On Secondary Grammaticalization: The Case of *ḫatta* in Rural Jordanian Arabic

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Abstract: *Secondary grammaticalization is viewed as a continuation to a grammaticalization path (Traugott 2002) or an independent process that does not necessarily imply the occurrence of a precedent primary grammaticalization (Givón 1991). This paper provides a case from vernacular Arabic supporting the second view, namely, the secondary grammaticalization of the functional ḫatta (its evolution into a proclitic) in Rural Jordanian Arabic. Evidence supporting this view is the selectivity of secondary grammaticalization, which can be summarized as follows: if the source grammatical item has more than one type (i.e., function), some of these types may not undergo secondary grammaticalization. This implies that secondary grammaticalization may not be a late stage completing a grammaticalization path. It can be an independent process that has its own peculiarities and constraints. The constraint, which is the source of selectivity of secondary grammaticalization in this paper, is linked to prosodic prominence: if a grammatical item is typically prominent prosodically in daily conversations, it resists secondary grammaticalization. This finding should also contribute to the previously reported constraints on secondary grammaticalization. In addition to selectivity, it is reported in this paper that the lexical source of the grammatical ḫatta does not seem necessary to its secondary grammaticalization.*

1. Introduction

Grammaticalization is the shift from the lexical domain to the grammatical domain. It is further defined as:

> a type of change whereby lexical items (such as nouns or verbs) gradually turn into grammatical items (such as auxiliaries or pronouns), after which they may continue to evolve into yet more abstract function words or even inflectional affixes. It is a reductive process, characterized by loss of semantic and phonological substance, as well as loss of syntactic freedom. Grammaticalization is therefore a 'composite' type of change, encompassing 'micro-changes' on the levels of phonology, morphology, syntax, semantics and / or discourse, either simultaneously or in succession' (Norde 2019:1).

Some researchers, following Givón (1991), have suggested that two sub-types of grammaticalization (i.e., primary and secondary) should be introduced (cf. Norde 2012, 2019; Traugott 2002; Waltereit 2011; Smirnova 2015). They have also

attempted to define the domain of each sub-type. Primary grammaticalization is unquestionably viewed as the early stage involving the shift from the lexical domain to the grammatical domain. Consider the following examples of primary grammaticalization:

(1)   The evolution of the modal verb *will* denoting futurity in English from the Old English lexical verb *willan* 'to want/to wish' that used to give the meaning of volition.

(2)   The evolution of the modal verbs *can* and *may* that may mean permission from the Old English verbs *cunnan* and *magan* that used to denote ability. (Véliz Campos 2007: 217)

The main sub-processes of primary grammaticalization are decategorization and desemanticization (or semantic bleaching). The former is the shift from a major category into a minor category (Hopper and Traugott 2003) which is commonly characterized with loss of inflections (Norde 2019), whereas the latter is associated with the loss or reduction of the lexical meaning of an item.[1] On the other hand, *secondary grammaticalization* targets grammatical(ized) elements. Hence, 'primary and secondary grammaticalization crucially differ in terms of their input: lexical versus grammatical material' (Breban 2015: 162). Secondary grammaticalization may take a form of reduction, such as turning the auxiliary verb *will* into the clitic *'ll*. It may also lead to expansion in functionality. A good example of this expansion is when the permission-denoting *can* and *may* gained a new meaning, namely, possibility.

The need of the concept *secondary grammaticalization* is debatable and for some researchers is not justified. Further, its delineation is not uncontroversial. In Givón (1991), secondary grammaticalization was presented as a process independent from primary grammaticalization, typically presupposes primary grammaticalization. On the other hand, in some more recent studies (e.g., Traugott 2002, Detges and Waltereit 2002, Kranich 2008), primary and secondary grammaticalization have been viewed as continuous stages that target the endpoint of a grammaticalization chain. The main difference between these views is that in the former the lexical source does not have a significant role in secondary grammaticalization and the goal of secondary grammaticalization is not necessary to reach the endpoint of a grammaticalization chain. An observation that supports this view is that there are some secondary grammaticalization paths which regularly recur in natural languages, even if the lexical source of any of these paths varies cross-linguistically (Givón 1991; Smirnova 2015).

The current paper investigates the secondary grammaticalization of a functional item, namely, the Arabic word *hatta* in Rural Jordanian Arabic (henceforth RJA).[2] It argues that *hatta* is a case of secondary grammaticalization as reduction with no expansion in functionality in the current form of RJA and it should be presented as a process independent from primary grammaticalization, following (Givón 1991). This argument is supported by the observation that secondary grammaticalization can be selective when the source grammatical item has two or more types or functions. *hatta* as a case of polysemy has various meanings (or functions); it can be a preposition, conjunction, resumption particle,

and adverbial particle. The type of *hatta* that underwent secondary grammaticalization (i.e., it was turned into the proclitic *ta-*) is the adverbial one. On the contrary, other types of *hatta* with uses other than the adverbial one did not undergo secondary grammaticalization. The source of this selectivity is a constraint on secondary grammaticalization. The constraint blocking the implementation of secondary grammaticalization in this paper is linked to prosodic prominence. To illustrate, a grammatical item that is typically under focus (to serve some semantic or pragmatic function) in daily conversations should be prosodically prominent and stressed, and therefore it is preserved in its full form and does not undergo secondary grammaticalization. Otherwise, it can be selected for this process. Unlike the other types of *hatta* in RJA, the adverbial one is not required to be under focus and does not have a typical pragmatic function to express in daily conversations; therefore, it does not resist secondary grammaticalization. If the secondary grammaticalization of *hatta* were mere continuation to a grammaticalization path, *hatta* should have underwent secondary grammaticalization with no sensitivity to its various sub-types (or functions). What also argues with the secondary grammaticalization as an independent process in this paper is that the lexical source of *hatta* is not necessarily a pre-requisite to its secondary grammaticalization. These observations imply that primary grammaticalization may lack subsequent secondary grammaticalization, and secondary grammaticalization can occur out of a grammaticalization path. Therefore, the case of the secondary grammaticalization of *hatta* supports the view arguing with the independence of secondary grammaticalization. Worth noting that this paper is not contra the other view due to the possibility that this process can occur in paths. It is rather to argue that secondary grammaticalization can be path-internal or independent from grammaticalization paths.

