Schematising (Morpho)Syntactic Change in LFG: Insights from grammaticalisation in Arabic

Maris Camilleri
University of Essex

Louisa Sadler
University of Essex

Abstract

This paper explores the grammaticalisation of two particular constructions in the Arabic vernaculars, seeking to provide an account of the relevant grammaticalisations paths and the commonality between then, using LFG as the theoretical model of morphosyntactic change. The two constructions express the PROGRESSIVE and the Universal PERFECT respectively. While their synchronic syntax has been recently analysed, here we address the task of exploring how hypotheses of reconstructed developmental paths that have led to the formation/grammaticalisation of these constructions could be accounted for by using the machinery of LFG. In particular, we observe how change does not necessarily constitute, or equate to, changes at the *c*-structure level. Alternatively, changes in function need not be accompanied by, or correlated with changes in form. While appreciating that the synchronic syntaxes of the two constructions under consideration are distinct, we observe how they share part of the developmental path that has led to their respective formation, and that is the shift from adjunction to embedding; a shift also observed in syntactic developments in Indo-European.

1 Introduction

The constructions to be discussed here are first the PROGRESSIVE construction, and the other, the Universal PERFECT construction. In each case we are concerned with the emergence of what are functionally verbal auxiliary elements and the emergence of a dedicated structure for the expression of a particular meaning. The analytical deductions presented here, as well as the hypothesised grammaticalisation trajectories are not derived from any historical evidence, given the lack of written material for the vernacular Arabic varieties. Rather, the conclusions made are constructed by microvariation observed when comparing the synchronic syntax of the different varieties, and the cues provided through whatever diachronic morphosyntactic vestiges are available within their different grammars.

Both the constructions to be considered here express ASPECTual values and involve some form of verbal auxiliation, but beyond this, they have/call for/motivate rather distinct synchronic syntactic analyses. Notwithstanding this difference, our aim here is to suggest that there are significant common aspects to the diachronic path of development in these cases. In particular, we suggest that a change from adjunction to embedding is common to both, in particular from an XADJ to an XCOMP possibly as the result of argument-extension. It is following this point (and hence from this point forward) in the grammaticalisation process that the constructions develop their distinct paths. The change from clausal adjunction to clausal embedding has been said to characterise a number of syntactic shifts that have taken

place through time across Indo-European (Kiparsky, 1995), but we are not aware of any previous theoretically oriented work hypothesising such a development in the literature on Arabic.

These two constructions provide fertile ground for exploring grammaticalisation from an LFG perspective: they are rich in terms of morphosyntactic diversity across the various Arabic vernaculars (giving rise to a range of form-function mismatches), and their synchronic syntax is now reasonably well-understood (they have both been the focus of some recent work). They also exemplify the two ways with which LFG deals with the analysis of auxiliaries, following Falk (2008).

Synchronically, the auxiliary *gāʕid* in the PROGRESSIVE construction in (1) is a co-head with the lexical verb, in an AUX-feature analysis. The combination of this form with the following imperfective form of the lexical verb contributes the feature ASPECT = PROG to the f-structure (alongside a TNS value) (Camilleri and Sadler, 2017). On the other hand, the auxiliary that functions as the main exponent of the universal perfect in Arabic, which in the case of the Syrian construction in (2) is *il* (in its inflectioned forms), is a PRED-taking auxiliary, and the construction behaves as a raising structure (Camilleri, 2017, under review).

(1) al-muǧtama   **gāʕid**   i-ṭ-ṭawwar
    DEF-society.SGM sit.ACT.PTCP.SGM 3SGM-REFL-develop.IMPV

    The society is developing.   Bahraini: Persson (2009a, 266)

(2) (muna) **il**-a   ḥamst iyyām bi-l-ḥabis
    Muna   to-3SGF.GEN five   day.PL in-DEF-prison

    Muna has been in prison for five days.   Syrian: Hallman (2016, 77)

We first briefly say a word on grammaticalisation and work on grammaticalisation in LFG. In §3 and §4, we then discuss the grammaticalisation of the PROGRESSIVE and Universal PERFECT constructions, respectively. §5 concludes.

