From Deixis to Grammar:

The case of the element "*ta*" in Arabic

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Abstract

This paper investigates the claim that language change (grammaticalization) is driven by cognitive processes, such as schemas and their instantiations. Instead of determining linear stages relating successive states in language evolution, we argue that cognitive schemas are the source of prototypical paths that linguistic items go through in a parallel diffusive fashion during use. The analysis is based on data from Arabic (Classical and colloquial) related to the deictic element *ta* used in a variety of lexical, morphological, and syntactic constructs. The study proceeds by presenting an overview of the synchronic variation patterns of the element *ta* and investigating the different cognitive processes involved in all the instantiations of the schema BE IN FRONT OF associated to the element *ta*.

Keywords: Arabic, deictics, grammaticalization, prototype, schema.

1. Introduction

In this paper, we deal with the evolution of some lexical items from deictics to grammatical particles in Arabic (Classical and Colloquial): prepositions, locatives, derivational morphemes, with a special focus on the element *ta*. We argue that language evolution (grammaticalization) is based on cognitive processes, in general, and cognitive schemas, in particular. Thus, the main point here is to elaborate a cognitive approach to grammaticalization in Arabic and shed some light on the presence of the same item, (the deictic element *ta,* among so many other cases), in different subsystems of Arabic language including the dialects. So, instead of looking for an initial linguistic form associated to an

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initial meaning located in an initial point in time, and determine the evolutionary stages relating the different successive states, we argue that cognitive schemas are the source of the evolutionary paths that linguistic items may go through.

The paper is divided into three sections: the focus in section (2) will be on the basic principles governing Grammaticalization and language change, as elaborated in three theoretical approaches, i.e. the traditional (typological or functional), the generative, and the cognitive frameworks. Section (3) presents an overview of the synchronic variation patterns of the element *ta* based on data from Classical Arabic and present-day Arabic usage (Standard and dialects). In section (4), we deal with the prototypical path in the grammaticalization of the deictic element *ta,* in a cognitive framework.

2. Approaches to Grammaticalization: an overview

In the traditional approach, sometimes called the standard, functional or typological approach (Heine & Reh 1984; Traugott & Heine 1991; Hopper & Traugott 1993; Leehmann 2002, etc.), grammaticalization is the process through which lexical items or constructions evolve into grammatical elements: Content item > grammatical word > clitic > inflectional affix (Hopper & Traugott, 1993, p. 7). The process may occur in unidirectional and linear successive clines (Kurylowicz 1965, Givon 1973, 1979, Greenberg 1978, Heine, Claudi & Hünnemeyer 1991a). It may also occur in multidirectional simultaneous clines where a single form evolves through parallel paths and bears different grammatical meanings in different constructions: the verb, *bang* 'go' in Rama, for instance, developed into a temporal maker in the verbal domain, a purposive marker in the nominal domain and a conjunction in complex sentences (Craig 1991). Grammaticalization is conceived as a highly gradual process in which the syntactic category of a lexical item changes through historical paths (clines) by loosing its

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initial meaning, acquiring a new grammatical one and being simplified in its phonological form (Browman & Goldstein 1992, Mowrey & Pagliuca 1995). It is accompanied by formal and semantic changes such as reanalysis, bleaching and reduction: Reanalysis consists in merging some initially independent forms in one (Langacker 1977, Joseph 2001) thus, changing their constituency, hierarchical structure, category, grammatical relations and/or boundary types (Harris & Campbell 1995). Bleaching is conceived as the weakening of semantic content or semantic loss (Heine, Claudi & Hünnemeyer 1991a), as the shift and redistribution of meaning (Hopper & Traugott, 1993, p. 88), or as the loss of an old meaning and gaining a new one as it happened in the case of "going to", where the sense of motion is lost and replaced by a new one, i.e. futurity or intention (Sweetser 1988). Phonetic reduction occurs by producing sequences that require less muscular effort through repeated use (Browman & Goldstein 1992, Mowrey & Pagliuca 1995). For example, *going to* becomes *gonna* and reduces further in some contexts to *onna* as in I'm (g)*onna*. Grammaticalization is motivated, in this framework, by economy, expressivity, and variation in language use: Economy is the tendency to reduce the speech signal by idiomitization or routinization of expressions where complex forms are used and treated as simple ones (Langacker 1977). Expressivity or deroutinization is a tendency to renew the ways of saying things by using old expressions to convey new meanings or using new expressions made of older ones to express new meanings (Lehmann 1985, Heine, Claudi & Hünnemeyer 1991a, Traugott & König 1991). Variation in language use is the result of the indeterminacy in verbalization. It is related to the fact that different speakers conceptualize experiences in different ways, verbalize them in different constructions, and generate, in synchrony, a spectrum of variants. Some of these variants may be successful and propagate in language use; some others will fail and get extinct (Croft 2000).

In the generative approach, grammaticalization is handled in Universal Grammar (UG) terms (Roberts 1993; Newmeyer 1998, 2001; Roberts & Roussou 2003; Lightfoot 1999). It is considered, in the light of the Principles & Parameters framework, as an integral part of language change which is driven by parameters setting over time (Clark & Roberts 1993; Lightfoot 1979, 1991, 1999). So, the grammaticalization of a lexical item represents the creation of a new functional head which implies categorial reanalysis and structural simplification (Roberts & Roussou 2003) and functional heads have less phonological content than lexical heads and often host morphological affixes that convey grammatical information (von Fintel 1995). Grammaticalization is but one aspect of language change, where it is considered as a regular case of parameter change, not different from any other kind of change.