The structure of the current paper is as follows: Section 2 reviews the main characteristics of secondary grammaticalization. Section 3 explores the uses and denotations of *hatta* in Modern Standard Arabic (MSA) and RJA. Section 4 offers the prosodic prominence constraint blocking secondary grammaticalization and argues that the secondary grammaticalization of the adverbial *hatta* is not a mere phonological process. This section also discusses the processes involved in this grammaticalization, namely, paradigmatization and obligatorification. Obligatorification will be empirically diagnosed by collecting data from 20 RJA native speakers to determine whether or not the secondarily grammaticalized form of *hatta* has obligatorily substituted its source form. Section 4 also questions the existence of a lexical source to this grammatical item. Section 5 presents conclusions.

2. Secondary grammaticalization: its types and its starting point

In the relevant literature, secondary grammaticalization, albeit debatable as a necessary process, is said to have different characteristics. It has been reported that it is characterized by expansion or change in the functionality of a grammatical item (Detges & Waltereit 2002; Kranich 2010; Waltereit 2011; Breban 2014, 2015). This change takes place when a grammatical item is assigned a new functional meaning.

An exemplification of this type is the modal verb *can* in English. This verb denoting ability in (3a), evolved further to mean possibility (Ziegeler 2011; Narrog 2012), as in (3b).

(3)   a. He *can* speak different languages.
         b. That *can* be true.

On the other hand, it has also been reported that secondary grammaticalization is associated with increase in morphosyntactic bondedness and morphophonological reduction (Traugott 2002; Norde 2012, 2019). Traugott (2002: 27), for example, defines secondary grammaticalization as 'the development of morphophonemic 'texture' associated with the categories in question'. This occurs when an existing grammatical (or grammaticalized) item submits to more grammatical restrictions by changing its morphosyntactic status (e.g., from a free grammatical item into a clitic or from a clitic into an affix). Increase in bondedness is characterized by phonological reduction. Phonological reduction makes the target grammatical item more contingent on the surrounding structure. To illustrate, a pronoun as a free grammatical item may appear in more than one position in a sentence; however, once it is reduced (e.g., by coalescence, vowel reduction, or sound/syllable deletion) and turned into a clitic, it becomes conditioned by more structural restrictions; that is to say, it cannot appear alone and must be combined with another phonetic content, such as a host word. Worth mentioning here is that morphosyntactic bondedness and morphophonological reduction, as features of secondary grammaticalization, are said to be caused by an increase in frequency and routinization (Traugott 2002) as grammatical items should be frequently used and therefore rarely receive stress.

Additionally, Kranich (2008, 2010) and Breban (2015) have reported that secondary grammaticalization can be depicted as a process of loss in subjectivity (i.e., de-subjectification or objectification) and increase in obligatorification. In other words, a grammatical word that can express the speaker's attitude loses the ability to perform such a subjective function and is turned into an obligatory grammatical marker. An example of secondary grammaticalization as de-subjectification is the adjective *same* in English (Breban 2015). It had been used as an optional emphasizer and then was tuned into an obligatory anaphoric marker. Thus, the loss of the subjective meaning is depicted in Kranich (2008: 242) as 'a process by which items/constructions become less available for the expression of the speaker's belief state/attitude toward the proposition'.

The previous discussion gives the impression that secondary grammaticalization is by default a continuation of primary grammaticalization (i.e., it targets the endpoint of the grammaticalization chain). A famous exemplification of grammaticalization chains involving primary and secondary grammaticalization is the grammaticalization of the modal verb *will* (Hopper and Traugott 1993), as can be visualized in (4).

(4)

willan 'to want/wish'   >   *will*   >   *'ll*

Primary grammaticalization   Secondary grammaticalization
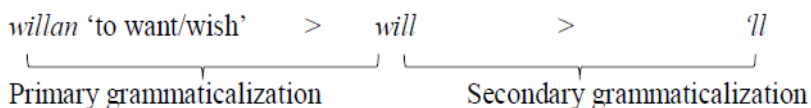
Some researchers have argued that secondary grammaticalization must be fed by a preceding primary grammaticalization (i.e., secondary grammaticalization must have a lexical source and be internal to a grammaticalization chain), such as Traugott (2002). On this basis, secondary grammaticalization is the continuation phase in the following definition of grammaticalization: 'the process whereby lexical items and constructions come in certain linguistic contexts to serve grammatical functions, and, once grammaticalized, continue to develop a new grammatical function' (Hopper and Traugott 2003: xv). It is 'an already grammatical item acquiring a more grammatical function' (Hopper and Traugott 2003: 15).

However, some subsequent researchers, such as Breban (2014), Diessel (2012) and Smirnova (2015), cast doubts on this requirement. Their evidence is based on the observation that several natural languages provide examples of secondary grammaticalization that directly targets grammatical items (not grammaticalized ones). On this basis, the scope of secondary grammaticalization is expanded by taking grammatical items (with no lexical origin) as its input. For example, Diessel (2012) did not find evidence to propose that the definite article that evolved from a grammatical source (a demonstrative pronoun) has a lexical source. Hence, this secondary grammaticalization is more likely not preceded by primary grammaticalization. However, it should be pointed out that the lack of diachronic evidence to the lexical source of a grammatical item does not necessarily mean that the grammatical item is not a product of a grammaticalization process. The inability to find diachronic evidence may indicate that we have no access to such evidence while exploring historical sources; historical sources may lack instances showing the lexical source of a grammatical item.

What also supports the view that secondary grammaticalization is not necessarily a continuation of primary grammaticalization is that secondary grammaticalization is not an obligatory phase within the realm of language change and grammar formation, especially when it comes to increase in bondedness. Several languages have cases of shifting lexical items into the grammatical domain without losing their status as words (Smirnova 2015).[3] This entails that secondary grammaticalization is not an obligatory byproduct of primary grammaticalization, and therefore its function is not necessarily to hit the endpoint of a grammaticalization chain. Further, secondary grammaticalization can be conditioned by a constraint that hinders its application. A factor that has been reported as a constraint on secondary grammaticalization is language type. Specifically, less inflected languages tend to be less influenced by secondary grammaticalization than heavily inflected languages (Breban 2015; Norde 2019). To conclude, cross-linguistically primary and secondary grammaticalization commonly co-occur in grammaticalization chains; however, primary

grammaticalization does not necessitate a subsequent secondary grammaticalization. Contrariwise, secondary grammaticalization may lack a prior primary grammaticalization (i.e., a lexical source).