2   Grammaticalisation

Grammaticalisation is a mechanism that takes place time through time whereby independent lexical items start losing parts of their lexical content and eventually come to express grammatical functions and meanings (Meillet, 1912), following clines (Bybee et al., 1994a; Hopper and Traugott, 2003). These changes do not occur in a vacuum, but rather are internal to syntactic structures. Together with the grammaticalisation of the lexical items, we also find the eventual grammaticalisation of a construction itself (Hopper and Traugott, 2003). Such grammaticalisation is often linked to the notions of deinflection and loss of agreement (Lehmann, 1995).

Work on grammaticalisation in LFG features particularly in the works of Butt (1996), Barron et al. (1997), Schwarze (2001), and Camilleri and Sadler (2017).

Butt and Lahiri (2002); Butt and Geuder (2003); Seiss (2009); Butt and Lahiri (2013), for instance, have been central to the discussion of how grammaticalisation distinguishes between auxiliaries and light verbs, and how this difference is reflected at the level of theory; while the latter can form complex predicate structures, and are themselves an end on a cline, on the other hand, auxiliaries are on a distinct grammaticalisation cline, and this precludes them from forming complex predicate structures.

The overarching theme present in Vincent (2001); Vincent and Börjars (2010); Börjars et al. (2016) is that of using the architecture of LFG as a means with which to better understand grammaticalisation and change by exploiting, accounting for, and dealing with a number of form-function mismatches. Previous discussions have concentrated on how meaning shifts and change need not affect the external syntactic structure in any way. The string may well remain the same, and the observed change has to do with the functional structure. This is the case when we observe the change that occurs when shifting from clausal adjunction to embedding. In other instances, meaning shifts and changes result from changes in the a-structure with no changes in either the c- or the f-structure, as would be the case of the phase in the formation of a raising predicate once what's left is the loss of the SUBJ's thematicity.

In what follows we use LFG very much in the way that others have used LFG within the domain of grammaticalisation, i.e. both to guide the step-by-step process that we hypothesise took place, and to illustrate how the change may effect, in distinct ways, either the f-, the c-, or the a-structures, and a change at one level of syntactic structure, e.g. the f-structure, need not have an effect on the c-structure, or vice-versa.

3   Grammaticalisation of the PROGRESSIVE construction

We start with the development of the progressive constructions (illustrated in (3), with (3a) repeated from (1) above), using the active participle *gāʕid/ǧālis* (lexical meaning 'sit') in auxiliary function, with a following imperfective lexical verb. This is found across the different Arabic vernaculars, but is not found in Classical Arabic.

(3) a. al-muǧtama   **gāʕid**   i-ṭ-tawwar
DEF-society.SGM sit.ACT.PTCP.SGM 3SGM-REFL-develop.IMPV

The society is developing.   Bahraini: Persson (2009a, 266)

   b. **ɣālis**   yi-bni   ʕmāra
sit.ACT.PTCP.SGM 3SGM-build.IMPV building

The he is building a building.   Emirati: Jarad (2015, 102)

The construction in (3) is just one of a number of strategies employed to express *progressive aspect*, through which we understand that given states or actions

are in progress at a particular reference time. These include the use of the imperfective verb form itself (which also expresses HABITUAL and CONTINUOUS readings) (Mitchell and al Hassan, 1994; Camilleri and Sadler, 2017); the use of the active participial forms of the lexical verb (subject to restrictions as to lexical aktionsart and not available in all dialects);[1] the use of auxiliary forms such as: ʕammāl lit. 'doing' and shortened counterparts in Levantine/Mesapotamian dialects (Agius and Harrak, 1987); grammaticalisation of the copula 'be' in (certain) Anatolian dialects (Akkuş, 2016); the use of prefixes such as bi-[non-1SG]/bayn-[1SG] in (Şaʕānī) Yemeni (Watson, 1993); ka-/ta- in Moroccan and Algerian (Harrell (1962); Heath (2013); Souag (2006)); and the use of an imperfective form + fi 'in', in the case of transitive verbs in Tunisian and Libyan (Mion (2004); Pallottino (2016); McNeil (2017); Börjars et al. (2016)). Beyond this diversity, the vernaculars all have in common the use of the auxiliaries gāʕid/ǧālis (and their phonological variants and/or cliticised or affixed counterparts), which precede imperfective verb-forms. These forms are morphologically inflecting active participial forms that have lexical meanings that range from 'sitting; staying; remaining' in most vernaculars to more bleached uses of 'be located; situated' and *exist* in dialects such as Chadian and Libyan (Absi and Sinaud, 1968; Rubin, 2005; Pereira, 2008). In Maltese the lexical counterpart of the form *qiegħed* has in fact become highly lexicalised, meaning 'stagnant' and 'unemployed'.