In the cognitive framework, grammaticalization is related to universal cognitive processes that induce language evolution along universal paths: Bybee (2002), for instance, argues that universal patterns of change should be attributed to universal cognitive mechanisms that create them. This argument is based on the fact that unrelated languages all around the world have analogous examples which prove that they are governed by similar principles. Thus, the same source concepts are at use for the same grammatical meanings and determine the same paths for semantic and/or structural change in different languages. The basic idea is that the cognitive mechanisms are spontaneous, and mental rather than communicative (Bybee 1985, Sperber & Wilson 1986). Among the most frequent cognitive processes that are at work, in language change and grammaticalization, we find analogical extension, metaphoric extension (Bybee 2003, 2005), entrenchment (Langacker 2008) or conventionalization (Bybee 2005, 2007), and schema instantiation (Langacker 2008). Metaphor is widely recognized as a process in language change and grammaticalization. It is the conception (understanding, experiencing) of something in terms of another. This way, transfer occurs from a basic, usually concrete, meaning to one more abstract (Lakoff &

Johnson 1980) and metaphorical processes represent "mappings" across conceptual domains. Mappings are motivated by similarity, and iconic relationships. Metaphoric processes are the cues for understanding grammaticalization phenomena that could not be handled from a structural or semantic view. For instance, the development of body part terms, in many languages, into locatives and the development of spatials into temporals are motivated by metaphoric processes: The locative BEHIND is derived metaphorically from a body part. The process is a shift from OBJECT>SPACE. It may also be the result of the shift SPACE>TIME when '*behind'* means being late in time like in '*to be behind in doing something*', or when '*ahead'* means future like in *'in the years ahead'*. This is an instantiation of SPACE IS AN OBJECT, TIME IS SPACE (Claudi & Heine 1986, Heine, Claudi & Hünnemeyer 1991a, 1991b). Grammaticalization of spatiotemporal terms occurs the same way, i.e. when concrete images associated with the lexical item are replaced by more schematic ones. Image schemata are concrete sources mapped onto abstract concepts (Sweetser 1988). Furthermore, 'epistemic meanings' (possibility and probability) like those expressed by modals are derived from the tendency to experience physical, social, and epistemic worlds in similar ways: mapping of sociophysical potentiality onto reasoning is made possible by the similarity of experience (Sweetser 1990).

3. Synchronic variation patterns of the deictic element *ta* in Arabic

This section is meant to present an overview of the various uses of the element *ta* in Classical Arabic and present-day Arabic usage in dialects, from a synchronic angle, and to give a broad idea to those who are not familiar with Arabic so they can follow the analysis. The use of the element *ta* is widespread in Arabic (Classical, Modern Standard, and Colloquial) and some other Semitic languages. It evolved from a deictic element into a variety of grammatical

morphemes sharing the basic value of Pointing (Moscati 1980, Diakonoff 1988, Wright 1898). It is attested in demonstratives, pronominals, prepositions, and in other morphemes expressing futurity, reflexivity, reciprocity, verb inflectional values (tense, aspect, etc.) or performing speech acts such as swearing and ordering. All these aspects are considered as instantiations of a superschema (BE IN FRONT OF...) that occur(red) through different parallel simultaneous paths in the grammaticalization of the deictic element *ta*, as we will show in section 4.

(a) -deictic forms (demonstratives)

Demonstratives in Arabic are part of Semitic Presentatives used to alerting the hearer or drawing his attention to the entity pointed at. Their general meaning is "behold", "see", "thus" (Lipiński 2001, p. 482). In Semitic, the element *ta* is used in overt demonstratives expressing an entity, in general, and a feminine one in particular (Moscati 1980, p. 111). It occurs in a variety of instances, used by itself, or compound with other deictic elements, to point at feminine objects, and combines with categories of Number and Distance giving the following set: *ta, tilka* (this-Sing-Fem-Nearness), *tānika* (this-Dual-Fem-Nearness), *hātīka* (that-Plural-Fem-Distant), etc. Yet, the Arab Grammarians reported that the element *ta* occurs as a demonstrative particle pointing exclusively to "time", albeit rarely (Al-ʔistirābāðiy (686 AH) vol. 1, p. 271) as shown in (1a). It occurs also in interrogative sentences; used frequently in Southern Tunisian dialects as exemplified in (1b):

(1) a. *ta ħīna*
this time
"This moment."

b. *ta šin huwa* ?
this thing-INDEF he (Interrogative intonation contour)
"This is what (kind of thing)?"

Arab Grammarians recorded in CA, a special use of *ta*, limited to a negative form where negation bears on *ta* and the predicate is obligatorily a lexical item meaning Time (*ħīna* "moment, time''; *sā9ata* "hour, time''; *?awāna* "moment, occasion'') or a demonstrative meaning Place (*hunā*, hannā "here"). The most frequent data attested by Grammarians (Al-?istirābāðiy (1982, vol. 1, p. 270-271) are shown in (2):

(2) a. *lā-ta ħīn-a manāşi*

NEG-this moment-Acc escape-Gen

"This is not the moment for escaping." (No way out.)

b. *lā-ta sā9at-a mandam-i*

NEG-this time-Acc regret-Gen

"This is not the time for regret."

c. *lā-ta hannā*

NEG-this here

"This is not the place for..." (It is not the moment for...)

(b) -pronominal(s)

The pronominal uses of the element *ta* are of two kinds: an independent personal pronoun indicating the second person, and an inflectional morpheme in verbal conjugations. In the pronominal forms, *ta* is part of the second person pronominals suffixed to the base "*?an*" as shown in (3):

(3) a. 2nd person, singular *?an-ta* (you, Masc. Sing)

?an-ti (you, Fem. Sing)

b. 2nd person, dual *?an-tu-mā* (you, Dual, Fem./Masc.)

c. 2nd person, plural *?an-tu-m* (you, Masc. Plural)

?an-tu-nna (you, Fem. Plural)

In the inflectional verbal use, the element *ta* is part of the conjugations of verbs with second person pronouns (past, present). It is prefixed to imperfectives (4a), and suffixed to perfective forms (4b):

(4) a. *ta + ktub > taktub* (you write, are writing.)

b. *katab+ ta > katabta* (you wrote.)

(c) -relative pronoun(s)

The feminine demonstratives are paired with relative (subordinating) conjunctions bearing the same deictic values and linking between distant entities in different parts of the sentence. so we have in Arabic the following set of feminine relative pronouns: *?allatī* (who/that-Fem-Sing), *?allatāni* (who/that-Fem-Dual-Nom), *?allātī* (who/that-Fem-Plural), *?allawātī* (who/that-Fem-Plural), etc.