In addition to its main goal, which is to show how the case of *hatta* supports the independence of secondary grammaticalization from a grammatical chain, the current paper shows that the secondary grammaticalization of *hatta* (its evolution into a proclitic) involves only an increase in morphosyntactic bondedness with no expansion in (semantic/pragmatic) functionality.[4] In doing so, the sub-processes involved in the secondary grammaticalization of this item, including those associated with secondary grammaticalization, such as phonological reduction (Traugott 2002, 2010), paradigmatization and obligatorification (Lehmann 1995), are explored in Section 4.

3. The uses and denotations of *hatta*
3.1 *hatta* in Modern Standard Arabic
In MSA, *hatta* is polysemous (or multifunctional). It can function as a preposition. Prepositional *hatta* assigns genitive case to its object. In (5) below *raʔs*, the object of *hatta*, receives the genitive case marker *-i*. Concerning the denotation of the prepositional *hatta*, it has a temporal (durative) or locative denotation. It denotes continuity to a particular point in time or motion in space to a particular destination. However, as a preposition it does not entail that the temporal endpoint or destination is involved (or reached). In (5), the genitive case assigned to *raʔs* 'head' indicates that the action stopped just before reaching the destination; that is, *the agent ate the fish except its head*, which is the destination. Similarly, the event in (6), which is the spread of peace, stopped just before the temporal endpoint which is *the break of dawn*.

(5)   *ʔakal-a*   *s-samaka-t-a*   *hatta*   *raʔs-i-ha*
         Eat.PST.1.SG.M-NOM   DEF-fish-F-ACC   until/to   head-GEN-3.SG.F.POSS
         'He ate the fish, but its head.'

(6)   *sala:m-u-n*   *hiya*   *hatta*   *matlaᶜ-i*   *l-fajr*
         Peace-NOM-INDEF   3SG.F   Until/to   rise-GEN   DEF-dawn

         Intended: 'Peace prevails until the break of dawn'.

Hence, the prepositional *hatta* is somehow synonymous with *ʔila* 'to'. However, *ʔila* does not necessarily exclude the destination or the temporal endpoint (Wright 1981). On this basis, the use of *ʔila* in place of *hatta* in (5 and 6) may suggest that the action/event did not stop until the locative destination is reached or the temporal endpoint comes. Thus, the use of *ʔila* entails that *the doer ate the whole*

fish including the head in (5), and *peace was temporarily present while the light is breaking* in (6).

Additionally, <u>hatta</u> can also be a resumption particle that introduces a new sentence. The most distinctive feature of the resumptive <u>hatta</u> is a syntactic one: it is not a case assigner. In (7), the nominal *raʔs*, which follows the resumptive <u>hatta</u>, hosts the nominative case marker *-u* as it is the subject of a verbless sentence. This shows that <u>hatta</u> in (7) is neutral when case markers are assigned to its subsequent elements. Incidentally, note that this sentence ends with a participle adjectival predicate *maʔku:l*; however, it is typically omitted as it can be contextually understood.

(7)   *ʔakal-a*   *s-samaka-t-a*   <u>hatta</u>   *raʔs-u-ha*
       eat.PST.1.SG.M-NOM   DEF-fish-SG.F-ACC   even   head-NOM-3.S.GF.POSS
       (*maʔku:l*)
       eaten
       'He ate the fish. Its head is eaten.'

<u>hatta</u> can also function as a coordinating conjunction. It is equivalent to the Arabic coordinating *wa* 'and'. In this case, the two coordinated elements will be assigned the same case marker. In (8), the object nominal *s-samakat* and the coordinated nominal *raʔs* are marked with the accusative case marker *-a*. Unlike the sentence in (5), the sentence in (8) indicates that the destination (the head of the fish) is involved in the action: the head of the fish was eaten as well.

(8)   *ʔakal-a*   *s-samaka-t-a*   <u>hatta</u>   *raʔs-a-ha*
       eat.PST.1.SG.M-NOM   DEF-fish-SG.F-ACC   to   head-GEN-3.SG.F.POSS
       'He ate the fish along with its head.'

<u>hatta</u> can also be adverbial. In MSA, it assigns the accusative case to verbs. In (9), <u>hatta</u> is followed by a perfective verb that is marked with the accusative marker *-a* with durative or locative reference. It denotes the continuance of an action/event to a certain destination or to a particular point of time. As example (9) shows, the act of walking continued to the locative destination in (9a) and to the moment of tiredness in (9b).

(9)   a. *mashay-na*   <u>hatta</u>   *waṣal-na*
       Walk.PST-1.PL   till   reach.PST-1.PL
       'We had been walking till we reached our destination.'
       b. *mashay-na*   <u>hatta</u>   *taᶜib-na*
       Walk.PST-1.PL   till   get tired.PST-1.PL
       'We had been walking till we got tired.'

Adverbial <u>hatta</u> has a causative sense when it is followed by an imperfective verb. In (10), it is somewhat equivalent to *in order to* in English with the

imperfective verb *na-njah*. Worth noting is that turning the imperfective verb into perfective entails that *hatta* can only be a locative or temporal adverb.

(10) *daras-na*   *hatta*   *na-njah*
      Study.PST-1PL   in order to   1PL-pass.PRES
      'We studied in order to pass.'

Another denotation to *hatta* with imperfective verbs is that it gives rise to the exclusion reading when it co-occurs with negation (Al-bagar 2018). In (11), *hatta* is restrictive/exclusive: it sets the exceptional condition under which the negation does not apply.

(11) *lan*   *ʔabrah*   *al-maka:n*   *hatta*   *taqu:l*
      NEG.FUT   leave.1.SG   DEF-place   until/unless
      2.SG.M.say
      'I will not leave until/unless you say it.'

3.2 *hatta* in Rural Jordanian Arabic

The existence of the case system is a salient feature of Standard Arabic (especially Classical Arabic) with no parallel in Arabic vernaculars (Hallberg 2016). The lack (or loss) of a fully-fledged case system in RJA makes it impossible to determine the function of *hatta* with reference to the morphological structure of its subsequent nominal, as the nominal does not receive a case marker.

As indicated earlier, *hatta* in MSA can be prepositional. In RJA, however, it cannot perform such a function. Consider the sentences from RJA in (12) where *hatta* cannot be used as a preposition to denote motion in space to a certain destination or continuity in time to a certain temporal endpoint. Alternatively, the preposition *la* 'to' (the RJA counterpart of the MSA *ʔila*) is used. As can be seen in (12), *la* can be followed by the nominal *had* 'limit' to add more precision.

