day                      Friday                      early  
*rūhi*                      *xaržət*                      *wəntfāt*  
 spirit.mine              leave.FSGX.3FSG              and.extinguish.FSGX.3FSG  
 ‘Early on Friday, my soul left and extinguished.’
- hīn*                      *šəm‘at*                      *ənnāš*                      *bīya*  
 immediately              hear.FSGX.3FSG              people                      in-her  
*zġār*                      *u-kbār*                      *a‘liya*                      *bkāt*  
 small.PL                      and-big.PL                      on-her                      cry.FSGX.3FSG  
 ‘Immediately people learn about it, young and old cry over me.’

Another unexpected tendency is that all the 11 occurrences of deflected targets accompany human controllers, those are usually *nāš* ‘people’, *nša* ‘women’, or *‘awwadiya* ‘musicians’. Surprisingly, non-human controllers, low in individuation, trigger strict agreement: *daxlu ləqtātoš* ‘the cates entered’, *wel-fonctions ntahha yəlzəmməm yəbdāw doubles* ‘her functions must start being double’ (Cohen 1964: 136, 49). This significantly differs from the situation found in Muslim Tunis, where animals treated as whole and abstract nouns trigger deflected agreement (Procházka and Gabsi 2017).

The data from Jewish Tunis is of paramount importance, as it has been recorded in its natural environment, without any interference from Israeli Hebrew. The question arises whether this type of marginal deflected agreement with non-individuated plural human controllers reflects a situation common for all the varieties of spoken Judaeo-Arabic of the region, or dialects utilised different types of agreement. Unfortunately, a diachronic survey, which could potentially elucidate this issue, is hindered by a lack of available textual Judaeo-Arabic sources from the Maghreb, reflecting the spoken language. Nevertheless, various studies on pre-modern Judaeo-Arabic suggest that the deflected agreement has never

reached the same level of distribution as in the Muslim varieties, remaining rather marginal throughout history.

Blau points out that strict agreement is almost the rule in verb-subject alignment. Both animal and non-animate heads trigger strict agreement in this type of sentences. Interestingly, the only exception to this rule is human controllers, in which case the verb occasionally is in 3FSG (Blau 1961: 131). Similarly, non-human controllers are in strict grammatical agreement with their targets in subject-verb alignment. On the other hand, human controllers sporadically trigger the deflected agreement (Blau 1961: 132). This situation reveals a striking resemblance with Jewish Tunis, where no cases of non-human heads with the deflected agreement have been attested. The rule of strict grammatical agreement has been attested also in sources containing the Egyptian *šarḥ*, i.e. translations of the Bible into Judaeo-Arabic. Although one can argue that this tendency can stem from the verbatim translation of the Hebrew text, where strict agreement prevails, Hary argues that strict grammatical concord is a feature of both Classical Judaeo-Arabic and colloquial Jewish Egyptian (2009: 275). This evidence could potentially point to the difference between the Judaeo-Arabic system of agreement, and the Muslim one, where, as argued before, the deflected agreement remained as an option with non-individuated plural heads.<sup>26</sup>

After discussing patterns of agreement from a comparative perspective, let us now return to the question posited in the first paragraphs: has the strict agreement of some Jewish dialects of the Maghreb (Tripoli, Gabes, Wad-Souf) been triggered by Israeli Hebrew, or is it rather a result of the internal evolution of Judaeo-Arabic? The textual evidence from Judaeo-Arabic, in conjunction with Cohen's transcriptions from 1964, suggests that the system of agreement of Judaeo-Arabic differs from that of pre-Classical poetry and modern Muslim dialects continuum. Namely, in the latter group, the deflected agreement exists as an option with both human and non-human plural controllers, while in the former it is primarily applied with human ones, and only to a very limited extent. It is rather difficult to offer a historical explanation of how this discrepancy emerged, as the past of spoken language is poorly documented. Nevertheless, one can assume that the correlation between