(d) -preposition

The element *ta* is part of the preposition *ħattā* (even, until) linking two processes or states, where the second is the target, goal, or end of the first, as shown in (5):

(5) *a. sār-a l-walad-u ħattā l-madrasat-i*

walk-Past the-boy-Nom until the-school-Gen

"The boy walked until he reached the school."

b. *nām-a l-walad-u ħattā l-masā?-i*

sleep-Past the- boy-Nom until the-evening-Gen

"The boy slept until (the) evening."

c. *jtahad-a l-walad-u ħattā ya-njaħ-a*

work hard-Past the-boy-Nom so-that Present-succeed-Acc

"The boy worked hard so that he could succeed."

d. *yajtahid-u l-walad-u ħattā wa ?in kān-a marīḍ-an*

work hard-Present the-boy-Nom and if be-Past sick-Acc

"The boy works hard even if he is sick."

(e) -performative

The performative uses of the element *ta* are based on a set of items called *?ism al- fi9l* "noun of the verb" by Grammarians (Ibn hišām 1966, vol.3, pp. 116-122). They share, in their phonological aspect, the deictics *ha* and *ta* with minor differences and behave like verbs in meaning but their inflection is limited when compared to full inflected verbs. These include two kinds: forms expressing commands, such as *hayta* (come), *hāt* (give), so they are always in the imperative form, thus inflected with second person pronominals only, and one form expressing distanciation: *hayhāta* (it is too late to get back (something that happened in) the past). Some of them are still current in Arabic dialects as remnants of the past uses:

(6) a. *hāti l- kitāb-a*

bring-2nd Masc Sing-Imperative the-book-Acc

"Give me the book."

b. *hayta*

come-Imperative

"Come."

c. *hayhāta al-šabāb-u*

go-away-Past the-youth-Nom

"Youth is gone forever."

(f) - swearing (oath)

The use of the particle *ta* in swearing, is a special case cited in classical grammatical sources (Ibn ya9īš vol. 8, p. 32): first, it is seldom used except in the oath *ta-llāhi* "by God!" compared to the frequent use of its counterpart in swearing; i.e. the particle *wa*. Second, *ta* was especially in use at Mekkah region. Third, its origin is obscure, though "it seems to be the remnant of some word, as it is (probably of another) in *ta-ħīna*, (= *lā-ta ħīna*) and *ta-lāna* (= *al-ʔāna*)" (Wright 1898, I, p. 279). The examples including *ta* are very few and limited to those mentioned by the grammarians: *ta-rabbi al-ka9bati* "by the Lord of the Kaaba", *ta-rabbī* "by my lord", *ta-arraħmāni* "by the Compassionate", and *ta-ħayātika* "by thy life".

(7) a. *ta l-lāh-i !*

this the-god-Gen

"By God, here present, (I swear)."

b. *ta-rabb-i l-ka9bat-i !*

this-Lord-Gen the-Kaaba-Gen

"By the Lord of the Kaaba."

(f) -reciprocity and/or reflexivity

The element *ta* is attested in T-stems in Semitic languages in general, and in Arabic in particular. It occurs in a variety of verbal and nominal forms. It expresses an affective involvement and has a reflexive, frequentative, passive, or reciprocal meanings, regardless of

its use as infix, prefix, or suffix (Lipiński 2001, p. 404-405). In Arabic, It occurs generally in the prefix or the infix positions as shown in (8)**:**

(8) a. *ta-xāşam-a zayd-un wa 9amr-un*

REC-dispute-Past Zayd-Nom and 9amr-Nom

"Zayd and Amr disputed (one another)."

b. *xtaşam-a zayd-un wa 9amr-un*

REC-dispute-Past Zayd-Nom and 9amr-Nom

"Zayd and Amr disputed (one another)."

c. *ta-nāwam-a l-walad-u*

REFL-show sleep-Past the-boy-Nom

"The boy fainted sleeping."

d. qtaţa9-a l-walad-u mina l- xubz-i

cut-REFL-Past the-boy-Nom from the-bread-Gen

"The boy cut a piece of bread for him(self)."

e. *ta-kassar-a l-qalam-u*

REFL-break-Past the-pen-Nom

"The pen broke (by itself)."

(g) -tense morpheme: ta+verb (imperfective, future)

The element *ta* is prefixed to the main verb of the sentence in a variety of Arabic dialects where it is used as a future tense marker. Dialects in southern regions of Tunisia (Kebili, Gabes, Douz, al-Jerid region (south-west of Tunisia)), for instance, use the element *ta*, prefixed to an imperfective verb to express futurity (near or far):

(9) *ta-n-uxruj*

Future-I- go out

"I will go out."

It is also attested in some other areas like the Arabic Dialect of Tillo in the region of Siirt (South Eastern Turkey) and other Mesopotamian dialects (Mardin, Āzəx, etc.), where futurity is expressed by prefixing *ta-, tə* to the imperfect. It may shift to *d* in some uses (Lahdo 2009, p. 47-48):

(10) *t-aħeʈʈ* "I will put."

tə-yəğ̆i "he will come."

ta-nəbqa "we will stay."

tə-yğ̆ənn "he will get mad."

These are some representative instances of the deictic element *ta* in Arabic. As it can be seen, it is spread over a variety of constructions bearing a variety of meanings. The question is how this might have happened. This is illustrated in the following section.

4. The prototypical path in grammaticalization: the deictic element *ta* in Arabic

It is widely admitted that the simple elementary communicative event is based on three components: two participants (speaker-hearer interchanging their roles and interacting) and the verbal message. The communicative event takes place in a situation (context) where the two participants are in a face-to-face position. The speaker perceives the world around him and everything is organized, structured in accordance to his location in space, his views, and perspectives. One of the basic functions he has to achieve in structuring the world is pointing to the entities surrounding him in the immediate situation and in the farthest point in space he

can reach and perceives. Pointing is a cognitive process that directs the movement of the finger orienting the visual sense in particular and other sensory means in general, to the position of the designated entity. In pointing, the attention is focused on the salient entity and the others are in a shady zone. Considering the rules governing linguistic behavior (Grammar) as an inherent component of the cognitive system (CS) and the verbal expression as one of many devices used by the cognizer to structure the universe, we posit that, in the CS, cognitive schemas are construed, elaborated, and developed in various symbolic resources. Cognitive schemas are the source of linguistic change such as grammaticalization. In This section, a cognitive approach to grammaticalization is presented: instead of looking for an initial linguistic form associated to an initial meaning located in an initial point in time, and determine the evolutionary stages relating the different successive states, we argue that cognitive schemas are the source (or trigger) of the evolutionary paths that linguistic items may go through.