(12) a. *mashe:-na*   **hatta/la(had)*   *ʔawwal*   *ʔil-su:g*
      Walk.PST-1.PL   until   first   DEF-market
      Intended: 'We had been walking till we reached the market.'
      b. *ʔistane:-na*   **hatta/la(had)*   *s-sa:ᶜah*   *khamseh*
      wait.PST-1.PL   until   DEF-hour   five
      Intended: 'We had been waiting until five.'

In RJA, *hatta* can function as a resumption particle or coordinating conjunction. As a resumption particle, it must be followed by a full sentence; otherwise, it is a coordinating conjunction. In (13a), *hatta* is a resumption particle as it is followed by a sentence that embeds the topicalized object *ra:s-ha* and the imperfective verb *ʔakal*. This verb hosts the subject pronominal clitic *-tu:* and the resumptive pronoun *-h* that refers to the topicalized nominal. On the other hand, *hatta* in (13b) is a coordinating conjunction as it is followed only by the noun phrase *ra:s-ha*.

(13) a. *ʔakalt-u:*   *s-samak-ah,*   *hatta*   *ra:s-ha*

ate.PST-2PL.M   DEF-fish- SG.F   even   head-
3SG.F.POSS

ʔakal-tu:-h!
ate.PST-2PL.M-3.SG.M
'You ate the fish. You even ate its head!'
b. *ʔakalt-u*   *s-samak-ah*   *hatta   ra:s-ha* !
ate.PST-2PL.M   DEF-fish- SG.F   even   head-
3SG.F.POSS
'You ate the fish even its head'.

hatta, as a resumption particle and a conjunction, gives rise to additive denotation. It is similar to the additive *even* in English. For example, the sentence in (13) shows that the speaker is surprised that the hearer has eaten the whole fish (including the head).

With regard to the adverbial *hatta*, it has almost the same denotations of its equivalent in MSA. However, it rarely appears in its full form in RJA. It is frequently reduced into a monosyllabic *ta-*. Consider the examples in (14) where *ta-* has a temporal, spatial, and causative denotation, respectively.

(14)   a. *ʔistane:-na:-h*   *hatta/ta*   *aja*
       Wait.PST-1PL-3SG.M till   come.PST.3SG.M
       'We had been waiting him till he came.'
       b. *mashe:-na*   *hatta/ta*   *wsil-na*   *s-su:g*
       walk.PST-1PL   till   arrive.PST-1PL   DEF-
market
       'We had been walking till we reached the market.'
       c. *rafaᶜi-t*   *i:d-i*   *hatta/ta*   *ja:wib*
       raise.PST-1SG   hand-1SG.POSS   to
       answer.1SG
       'I raised my hand in order to answer.'

With respect of restriction/exclusion, neither *hatta* nor the reduced form *ta-* can perform this function in RJA. This is made evident in the observation that the restrictive *ʔilla* 'unless' must co-exist with the adverbial *ta-* in the presence of negation in the host sentence. As can be seen in (15), the absence of the restrictive particle *ʔilla* renders the sentence ungrammatical. In this case, the restrictive function is carried out by *ʔilla*, not by *ta-*. In this sentence, *ta-* is only temporal; it depicts the continuance of preventing a certain action to happen until another action is completed first.

(15)   *ma:*   *basmah-la-k*   *timshi*   *(ʔilla) ta*   *tratib*
       NEG   allow.1.SG-to-2.SG.M   walk.2.SG.M   except until
               sort.2SG.M
       l-iwrag
       DEF-paper.PL
       'I will not let you go unless you sort the papers out.'

The most relevant conclusion to the goal of the current paper thus far is that there are two different realizations of the adverbial *hatta* (the full and the reduced/proclitic form) in RJA, unlike *hatta* when it has a different denotation and is used to perform another function (e.g. resumption particle or coordinating conjunction). This peculiarity is not found in MSA as *hatta* in this variety must appear in full form, regardless of its type (or function). Here, it can be introduced that the adverbial *hatta* underwent secondary grammaticalization (i.e., pro-cliticization) only in RJA. As for the resistance of *hatta* to secondary grammaticalization in MSA, this may result from a constraint of faithfulness; the tendency of this variety to be faithful to the underlying form of its lexical items. Such a purist view results from the use of MSA as the medium of communication in formal contexts, such as news broadcasting and authorship.

4. The secondary grammaticalization of the adverbial *hatta*

This section argues that turning the adverbial *hatta* into a proclitic is not a mere phonological process in RJA. In doing so, the constraint that blocked the secondary grammaticalization of all the types of *hatta*, except the adverbial one, is introduced. Beside introducing the constraint, the sub-processes involved in secondary grammaticalization are discussed. This section aims to determine whether the secondary grammaticalization of the adverbial *hatta* encompasses paradigmatization and obligatorification, which are previously seen as common sub-processes characterizing secondary grammaticalization. In the closing part of this section, the lexical source of the adverbial *hatta* is questioned.

4.1 A prominence constraint on the reduction of *hatta*

It has just been noted that the adverbial *hatta* underwent phonological reduction in RJA. However, the full form of the adverbial *hatta* is maintained, together with the proclitic form in RJA; that is to say, a native speaker of RJA has the option to use the full or the reduced form of the adverbial *hatta*. This observation suggests that the proclitic *ta-* did not substitute the full form in RJA (such substitution may take place later). The optionality in use will be tested against data collected from 20 native speakers of RJA in Subsection 4.3.

Contrary to the adverbial one, non-adverbial *hatta* must appear in its full form.[5] In other words, *hatta* as a resumption particle or coordinating conjunction cannot be reduced into *ta-* in RJA. In (16) above, the resumptive and coordinating (i.e., non-adverbial) *hatta* cannot be replaced with *ta-*. Similarly, *ta-* is the cause of ungrammaticality of the sentences in (16) if it surfaces.

(16)   a. *ʔil-kull*   *biḥib-uh*   **ta/hatta*   *li-wla:d*
         (*biḥib-uh*)
         DEF-all   love.PRES-3SG.M   until   DEF-kids
         love.PRES-3SG.M
         Intended: 'All people like him even children.'

        b. *ma: tarakit*   *ḥada ʔilla*   *ḥake:t-l-u*
        *ta/hatta

NEG   leave.PST.3SG.M   one   except   talk.PST.-to-3SG.M
even
ja:r-na   (*gulit-l-u*)!
neighbor-1PL.POSS   say.PST-to-3SG.M!
Intended: 'You talked to everybody even our neighbor!'