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<sup>26</sup> I am aware of two types of Judaeo-Arabic sources, where the deflected agreement appears with non-human plural heads. I have spotted a couple of those cases in Egyptian folktales and letters of merchants also from Egypt and the Maghreb (Connolly 2018, Wagner 2010). Nevertheless, since no transcription corpus is available, nor a systematic description of agreement in those sources exists, it is difficult to draw any conclusions. Naturally, Judaeo-Arabic did not evolve in complete isolation and therefore one should assume that there were cases of interference of the Muslim variety or its imitation. Wagner points out that the Egyptian varieties of Judaeo-Arabic, which were more central within the Muslim empire, were generally more progressive than the peripheral Maghrebi ones, which retained more conservative features (2010: 14). Thus, examples of deflected agreement with non-human controllers from Egyptian sources should be taken with a pinch of salt, as they might have been affected by the non-Jewish varieties.

deflected agreement and non-individuated controllers has never been fully adapted in spoken Maghrebi Judaeo-Arabic. This state of affairs might be tentatively accounted for by languages, which Jews had been speaking before the first wave of Arabization of the Maghreb, i.e. Late Latin, Berber, and presumably Punic, as in neither of those languages the deflected agreement exists. The liturgical usage of Hebrew and Aramaic, which essentially do not possess the deflected agreement either (Levi 2013), could also potentially contribute to the emergence of the Judaeo-Arabic system of agreement. Nevertheless, if we accept the assumption that there existed a limited usage of deflected agreement in different Jewish dialects of Arabic, how do we explain its complete absence in Jewish Tripoli, Gabes, and Wad-Souf? *Prima facie* the easiest explanation is the influence of Israeli Hebrew, which does not utilise agreement with 3FSG and the strict agreement is a general rule. However, as the above study demonstrates, the deflected agreement in Judaeo-Arabic has never been used to the same extent as in the Muslim one. Thus I would like to raise the possibility that, as in the case of the /t-/ prefix, the rejection of the deflected agreement came about at the intersection of language contact and analogy. Since within Judaeo-Arabic itself there existed a potential for the analogical extension of the strict agreement, i.e. the deflected agreement has never been fully adapted as a viable option, the language contact with Israeli Hebrew triggered the definite extension of this pattern. Consider the following examples from Israeli Hebrew (Glinert 1989: 187, 193):

- (22)    *yeshnam*                      *kshayim*                      *o*                      *en?*  
           there.are.3MPL            difficulties(PLM)            or                      NEG  
           ‘Are there difficulties or aren’t there?’
- (23)    *me’ot*                      *horim*                      *ba’im*  
           hundreds                      parents                      come.3MPL  
           ‘Hundreds of parents come.’

As can be inferred, both unindividuated, non-human (example 22) and human (example 23) controllers trigger in Modern Hebrew the strict agreement. It is important to note that the speakers of Judaeo-Arabic were immersed into the Hebrew-speaking environment of the newly created State of Israel very rapidly, facing often various forms of cultural discrimination from the Ashkenazi population. The linguistic policy of Israel, which encouraged all the Jews to speak only Hebrew, has eventually led many speakers to abandon the active usage of their native Arabic dialect, creating space for language attrition and loss of language complexity. Those socio-linguistic factors presumably explain why the deflected agreement has disappeared from Maghrebi Judaeo-Arabic dialects spoken in Israel so abruptly.

In sum, it is plausible that the analogical extension of the strict pattern in Judaeo-Arabic had been operating at different stages of the historical development of this language, preventing the spread of the deflected agreement, whose presence is attested in historical sources (cf. footnote 26). In this way, in the second half of the 20th century, the deflected agreement, additionally weakened by Israeli Hebrew, has been altogether replaced in analogy to the strict one, which historically had been by far the most common variant.<sup>27</sup>

## 5 Concluding discussion

This article was concerned with processes of analogical extension and reanalysis in Jewish dialects of North African Arabic. Based on the data from Gabes and Wad-Souf, I have demonstrated five instances of analogical change, three of which occur within verb morphology, and two within syntax. The analytical part was divided in two sections.