4.1 Cognitive schemas as a source of grammaticalization

4.1.1 BE IN FRONT OF ... as a prototypical schema

In Cognitive Grammar (Langacker 1987, 2008), an event is a cognitive occurrence of any degree of complexity. When the event occurs, it leaves a trace (neurochemical) that facilitates recurrence. If it does not happen again its trace decays. If it is recurrent, it is reinforced through continuous repetition, is established as a routine, and becomes an event-type. Once the routine is activated, the event is automatically initiated.

In this respect, a structure A is a schema with respect to structure B when A is compatible with the specifications of B but characterizes corresponding entities with less precision and detail. Any complex category is conceived as a schematic network. A schematic network has two aspects: static and dynamic. Langacker considers that any category should be

regarded as dynamic and continually evolving. 'A schematic network is shaped, maintained, and modified by the pressures of language use' (Langacker 1987, p. 381-382). Prototype is the most salient unit in a schematic network and the most likely to be chosen as representative of the category. Basic-level categories have a psychological primacy when compared to their superordinate notions or to their subordinates (Rosch 1977, 1978, Lakoff 1982, Langacker 1987). Since the prototype is the highest-level schema, it determines the maximal generalization and the basis for extension.

In Zanned (1998, 2005) the evolution of deictics into grammatical forms is established as a general phenomenon in Arabic Grammar. The main regions in the articulatory space are associated to particular functions: The front region (labials) is associated to expressing the conjunction relations, the middle and the back regions (dentals, palatals, gutturals) are associated to the deictic functions (pointing to persons, entities, places...). The middle region is specialized in pointing to entities present in the immediate communicative situation and interacting with the speaker (demonstratives pointing to entities and places in front of the cognizer or located in the center of the situation (Here and Now), pronominals designating the speaker(s) and the hearer(s). The back region is specialized in designating entities, which are absent or considered as absent and not interacting with the cognizer like place, time, third person, things, etc. This is the general view but there are some subdivisions related to different lexical, morphological, syntactic categories (gender, number) and other semantic values (distance, animate, human, thing...).

The superschema, which is instantiated in the different values related to the element *ta*, may be posited as BE IN FRONT OF... The core of the schema in both aspects (dynamic and static) is represented by the pronominal instantiation and the demonstrative one.

4.2 Instantiations of the superschema BE IN FRONT OF

4.2.1 Pronominal instantiation

The pronominals related to BE IN FRONT OF ... are those indicating the hearer-addressee with whom the speaker interacts. They are the immediate instantiation of the superschema since they designate the second participant in the primary face-to-face communicative event. That participant is in front of the cognizer-speaker. It represents the target in the superschema structure:

(11) BE IN FRONT OF...

Source > Target

Source : cognizer-speaker

> : face-to-face

Target: hearer-addressee

Pronominals are subdivided into groups in the light of nominal features: gender and number. In Arabic and Semitic Languages, many different morphemes are used to express the differences between the addressees: the element *?an* which indicates the presence of the entity at the center of the immediate communicative situation is used in forms indicating present time (*?al-?āna* (now)), present place (*hu-nā* (here)), present person of the speaker (*?anā*: I, *naħnu* < *nāna* (Old Semitic): We...) and the pronominals indicating the hearer(s). So the hearer here is present in front of the speaker, interacting with him; this is indicated by the element *ta* in its neutral form related to the masculine singular where the vowel *a* is used, and the other features are expressed by vowel variation and/or other morphemes as shown in (3).

4.2.2 Demonstrative instantiation

Demonstratives related to the superschema BE IN FRONT OF... are made of the element *ta* in pointing at things located in the immediate communicative and perceptual situation. The entity, which is pointed at, is the focus of the speaker-cognizer's attention. It is there in front of him and has a place in the immediate situation structuring:

(12) BE IN FRONT OF...

Source > Target

Source: cognizer-speaker

> : facing the source in a reachable (perceivable) location

Target: entity (thing, person, place-time).

In this instantiation, two stages may be posited:

-The first stage is pointing at an object (thing) located at a reachable location in the immediate space of communication. “Reachable” means something the cognizer can grasp, see, feel, or perceive. In this regard, the demonstrative related to the element *ta* is the first instantiation of the superschema BE IN FRONT OF.... The demonstrative instantiation is attested in some southern Tunisian dialect, as exemplified in (1).

-The second stage is pointing at a point in time by metaphoric processes related to the development of spatiotemporal terms (Claudi & Heine 1986; Heine, Claudi & Hünnemeyer 1991a, 1991b). The shift from OBJECT>SPACE is followed by the shift from SPACE>TIME: *ta* + OBJECT > *ta* + SPACE > *ta*+ TIME. The demonstrative instantiation of BE IN FRONT OF... resulting from the shift OBJECT>SPACE> TIME is attested in Classical Arabic in the very early stages as shown in (2).

4.2.3 Future morpheme instantiation

The element *ta* is used in some dialects in Southern Tunisia to indicate Future. In Classical Arabic and Modern Standard Arabic, the common future morphemes are *sawfa* and *sa* along with other morphological, syntactic, and lexical devices to express futurity. The element *ta*, *sawfa*, and *sa* are prefixed to the imperfective verb. We consider that the tense morpheme *ta* is an instantiation of BE IN FRONT OF... after the grammaticalized element went through the following shift channel: OBJECT>SPACE>TIME>FUTURE. The last shift (TIME>FUTURE) occurred as the element *ta* was used to point at a time or a period of time (hour, instant...) in the demonstrative instantiation as shown in (11), and since FUTURE is a part of the time AHEAD, the shift TIME>FUTURE occurs and the element *ta* expresses futurity:

(14) BE IN FRONT OF...