A subsequent question to the aforementioned observation is: why did the adverbial *hatta* allow phonological reduction from a stress-initial disyllabic word that matches a prosodic word (ω) in the prosodic structure of the target sentence to a monosyllabic and bound morpheme (i.e., a proclitic), as can be observed in (17), but the other types of *hatta* resist it? Note that the proclitic *ta-* is an internal clitic within the ω of the lexical item *ʔaja*. More specifically, it substitutes the glottal *ʔ* as the new onset of *ʔaja*.[6]

(17)   (*hatta*)ω   (*ʔaja*)ω →   (*taja*)ω
        until   came

'until he came'.

I propose that this is conditioned by a prosodic prominence constraint; that is to say, its (non-)reduction is contingent on the prosodic status of *hatta*. With regard to the non-adverbial *hatta*, it resists reduction (into *ta-*), as its typical prosodic status is being under focus in daily conversations in RJA, and therefore it should be metrically and prosodically prominent, enabling it to resist phonological reduction and remain a free form (independent word). The source of prominence and the preservation of the full form is that the non-adverbial *hatta* typically has an informative function; it contributes to the information structure by conveying a specific pragmatic/attitudinal meaning, namely, astonishment. In (16), for instance, the non-adverbial *hatta* must appear in its free/full form as it is under focus (informative one) to express astonishment. In (16a), the speaker is surprised that the referent is popular to a great extent. In (16b), the speaker shows his astonishment, as the hearer has told everybody the secret the speaker shared with him. The reduction of the non-adverbial *hatta* will hinder the delivery of the intended pragmatic meaning (i.e., showing astonishment), which is a forceful message.

On the contrary, the adverbial *hatta* underwent reduction in RJA as it is not typically under focus. It does not have a special attitudinal meaning to convey, and therefore it does not have to be metrically and prosodically prominent in daily conversations. This paved the way for phonological and morphological reduction (i.e., turning it from a free morpheme into a proclitic) in RJA. It is noteworthy, however, that this process does not necessarily eliminate the free form of the adverbial *hatta*.

To wrap up, secondary grammaticalization of *hatta* in RJA is not blind and it is not to complete a grammaticalization path. It is sensitive to the types of *hatta* and targets the type that shows no resistance (i.e., the adverbial *hatta*) but it failed to do so with the types that resist secondary grammaticalization due to their strong

prosodic status. Hence, secondary grammaticalization can be blocked by some constraints in natural languages, such as the prominence-related constraint just introduced. This casts doubt on the view that presents secondary grammaticalization as mere continuation to a grammaticalization chain. Otherwise, all the types of *hatta* should have underwent secondary grammaticalization.

4.2 Sub-processes involved in the secondary grammaticalization of the adverbial *hatta*

What marks the secondary grammaticalization of the adverbial *hatta* is that it underwent phonological reduction, and as a consequence its morphosyntactic bondedness increased. Specifically, it was turned from a free morpheme into a bound one, namely, a proclitic, by phonological reduction. Phonological reduction was realized in a form of syllable deletion: the disyllabic *hatta* was reduced into the monosyllabic *ta-*. This is in line with Traugott (2002, 2010) who reported that phonological reduction and increase in morphosyntactic boundedness are associated with secondary grammaticalization.

Another significant observation that argues with the secondary grammaticalization of *hatta* (i.e., it is a non-trivial phonological process) is in how its proclitic form is strengthened. To illustrate, proclitic *ta-* has developed a pragmatic function in RJA, which is to express various intentions, including resentment, frustration and hopelessness. To clarify this function of *ta-*, the speaker in (18) doubts that the person he called will reply soon. This pragmatic function licenses the metrical strengthening of *ta-*. However, such strengthening will not necessarily restore the full form of *hatta*. Prosodic strengthening can be realized by lengthening the short vowel of *ta-*. In (18), the vowel of *ta-* is lengthened after receiving stress as it is prominent. This implies that the phonological reduction of the adverbial *hatta* into *ta-* is not a mere phonological process. Otherwise, prosodic strengthening should always recover the disyllabic *hatta*.

(18) *ta: yrudd*
       till   reply.PRES.3SGM
       Intended: 'I will wait until he replies.'

It should be admitted here that *ta-* can be produced as a free morpheme in RJA even in focus-neutral contexts. In this case, the decisive factor is the rate of speech. It emerges as a free morpheme when the rate of speech is clearly slow. As can be seen in the examples in (19), the vowel of *ta-* is lengthened and the immediately following word is started with an epenthesized glottal stop. These two phonological observations should be taken as a clear indication that the shortened form of *hatta* in (19) can be turned into a free morpheme. In other words, if *ta:* in these examples were a proclitic, its vowel should not have been lengthened as there is no phonological motivation to such lengthening (e.g., metrical strengthening). Further, the glottal *ʔ* should not have surfaced at the left of *ʔashu:f* and *ʔabu:-k* in (19) in this case. The glottal *ʔ* is expected to be epenthesized at the left of the two target lexical words in (19a and b) if they form their own prosodic words (i.e. *ʔ* does not surface if it is in a non-initial position within its containing prosodic word(ω)).

In consequence, *ta:* in (19) is not a proclitic (i.e., it is not prosodically attached to a subsequent word). It is rather a free morpheme. This is different from the examples in (20) below where *ta-* is a proclitic (it is internal to the prosodic word of the subsequent word) as its vowel remains short and no glottal stop surfaces at the beginning of the target subsequent words.

(19)   a. *ʔistanna*   (*ta:*)$_\omega$ *ʔashu:f*
            Wait.2SG.M   till   see.1SG
            Intended: 'Let me check'.

            b. *ʔistanna*   (*ta:*)$_\omega$ *ʔabu:-k*   *yi:ji*
            wait.2SG.M   till   father-2SG.M.POSS   come.3SG.M
            'Wait till your father arrives.'

(20)   a. *ʔistanna*   (*ta-shu:f*)$_\omega$
            Wait.2SG.M   till-see.1SG

            b. *ʔistanna*   (*ta-bu:-k*)$_\omega$ *yi:ji*
            wait.2SG.M   till-father-2SG.M.POSS   come.3SG.M
            c. (*ta-nn-u*)$_\omega$ *yikhalli̱s*   *shughl-u*
            b-il-ʔawwal
            until-that-3SG.M   finish.3SG.M   work-3SG.M.POSS
            in-DEF-first
            Intended: 'Let us wait until he finishes his work.'