In the first section, I discussed cases of endogenous analogical change. In case (1), I discussed the extension of the pattern 3rd radical weak over stem II geminate in Wad-Souf. A similar phenomenon was demonstrated in case (2), in which the conjugation of verbs historically belonging to stems VIII 2nd radical weak and XI is altered to conform to the conjugational pattern of stem I. In case (3) I discussed the reanalysis of the subordinative particle /bāš/, demonstrating the trajectory of its development towards a discourse dependency marker. I have drawn several parallels with the distribution of the /t-/ particle in North-Eastern Neo-Aramaic.

On the other hand, section (2) explored the possibility of convergence of analogy and language contact. Case (4) entailed an attempt to explain the conditions under which the /t-/ passive stem emerged in some dialects. It has been argued that this extension was furnished by analogical forms of stems V and VI. Nevertheless, as has been demonstrated, various dialects of Berber also form the passive voice by means of the /t-/ morpheme. This example of language change was analysed as having occurred due to the conjunction of analogy and language change, which was enabled by the existence of the target form in the donor language, in this case—Berber. A multifactorial analysis was also offered in case (5), where patterns of agreement in Judaeo-Arabic were discussed from diachronic

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<sup>27</sup> Using the Optimality Theory, the divergence between the Jewish and Muslim dialects in terms of their choice of the agreement pattern can be accounted for by distinct ranking of the output constraints (Prince and Smolensky 1993; Archangeli 1999). The Evaluation mechanism in the Jewish dialects ranks the rule of grammatical agreement between the subject and its modifiers higher than the level of its individuation and animacy. On the other hand, the evaluation of the input in the Muslim dialects is conditioned by the requirement to adjust the grammatical form of the modifier to the identity of the subject.

and cross-dialectal perspectives. The data from Jewish Gabes and Jewish Wad-Souf clearly indicates that similarly to Jewish Tripoli, those dialects do not feature agreement of plural heads with 3FSG. It has been argued that the deflected agreement was eliminated at the intersection of the analogical extension of the predominant, strict grammatical concord, and contact with Israeli Hebrew, where only strict agreement exists. Based on historical data (Cohen, Blau, Hary), it has been shown that the deflected agreement in Judaeo-Arabic has been always very limited, occurring primarily with plural heads denoting people. This tendency stands in contrast to Muslim sources, where the deflected agreement is prone to occur with non-human controllers. It is therefore plausible, that the analogical extension of the strict agreement in Judaeo-Arabic has been active at all stages of its development, eradicating systematically the deflected variant. Its final elimination was presumably catalysed by language contact with Israeli Hebrew.

The central problem addressed in this study was the functional convergence of analogy and language contact. I have argued that in cases where the target form of a language-internal analogical process resembles a form found in a donor language, those two factors can act synergetically. The tension between internal development and language contact is naturally not confined to analogy. In fact, continuing the parallels with NENA, Geoffrey Khan seems to suggest that the emergence of the discourse-dependent forms might have been stimulated by analogous forms in Northern Kurdish (Khan 2021: 189).

Finally, I would like to posit a question about whether there is a correlation between analogy and the social isolation of the speech community. In the context of North Africa, does Arabic spoken by Jewish communities living in confined areas, in isolation from the Muslim population, feature more cases of analogy? One can easily imagine that the severance from the normative and conservative influence of mainstream Arabic would open a pathway for analogical change. In a similar vein, Marcel Cohen elaborating on the morphology of Jewish Algiers observes: 'Ce parler très évolué, particulièrement détaché de l'influence conservatrice de l'arabe littéraire et des parlers de nomades, a subi profondément dans sa morphologie l'influence de l'analogie, niveleuse des particularités dues aux circonstances phonétiques' (1912: 175). Drawing parallels with the two Jewish dialects discussed in this paper, we observe that Wad-Souf features much more cases of analogical change than Gabes. The reasons for this state of affairs may lie in the social reality of those communities. Indeed, the Jews of Gabes were not confined to one quarter, but very often lived among Muslim families, exposed to their Arabic form. This was not the case in Wad-Souf, where, similarly to Ghardaïa (Tirosh-Becker 2015: 189), the Jewish population was confined to one neighbourhood.<sup>28</sup> The social isolation of this community could possibly render an explanation for the plurality of cases of analogical change in this variety of Arabic.

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<sup>28</sup> Based on the information provided by the informants.

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