Source > Target

Source : cognizer-speaker's intention

> : facing the source in the mental space

Target : action (verb)

The future tense morpheme instantiation is currently used in expressions such as (9).

In grammaticalization literature, it is generally considered that future morphemes develop mostly from expressions meaning obligation, necessity, desire, movement, or intention (Hopper & Traugott 1993, Bybee et al. 1994, Trask 1996). The basic argument is that “there is an inference of futurity from purposives” (Hopper & Traugott, 1993, p. 3), including all the mentioned meanings as their target is not limited by a temporal/spatial

adverb. Here, we demonstrate that future marker develops also from deictic(s) indicating something in front (of the cognizer).

4.2.4 Morphological instantiation

Morphological instantiation is another path taken by the element *ta* in the grammaticalization process. The element *ta* is used in Morphology at two levels: inflectional and derivational. It may be called - following Givon- the morphologization of the element *ta*, since it gets into the inflectional and derivational systems as a device to express synthetically some related categories: aspect, tense in verbal forms and reflexivity (REF), reciprocity (REC) in the verbal and nominal forms related to the same consonantal roots.

a- Inflectional instantiation

The verbal inflection in Arabic is based on prefixation and suffixation. The affixes are always parts of the correspondent independent nominative pronominals. The element *ta* is used in verbal inflection indicating the second person: suffixed to the verb stem in the past tense where it expresses the perfective aspect, and prefixed to the verb stem in the present tense where it expresses the imperfective aspect. In Zanned (2005), we demonstrated that the formation of the verbal inflection was related to the fusion of deictic elements with the verb stem. This happened in a generalized grammaticalization of deictics (demonstratives and pronominals). It was argued that the inflected verbal form was at the origin a kind of an act of pointing at the agent and telling or describing his action (process). This act takes two possible orders following the linearity of speech:

The first one is when the cognizer-speaker points at an agent and tells what he is doing at the time of pointing which means the simultaneity between the act of pointing and the event that is taking place or being done by the agent at the time of pointing and/or speaking. It directs the attention of the hearer to some event that is happening at the time of speaking. This

construction evolved into a verbal form expressing present tense and imperfective aspect where the deictic/pronominal element is prefixed since it is the focus of the information. Linearity has a cognitive aspect: the first place is reserved to the most salient element:

(15) Pointing + Process > suffix + verb: present , imperfective

ta + *ktub* > *taktub* (you write)

The other order is the opposite: the cognizer-speaker tells an event and points at the agent. The event is accomplished and memorized by the cognizer-speaker but the agent is pointed at to locate him as a referent. The act of pointing occurs after the event took place and the agent is mentioned as an information. This construction evolved into a verbal form expressing past tense and perfective aspect since the process was finished and vanished; the deictic/pronominal element is suffixed since it points at an agent that is not the focus of the information:

(14) Process + pointing > verb + suffix: past, perfective

katab + *ta* > *katabta (*you wrote)

Each one of those orders corresponds to one of the two types of sentences in Arabic: SVO, VSO. The first order corresponds to SVO type where the Agent (topic) is first and the process is second: Pointing+Process. The second order corresponds to VSO type where the process is first, thus the most salient, and the agent is second: Process+ Pointing.

The use of the element *ta* as an inflectional morpheme fits in the superschema BE IN FRONT OF... as the demonstratives and pronominals do. It is one of its instantiations at the level of the word because it is a morphological instantiation where the superschema got into another domain namely the process or the action vehicled by the verb. The element *ta* is eroded phonologically and affixed to the verbal stem: prefixed to the present imperfective verb and suffixed to the past perfective verb.

b- Derivational instantiation

Following the path of morphologization, the element *ta* is introduced further in the morphological system to be used as a derivational morpheme expressing reflexivity and reciprocity in various verbal and nominal stems. Once examined, there is a minor possibility to grasp the correspondence between the derivational morpheme *ta* and its deictic or pronominal uses in Arabic. In fact, the derivational instantiation is parallel to the inflectional instantiation and they share many features inherited from their source, the superschema BE IN FRONT OF... and both of them may be the ultimate stage in the morphologization path. However, the derivational instantiation keeps the core of the superschema BE IN FRONT OF... but it cuts with it in some other aspects. It keeps the FACING and INTERACTION, and cuts with it in the nature of the participants in the face-to-face situation. They are instantiated in abstract and general entities: the element *ta* designates any entity. It cuts with it also in the domain of the face-to-face situation: initially the domain is the immediate perceptual space or situation where the facing entities are the cognizer-speaker and a hearer or an object, but in the derivational instantiation, the domain is the process itself, abstracted from space and time. The derivational instantiation is an abstraction of the other instantiations, since it expresses reciprocity and reflexivity between the agent(s) in a process. The reciprocity instantiation and the reflexivity instantiation are parallel and interrelated. The main difference between them resides in the frequency of interaction phases and in the participant(s) identity:

Let us take the process *xṣm* (dispute) as a domain. The cognizer is a spectator, he sees at least two people (agents). The process lasts for a while and the two participants exchange alternately or simultaneously any act that constitutes the dispute. Alternation resides in the shift of deictic center(s) pointed at by the element *ta*. To describe the scene, many linguistic resources expressing reciprocity are available. He may choose periphrastic constructions to describe the ongoing process in time: *John disputes with Jane, Jane disputes with John,* and

so on. In Arabic he would say: *xāşama zaydun 9amran*, or *xāşama 9amrun zaydan*, and so on. The cognizer may choose another option in Arabic as in (16a) which is reduced to a simple reciprocal verb with two agents and no special expression of alternance as in (16 b, c):

(16) a. *xāşam-a zayd-un 9amr-an al-wāħid-u min-humā al-?āxar-a*

dispute-Past Zayd-Nom 9amr-Acc the-one-Nom among-they-dual the-other-Acc

'Zayd and Amr disputed, the one with the other.'

b. *ta-xāşam-a zayd-un wa 9amr-un*

Rec-dispute-Past Zayd-Nom and 9amr-Nom

'Zayd and Amr disputed one another.'

c. *xtaşam-a zayd-un wa 9amr-un*

Rec-dispute-Past Zayd-Nom and 9amr-Nom

'Zayd and Amr disputed one another.'