Another argument with the secondary grammaticalization of the adverbial *hatta* is that it is characterized by a common feature of secondary grammaticalization: the emergence of a bound morpheme (Norde 2019). The evolved *ta-* is a proclitic that is typically attached to verbs. However, it did not develop further into an affix (this may probably occur later). One of the distinctive features of clitics is that they can be joined to different syntactic categories, unlike affixes. As can be observed in (16), *ta-* can be attached to more than one syntactic category, including verbs and nouns. Further, it can also be attached to the complementizer *ʔinn*, which is realized as *-nn-* in (16c).

4.3 Does the secondary grammaticalization of *hatta* encompass paradigmatization and obligatorification?

Paradigmatization is the emergence or the increase in paradigmaticity (Lehmann 1995). Paradigmaticity is characterized by having an oppositional pair or set. When an item (or construction) is paradigmatized, 'it builds an oppositional pair with another element and, in virtue of this, is a member of a paradigm.' (Diewald 2011b: 367). The adverbial proclitic *ta-* in RJA created an opposition with the non-adverbial (non-reduced) *hatta*. To illustrate, before the phonological reduction and cliticization of the adverbial *hatta* in this dialect, the type (or the function) of *hatta* (whether it is adverbial, prepositional or any other type) cannot be determined without referring to the host sentence. However, the reduction (or secondary

grammaticalization) of the adverbial *hatta* into *ta-* is accompanied by restricting the use of this proclitic: it can only be used when an adverbial particle is required. It cannot appear where the resumptive or coordinating *hatta* is needed. Hence, reducing the adverbial *hatta* into *ta-* and increasing its bondedness as a proclitic made it enter in a paradigmatic relation with the other types of *hatta* (those remained in their full forms). In other words, the adverbial proclitic *ta-* in the current form of RJA is in complementary distribution with other types of *hatta*. For example, the adverbial *ta-* cannot appear in (21), as the full form of *hatta* (specifically the prepositional one) is required in this position.

(21) *ʔil-kull*   *rawwaḥ*   *hatta/*ta*   *sami*
      DEF-all   go back.PST.3SGM   even/*until   Sami
      'All of them left even Sami.'

Note that when the adverbial *hatta* is required in a sentence, the full form or its proclitic counterpart can be used interchangeably as in (22), but the proclitic is more frequent in RJA, as will be shown in the next few paragraphs. This entails that a paradigm that makes the free morpheme *hatta* and the bound morpheme *ta-* in complementary distribution is not yet fully-fledged. This complementary can only be fully obtained if the adverbial *hatta* is abandoned and the proclitic *ta-* becomes obligatory.

(22) *ʔistane:t*   *hatta/ta*   *ra:ḥ*
      wait.PST.1SG   until   go away.PST.3SGM
      'I had been waiting until he left.'

Considering obligatorification, it can be defined as rendering what is optional obligatory. It has been noted in Diewald (2011a) that we should distinguish between two types of obligatorification, namely, language-internal and communication obligatorification. What is relevant to the current study is the language-internal obligatorification. This type can be realized as 'If form x, then form y' (Killie 2015). Regarding the case of the adverbial proclitic *ta-*, its obligatorification means that its use is obligatory when the host sentence is compatible with this adverbial proclitic.

To empirically examine whether or not the proclitic *ta-* is obligatory in the sense that the full form of the adverbial *hatta* cannot be used as it is substituted by the proclitic, 15 sentences were composed and written on 3 notecards. Each sentence had a gap that could be filled with *hatta* or *ta-*, as exemplified in (23). The main goal is to determine whether native speakers of RJA will stick to one of the two forms of *hatta* (either the full or the bound form), or use either one optionally based on their preferences. In this task, 10 females and 10 males, between 25 and 50 years old, were asked to read the target 15 sentences and use either *hatta* or *ta-*. The target sentences were divided into three groups (5 sentences were in each group). Each group required a specific function of the adverbial *hatta*. The adverbial functions of *hatta* are temporal, locative or causative (see Appendix). Each participant was given 10 minutes to read the target sentences and fill the gaps with either *hatta* or *ta-*. The number of the collected answers was 300 (15 sentences x 20 participants). The simplest assumption is adopted here: the proclitic *ta-* is

obligatory in all the target sentences. Broadly speaking, *ta-* took over the adverbial *hatta* in RJA.

(23)   *rann*   _____   *zihig*
         (*hatta*/*ta-*)
       ring.PST.3SGM   get bored.PST.3SGM
       'He kept calling (with no reply) until he got tired.'

The participants' answers do not confirm the simple assumption. Female speakers used the full form of *hatta* 39 times (26%) and male speakers used it 12 times (8%). Thus, the clitic *ta-* did not fully substitute the full form of the adverbial *hatta* in RJA; however, its use is far more frequent than that of the full form. This is in line with Kranich (2008) who proposed that the increase in frequency is one of the properties of secondary grammaticalization and should lead to obligatorification. On this basis, *ta-* in (24) is preferable over *hatta* but not obligatory in the current form of RJA. This current variability does not rule out the possibility that *ta-* may become obligatory later.

(24)   *ʔistane:t*   *hatta/ta*   *ra:ḥ*
       wait.PST.1SG   until   go away.PST.3SGM
       'I had been waiting until he left.'

To wrap up, from the available types of *hatta* in RJA only the adverbial one was grammaticalized further by shifting from the word domain to bound morphology (i.e., from a free morpheme (word) into a proclitic). However, the use of it is not yet full obligatorified, and the paradigm encompassing it and the non-adverbial *hatta* is still not fully fledged. Hence, from a diachronic perspective, it seems that this study captures a particular phrase in the grammaticalization of the proclitic *ta-*.

As stated in Section 1, this paper is to determine whether the secondary grammaticalization of *hatta* in RJA should be considered a continuation of a grammaticalization path or an independent process that may have a preceding primary grammaticalization. In this section, it has been shown that the development of *ta-* is not a trivial phonological process. Further, it has been argued that the function of this secondary grammaticalization is not to complete a grammaticalization path due to the observation that one of the types of *hatta* has been selected to be grammaticalized into a proclitic. Thus far, the latter scenario is more adequate, given the selectivity of secondary grammaticalization. Below, another supporting argument to this view is offered; primary grammaticalization is not necessarily a pre-requisite to secondary grammaticalization. More specifically, whether the adverbial *hatta* has a lexical source or not, it is not important to the occurrence of secondary grammaticalization.