However, construction 15a is not frequently used because of the existence of other synthetic, thus, more elaborated morphological resources to express reciprocity where the element *ta* is prefixed to the verbal stem as in (16b), or infixed to it as in (16c), expressing reciprocity in both instantiations.

The question, now, is why and how the element *ta* is there? We argue that the superschema BE IN FRONT OF... based on a face-to-face position in a communicative situation is instantiated in another kind of situation: it is the process itself unfolding in a mental space. The two entities, which are facing one another, are abstract interacting actors. This fact occurs through a kind of projection or transposition (mapping):

The cognizer-speaker is neutral and is out of the scene where the process takes place, but he conceives the two participants as facing one another. The cognizer is at the middle of

the scene but he is out of the right line which links both of the two participants. He builds some kind of symmetry between them: what he perceives at one side, is symmetrical to what he perceives at the opposite side. In addition, since comparison is a fundamental cognitive process in the structuring of experience, it works in all active cognitive domains more or less simultaneously. In Langacker's view (1987, p. 101), any act of comparison has schema S>T which includes three functional components: S, T, scanning (S: standard, T: Target, >: scanning). The Standard is the baseline event or the point of reference, relative to which the Target is evaluated. The operation connecting S and T is scanning. It determines the directionality of the operation. However, another direction may be added to the scanning, which is the opposite direction when an event is shared between two participants exchanging the action in alternate or simultaneous manner. This way, each one of them is an agent and a patient at the same time or in an alternate fashion. So, we can point to both participants by the deictic *ta;* but they are different. We can posit that the element *ta* should bear different indices following the difference between the two participants: one of them should be pointed at by ta_1, for example, and the other by ta_2. The scanned scene would be the following:

(17) Participants : ta_1, ta_2

Situation : face-to-face between ta_1 and ta_2

Domain : process

Scanning : process lasting for a while, ta_1 and ta_2 act alternately, alternate directions, reflexive scanning.

Expression : ta_1-verb-ta_2, ta_2-verb-ta_1....

The morphologization of the element *ta* at the derivational system caught, from the symmetrical scene, only one direction of the scanning; and the opposite direction is left empty at the CV structure to be filled by the lexical items in the syntactic structure. The element *ta*

takes a CV-slot in the derivational stem to indicate reciprocity between two or more (abstract) participants in the process vehicled by the root. The value of the participants is given by the lexical items required to fill in the Agent (Subject) position in the syntactic structure. The Agent is expressed by conjunctive constructions, dual or plural forms as shown in (18):

(18) a. conjunction *ta-xāṣam-a zaydun **wa** 9amrun*

Rec-dispute-Past *Zayd*-nom **and** *Amr*-Nom

b. dual *ta-xāṣam-a l-walad-**āni***

Rec-dispute-Past the-boy-**Dual**.Nom

c. plural *ta-xāṣam-a l-**ʔawlād**-u.*

Rec-dispute-Past the-boy-**Plural**.Nom

The derivational instantiation of the superschema BE IN FRONT OF... takes another form to express reflexivity. The path and the process taken here are the same as the ones taken in the reciprocity instantiation, with a unique difference: ta_1 coincides with ta_2. The agent is the same singular entity but it behaves, or is considered, as if it were dual or plural. This is related to the nature of concepts (meanings) that represent the domain of the interaction where the abstract face-to-face situation occurs. In fact, reflexivity is limited to situations where the trajector (Tr) and the landmark (Lm) coincide and both of the participants are at the same time Tr and Lm (Langacker, 1987, p. 241). In this respect, three types of situations may be sorted out from the data:

a. Actions and situations where the agent behaves in a false way so he shows something that is not the real state that he hides, as in (8c).

b. Actions and situations where the agent acts for himself: he is the target (beneficiary) of the action, as in (8d).

c. Actions and situations where the agent is acting by himself or by an inner, natural or physical force, and situations where the act takes place spontaneously or in situations where naming the real agent is not relevant or unknown, as in (8e).

The derivational instantiation of the superschema BE IN FRONT OF... is a two-fold one. It takes two parallel interrelated paths and share many aspects: the domain is a process where the face-to-face situation occurs; but they differ in the identity of the participants (Source and Target) and the type of scanning: both participants coincide in reflexivity instantiation but they are different in reciprocity instantiation:

(19) Reflexivity and reciprocity instantiations

superschema	derivational instantiation	
	Reflexivity	Reciprocity
BE IN FRONT OF...	BE IN FRONT OF...	BE IN FRONT OF...
Source > Target	Source > Target	Source > Target
Source: cognizer-speaker	Source: ta_1	Source: ta_1
> : face-to-face	> : process	> : process
Target: hearer	Target: ta_1	Target: ta_2

The morphological instantiation of the superschema BE IN FRONT OF... associated to the element *ta* fits in the grammaticalization cycle (Periphrasis, Fusion, Erosion) as elaborated in the Keller-Lüdtke theory (Croft, 2000, pp. 159-164). Periphrasis corresponds to the stage where the element *ta* is used in elaborate constructions to communicate a situation:

- a scene where an agent is performing an action (*ta* + verb).

- a scene where the action took place and the agent is mentioned (verb+ *ta*).

- a scene made of many participants exchanging the action or interacting in various ways (reciprocity).

- a scene where the agent and the patient coincide (reflexivity).

The periphrastic construction is routinized and its components are fused to make a new complex unit. The unit is eroded, loses its independence, and gets affixed: the element *ta* is used in the inflectional verbal paradigms for both tenses and aspects; prefixed to the verb in present tense, suffixed to the verb in past tense. It is used also as a derivational morpheme expressing reflexivity and reciprocity, and it is fused into the morphological CV-structure ($taR_1aaR_2aR_3$, $R_1taR_2aR_3$, etc., where Rs are the triliteral consonantal roots in Arabic). At this stage, the element *ta* loses its deictic value(s).

4.2.5 Telic instantiation

By telic instantiation, we mean the use of the element *ta* in constructions expressing a relation between two entities separated in space, time or in the conceptualization in a way that each one of them is a landmark bounding an interval: if one entity is a source, the other is the target and vice-versa. The instants are the preposition *ħattā* and some partially inflected verbs like *hayhāta* (It is too far) or partially inflected imperatives: *hāti* (Give) and *hayta* (Come). These forms belong to different subsystems of Grammar: grammatical particles (prepositions), special verbal forms with anomalies related to their CV structure and their restricted use to speech acts (imperatives, orders), thus, inflected with only the second person (you). We argue that these forms are instances of the superschema BE IN FRONT OF... as following:

The telic prepositional instantiation occurs in constructions expressing the relation between two entities: the first is the source and the second is the target. In between, duration is built gradually as the action proceeds. The prepositional instantiation takes three forms:

a. The source is a point in space where the action begins and the target is the end of the action in space, as in (5a).

b. The source is a point in time when the action begins and the target is the end of the action in time, as in (5b).

c. The source is the action itself and the target is its goal, as in (5c).

The telic verbal instantiation is of two kinds: imperative and assertive. The imperative instantiation is related to the face-to-face situation where the cognizer-speaker gives an order of GIVING, or COMING to the hearer. These are the unique imperative forms related to the element *ta*. Both of them express a dual direction: speaker-hearer direction in the speech act of ordering and hearer-speaker in the process of GIVING or COMING, as in (6a) and (6b), respectively. The assertive instantiation is related to another direction: The concept expressed by the lexical item bearing the grammatical function Subject is conceived as being far away in time, thus gone forever. This may be considered as a distantiation where the designated entity is getting away and the distance is getting bigger as time passes, as in (6c). Telic instantiations of the superschema BE IN FRONT OF... are represented in (20):

(20) Telic (prepositional and verbal) instantiations

superschema	telic instantiations	
	prepositional instantiation	verbal instantiation
BE IN FRONT OF...	BE IN FRONT OF...	BE IN FRONT OF...
Source > Target	Source > Target	Source > Target
Source: cognizer-speaker	Source: point in space point in time achieved action	Source: hearer/addressee
> : face-to-face	> : process	> : process
Target: hearer	Target: point in space point in time projected action	Target: cognizer-speaker point in past time

4.2.6 Speech act instantiation: swearing/oath

The use of the element *ta* in performing oath and swearing was attested in CA and was limited to the Mekkah region. Its origin is always thought to be obscure (WRIGHT, 1898, II, p. 175). This obscurity might relate to the fact that scholars are looking for the origin(s), in the case of the element *ta*, in the wrong direction, so they never thought, as far as we know, of the ritual context of its use. Swearing at the *Kaaba* (the most sacred religious place since the pagan pre-Islamic era) or making an oath was considered as the most powerful act because of the presence of the idols in front of the speaker-swearer. The ritual is based on facing the idol(s), pointing to it, and putting one's hand(s) on it while performing the act of swearing. Facing and Pointing are the primary basic component of deixis, putting the hand(s) on the idol is to establish the physical link or contact between the speaker-swearer and the authority of the sacred. The use of the element *ta* in performing the act of swearing is an instantiation of the superschema BE IN FRONT OF.... The deictic *ta* is grammaticalized in a swearing morpheme prefixed to the name of the sacred as in (7).

The speech act scene of swearing (oath) is an instantiation of the superschema BE IN FRONT OF... as following:

(21) Speech act instantiation

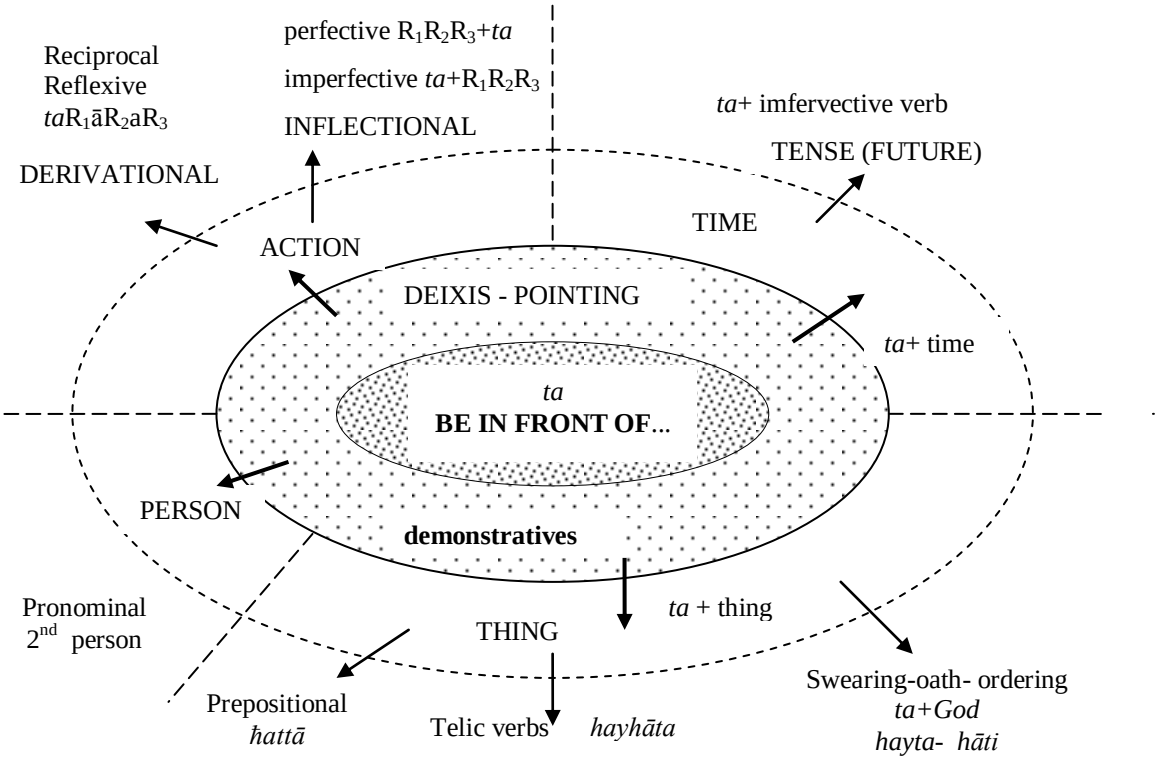
superschema	speech act instantiation: swearing
BE IN FRONT OF...	BE IN FRONT OF...
Source > Target	Source > Target
Source: cognizer-speaker	Source : cognizer-speaker (swearer)
> : face-to-face	> : face-to-face
Target: hearer	Target: idol(s)/God

This way, we may explain both facts: (a) - the limited use in space to the Kaaba place as remnants of the past where it was recorded, and, (b) - the limited use after the birth of Islam, in a limited set of words that are names of God which are exclusively used instead of the (pagan) idol names.