4.4 Does *hatta* have a lexical source?
Is the lexical source (i.e., primary grammaticalization) necessary to secondary grammaticalization? It can be hypothesized that if *hatta* has a lexical source, primary and secondary grammaticalization should be considered processes internal

to a grammaticalization path. Otherwise, the secondary grammaticalization of this grammatical item should be presented as an independent process.

At first sight, *hatta* is a grammatical word with no lexical source. However, it should be highlighted here that in Arabic this grammatical word shares the lexical verb *hatta* the consonantal radicals, *htt*. The meanings of this lexical verb are listed in (25). What seems to be in common among the interpretations in (25) is the shift from one place to another or from one status into another. In (25a), *hatta* describes the falling of the leaves on the ground, and in (25b) it describes how the ownership of money is shifted from one person to someone else. *hatta* in (25c and d) describes the transformation of an object from a status to another through time. This entails that there is some semantic resemblance between the grammatical *hatta* and the lexical verb *hatta*.[7] The grammatical *hatta* typically gives the meaning of the shift from one place/time into another one, and the lexical *hatta* denotes the shift of an object from one place into another or the transformation through time. On the basis of this semantic resemblance, it is appealingly adequate to argue with the scenario that the grammatical *hatta* was evolved through time from a lexical source, which is the verb *hatt*. In other words, the process of desemanticization of the lexical verb *hatta*, which can be the lexical source of the functional one, did not involve full semantic loss. It was rather characterized by the partial reduction of the content of the lexical verb. This entails that some of the semantic content of the lexical source persists in the grammatical *hatta*.

(25)   a. *hatta*   *l-waraq*
        Fall down.PST.3SGM   DEF-leaves
        'The leaves fell down.'
        b. *hatta*   *l-ma:l*
        waste away.PST.3SGM   DEF-money
        'He wasted the money away.'
        c. *hatta*   *s-sakhr*
        erode.PST.3SGM   DEF-rock
        'The rock eroded.'
        d. *hatta*   *s-sadaʔ-u*   *l-hadi:d*
        drill.SDT.3SGM   DEF-rust-NOM   DEF-iron
        Intended: 'Iron is corroded'.

However, it should be emphasized that the lexical source of *hatta* suggested in this section is not yet confirmed and can be a mere speculation due to the difficulty in figuring out the implicit semantic relation between the lexical *hatta* and the grammatical counterpart. Therefore, some diachronic investigations are required to determine whether or not the grammatical *hatta* has a lexical source.

The other scenario is that the lexical and grammatical *hatta* diachronically co-existed in Arabic. This entails that the grammatical *hatta* is not the evolved form of the lexical one. This scenario can be more plausible than the first one due to the way Arabic derives words; Arabic, as a Semitic language, typically derives its words in Templatic Morphology. More specifically, the meaning of a derived word is found in the radials (i.e., the consonants). Hence, deriving words out of the same

radicals using prosodic templates is expected to result in some resemblances in the meanings of the derived words. This implies that the semantic resemblance between the lexical and grammatical *hatta* might be the consequence of sharing their radicals, *htt*.

Regardless of the soundness of the previous argument, it can be said that the lexical source of the adverbial *hatta* does not seem necessary to its secondary grammaticalization, as the access to the lexical source of the grammatical *hatta* is not that attainable. More specifically, the semantic relation between the lexical and grammatical *hatta* is not transparent. This implies that this secondary grammaticalization does not seem to be a late stage that targets the endpoint of a grammaticalization path. It is rather an independent process that may presupposes primary grammaticalization.

In this paper, it has been argued that the secondary grammaticalization of *hatta* does not necessarily presuppose primary grammaticalization, following Givón (1991). Thus, in agreement with Traugott 2002, Detges and Waltereit 2002, Kranich 2008, it cannot be considered a continuation stage in a grammaticalization path. On this basis, it can be claimed that there are two types of secondary grammaticalization, and this division is based on the (non-)presupposition of primary grammaticalization:

(26)   a. Type 1: secondary grammaticalization with lexical source.
        b. Type 2: secondary grammaticalization with <u>no</u> or non-transparent lexical source.

This is somehow analogous to the classification of secondary grammaticalization into morphophonological reduction and functionality expansion introduced in Section 1.

Before concluding this paper, two important questions raised by one of the two anonymous reviewers should be addressed first. The first question is: why do we need to refer to Type 2 as grammaticalization at all? Can one assume that it is simply a phonological process? First, if the scenario that the current form of a morpheme has a non-transparent lexical source is borne out, this supports its secondary grammaticalization. Further, the inability to recover the metrically and prosodically full form of the grammaticalized morpheme in focus contexts is a clear indication that this process is not a simple phonological process. The Second question is: is cliticization necessarily indicative of secondary grammaticalization? Cliticization is not always indicative of secondary grammaticalization, as secondary grammaticalization has two main types: secondary grammaticalization **as reduction** and **as expansion**. One of the shapes of reduction is phonological reduction that may end up with cliticization. On this basis, cliticization is a possible indicative to secondary grammaticalization if it involves reduction, and reduction can be phonological (e.g., cliticization of *will* as *'ll*) or morphosyntactic (e.g., the shift of pronominal clitics into morpho-syntactically conditioned agreement markers).[8]

5. Conclusion

In this paper, it has been argued that secondary grammaticalization can be an independent process, this finding agrees with Givón (1991). The case study is the secondary grammaticalization of the adverbial *hatta* in RJA. It has been shown that this process has its own peculiarities. First, it selected one of the types of *hatta* and turned it into a proclitic. It has been argued in Section 4 that this selectivity is caused by a prominence-related constraint. This characteristic has been taken as evidence that this secondary grammaticalization is not mainly to reach the endpoint of a grammaticalization path. Second, the lexical source is not necessary to this process; that is to say, primary grammaticalization is not necessarily a prerequisite to secondary grammaticalization within a grammaticalization path (i.e., secondary grammaticalization may start without a lexical source). Third, this process has been considered one of the types of secondary grammaticalization which involves only morpho-phonological reduction. It is not characterized by other sub-processes relevant to other types of secondary grammaticalization, such as reduction or expansion in functionality (functional meanings) or loss of subjective/attitudinal meanings. All in all, this study argues that secondary grammaticalization is not necessarily a late stage in a grammaticalization path, but it can be an independent process.