4.2.7 The prototypical path in the grammaticalization of the deictic ta: a summary

Figure (22) is a summary of the different paths that the deictic element *ta* went through during the grammaticalization phases in diachrony.

figure (22) the prototypical path in the grammaticalization of the deictic *ta*



The starting point in grammaticalization processes of the deictic *ta*, is the core of all the interrelated instantiations (the schema BE IN FRONT OF). These processes are natural and occur in a diffusive manner. Phases are represented as parallel, simultaneous, multidirectional, and open-ended; and so are the channels or clines. Naturalness means that processes are mental and take place in everyday language use and work in an unconscious way driven by

analogical and metaphoric extensions. By analogical and metaphoric extensions the schema BE IN FRONT OF is instantiated following radial and simultaneous directions making the instantiations cover a variety of interrelated domains and occur in a diffusive fashion. Once the element *ta* is instantiated in a second person pronominal, for instance, it is interpreted as belonging to the pronominals category, then it follows the rules governing the use of the other members of this category and get affixed to verbs in a variety of verbal configurations to express inflectional, derivational, pragmatic and tense values proper to the verbal category. As the instantiations are renewable depending on communicative needs, they are not conceived as terminating at a certain point of language evolution or time. The clines are open-ended. This leaves the possibility, in theory, for any cline to develop further and to the element *ta* to have in the past other grammatical values that were not recorded until now and might have been ignored by Grammarians or faded with time. It leaves also the possibility for the element *ta* to acquire new grammatical values in the time ahead through novel instantiations of the schema BE IN FRONT OF. Furthermore, all the clines are interconnected in two ways: all instantiations belonging to a certain layer occurring at the same level share formal and semantic properties emanating from the core schema.

The core zone (BE IN FRONT OF...) is the most abstract representation of the superschema BE IN FRONT OF... The intermediate zones are divided into many different layers: the first layer is the demonstrative deictic instantiation; the medium layer is divided in the light of the target domain into: Action, Person, Time, and Things. The third layer includes the different grammatical forms as following:

Person > second person pronominals.

Action > morphological instantiations:

inflectional (perfective forms; imperfective forms),

derivational (reciprocity and reflexivity).

Time > futurity.

Things > swearing, telic verbs, telic prepositions.

During all theses processes, the correspondence form-meaning is always at work, since the global general correspondence is preserved and the details vary following a continuum of graded values: the core represents the most concentrated and abstract category (meaning) and the margins have some schematic (semantic) features in common inherited from the core (superschema). Therefore, they show similarities that may vary in degrees and at the same time, each instantiation has its proper inherent features making it distinct from the other instantiations. Distinctiveness is created by the implementation of the superschema in a novel situation through language use and cognitive processing. Therefore, instantiations may differ at the surface, in details that make them particular and/or real in everyday language use, but their mental representations share basically the same schema in an unconscious way. The acquisition of any linguistic form, the element *ta* for instance, its storage, and retrieval for use are based on this principle.

In the case of the element *ta* in Arabic, we stated the prototypical value as BE IN FRONT OF … where the front is related to the position of the speaker as the center of the communicative situation. And "being in front of..." implies interaction - in the broadest sense- between the landmark (Speaker) and the trajector (Hearer): This is the core of the prototype where the element *ta* is used to locate the entity which occupies some space in front of the landmark. Therefore, we have the deictics like demonstratives and pronominals. BE IN FRONT OF … may concentrate on the landmark to indicate its position and indicate the direction of the action that takes its source from the hearer, so the element "*ta*" is used in performing commands: *hāt* (give+direction+me), *hayta* (come+to-where-I-am). It is used also

in performing swearing in situations where the 'sacred entity' is in front of the speaker. This fact is attested in CA and it is limited in use to the Kaaba before the birth of Islam and continued after. It may be a trace related to the pagan epoch when gods were idols and the rite of swearing included putting the swearer's hand(s) on the idol to strengthen the swearing: *tallāhi* (that-here +god). BE IN FRONT OF … may combine with the category of symmetry between (two) distinct landmarks exchanging interaction, so the element "*ta*" designates reciprocity, and reflexivity when the (two) landmark(s) are identical or one individual. BE IN FRONT OF …may extend from deictic use to tense morpheme use, so "*ta*" expresses future. The other uses of the element "*ta*" are related to the same prototypical schema in ways identical to the ones sketched in these concluding comments on figure (22).

5. Conclusion

The main claim in this paper is that cognitive approach can handle the phenomena of grammaticalization: its sources and paths. The main argument is based on the notion of prototype (cognitive superschema) that is instantiated in various grammatical constructions in diachrony. In theory, any cognitive superschema may be the source of grammaticalization since the cognitive system is the generator of grammaticalization and thus determines its sources and paths in the light of language use. The prototypical approach is based on arguments relativizing the absolute working concepts in Grammaticalization such as clines, linearity, ordered stages, and ubiquity of paths. Instead, we suggest that grammaticalization takes its source in a core (superschema) instantiated in a variety of grammatical forms in a variety of parallel simultaneous paths (fig. 22). It is based on some simple principles: naturalness (spontaneity), multidirectionality, diffusiveness, simultaneity, interconnectedness between parallel stages, and open-endedness.

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