Endnote

[1]Some exemplifications of primary grammaticalization are the cross-linguistic tendency of lexical motion verbs to gradually develop into auxiliary verbs denoting tense or aspect (Bybee et al. 1991), posture verbs into copulas (Devitt 1990; Lesuisse & Lemmens 2018; Camilleri & Sadler 2019) and nominals referring to body parts to reflexive markers (Lehmann 1995). Considering secondary grammaticalization, it is used to refer to changes that occur within the grammatical domain. Such changes typically lead to make grammatical(ized) items more contingent on the structural context or be assigned new functions (Hopper & Traugott 2003; Brinton & Traugott 2005), such as turning a free grammatical morpheme into a clitic.

[2]Rural Jordanian Arabic is a regional sub-variety spoken in the villages in the northern parts of Jordan, including the villages of Irbid, Jerash and Ajloun.

[3]Vernacular Arabic provides several cases of grammaticalization without losing their word status, such as the development of the volition verb badd 'want' into a model-like verb denoting futurity or probability. Arabic vernaculars may differ in terms of the application of secondary grammaticalization. For instance, the active participle of the posture verb gacid 'sitting' developed into an auxiliary verb denoting progression in Vernacular Arabic; however, it was phonologically reduced and underwent decategorialization in some Arabic dialects, such as da- in Iraqi (Cohen 1984 cited in Camilleri 2016), gaʕ- in Kuwaiti (Al-Najjar 1991) and qed- in Maltese (Camilleri 2016).

[4]The diachronic aspects of hatta are beyond the scope of this paper. This paper is not to determine whether this grammatical word has a lexical source in Arabic as it requires a thorough diachronic investigation which I leave for future research.

[5]The term non-adverbial is used in this paper to refer to the uses of hatta other than the adverbial use.

[6]In (13), ta- is an internal clitic as the subsequent verb starts with a glottal stop that is typically subject to deletion in sentence non-initial position. However, ta- is not always

prosodically internal to the prosodic word of the subsequent verb when it has a different onset. In this case, ta- is affixal to that prosodic word and causes prosodic recursion (see Alsaed and Jaradat (2020) for more details on prosodic recursion in RJA).

[7]The vowel -a at the right of the lexical verb hatta is a case marker. This marker is typically suffixed to the singular perfective form of verbs.

[8]Another important point by one of the reviewers of this paper is that more attention should be paid to the meaningful aspects of the secondary grammaticalization of the adverbial hatta into the proclitic ta-. As a reply, it is too difficult to elaborate on this aspect as the diachronic development of the proclitic ta- has not be accompanied with expansion or reduction in functionality and meaning. Nevertheless, change or expansion in functionality may happen in the near or far future. To illustrate, a new function can be assigned to hatta or its proclitic form in RJA in the future. To conclude, expansion in meaning and functionality is a future possibility in the case of the proclitic ta- in RJA. In other words, hatta has not undergone syntactic reanalysis (e.g., syntactic re-bracketing and/or re-labelling) up to this point of time. However, this scenario is not totally excluded from a diachronic perspective in the future. Accordingly, the case of hatta/ta- in RJA as a case of secondary grammaticalization is different from cases, such as turning se, which was a middle voice marker in Spanish to an impersonal subject clitic. This shift, as suggested in Detges and Waltereit (2002), is rather accompanied with syntactic re-bracketing and reanalysis.

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Appendix

Table 1. List of sentences compatible with the temporal *hatta*

(1) *mashe:-na*	_____	*wsil-na*	*d-da:r*
walk.PST-1PL		arrive.PST-1PL	DEF-home
'We walked until we reached home.'			
(2) *sug-na*	_____	*garrab-na*	*min il-hdu:d*
drive.PST-1PL		approach.PST-1PL	from DEF-borders
'We drove until we got close to the borders.'			
(3) *rakaTH-u*	_____	*gata^c-u*	*khat in-niha:yeh*
run.PST-3PLM		cut.PST-3PLM	line DEF-end
'They ran until they touched the finishing line.'			
(4) *badna n-izra^c*	_____	*n-wassil*	*hadhi:k*
ash-shajarah			

want.PST-1PL	1PL-plant		1PL-reach	that.F
DEF-tree				

'We want to plant (this area) until we reach that tree.'

(5) *mash-u*	_____	*sha:f-u*	*bi:r*	*may*
walk.PST-3PLM		see.PST-3PLM	well	water

'They walked until they saw a well.'

Table 2. List of sentences compatible with the temporal *hatta*

(1) *mashe:-na*	_____	*sa:ra-t*	*is-saʕah*	*tisah*
walk.PST-1PL		become.PST-3SGF	DEF-hour	nine

'We walked until 9 o'clock.'

(2) *THall-u*	*wa:gf-i:n*		_____	*rawwah*
	il-kull			
remain.PST-3PLM	standing-3PLM			go back.PST.3SGM
	DEF-all			

'They stayed until everybody left.'

(3) *ʔishtaghal-u*	_____	*ʔitʔakhkhar*	*il-wagit*
Work.PST-3PLM		be later.PST.3SGM	DEF-time

'They worked until a late time.'

(4) *na:m*	_____	*tiliʕ*	*iTH-THaw*
sleep.PST.3SGM		go out.PST.3SGM	DEF-light

'He slept until the rise of the dawn.'

(5) *rann*	_____	*zihig*
ring.PST.3SGM		get bored.PST.3SGM

'He called (with no reply) until he got tired.'

Table 3. List of sentences compatible with the causative *hatta*

(1) *darasa-t*	_____	*t-injah*
study.PST.3SGF		3SGF-succeed

'She studied to pass.'

(2) *ranne:-t*	_____	*afham*	*il-gissah*
ring.PST-1SG		understand.1SG	DEF-story

'I called (somebody) to understand the issue.'

(3) *tafa*	*ʔil-radyu*	_____	*asmaʕ-ak*
turn off.PST.3SGM	DEF-radio		hear.1SG-2SGM

'I turned off the radio to be able to hear you.'

(4) *ra:ʕe:-n-ak*	_____	*n-iksab-ak*
lessen-1PL-2SGM		1PL-earn-2SGM

Intended: 'We offered you a discount in order to visit us again.'

(5) *tliʕit*	*barra*	_____	*atnaffas*
go out.PST.1SG	outside		breathe.1SG

'I went out in order to breathe well.'