This progressive construction is given attention in a number of descriptive works e.g. Johnstone (1967); Cuvalay (1991); Brustad (2000); Mion (2004), and has also received some analytic attention, e.g. Woidich (1995); Persson (2009b); Persson (2013); Jarad (2015). Camilleri and Sadler (2017) analyse examples like (3) as involving a feature-bearing auxiliary that co-heads the structure together with the lexical predicate, arguing both against an analysis where the construction could be analysed as a complex predicate construction, with gāʕid/ǧālis analysed as light verb, as well as an analysis where these auxiliaries headed the construction on their own as PRED-taking auxiliaries. Building on this analysis, in this contribution we consider the possible developmental path that has led to the grammaticalisation of this construction in Arabic.[2]

The development of a progressive auxiliary from a posture verb is quite a common grammaticalisation path crosslinguistically (e.g. Bybee and Dahl (1989); Bybee et al. (1994b); Heine (1993); Heine and Kuteva (2002); Seiss (2009)). Here we suggest a possible diachrony for this development in Arabic, using LFG to formalise our hypothesis.

---

[1]See Borg (1988); Henkin (1992); Woidich (1995); Mughazy (2005); Procházka and Batan (2015); Camilleri (2016).

[2]The reader should keep in mind that this grammaticalisation should also be understood within the current synchronic context where in a number of dialects, the imperfective morphological form itself is still able to express a PROGRESSIVE reading. Additionally, and consistent with Deo's (2015) Imperfective cycle, this construction is broadening to express habitual and characterising readings alongside the event-in-progress reading, as discussed in Camilleri and Sadler (2017), as well as a number of more specific DURATIVITY, INCEPTIVE and CONTINUATIVE meanings in certain dialects.

The initial core meaning of the ACT.PTCP of the posture verbs involved is 'sitting', which is intransitive. In synchronic structures such as (4) the additional locative NPs and PPs are adjuncts.

(4) a. šāf   walad mū **ʔāʕid,**   {bi-l-ḥadīʔa}
       see.PFV.3SGM boy   NEG sit.ACT.PTCP.SGM in-DEF-garden

       He saw a boy (that is) not sitting in the garden.
       Lebanese: Ghadgoud (2018, 245) - **ʔāʕid**<SUBJ> **+ PP** ADJ

    b. niswān   **gāʕd-īn**   {hinī}
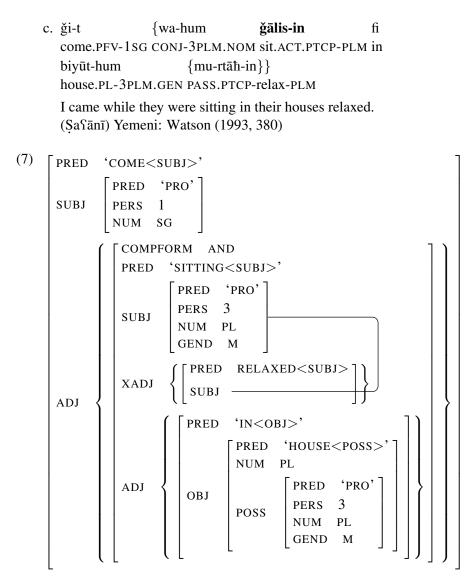   woman.PL sit.ACT.PTCP-PL here

       The women are sitting here.
       Gulf Arabic: Persson (2009a, 249) - **gāʕid**<SUBJ> **+ (locative) NP** ADJ

The very initial stage prior to any grammaticalisation might have involved a clausal ADJ, predicated of the matrix SUBJ. Circumstantial adjunct clauses (or *ḥāl*) clauses) are very common in Arabic (Badawi et al. (2003); Ryding (2005); Persson (2009a)). They can be verbal, involving imperfective or participial forms, thus explaining why the associated synchronic verb in the progressive construction is never perfective in form or non-verbal, and either asyndetic or syndetic. The eventuality in the matrix is understood as taking place concurrently with whatever eventuality is expressed by the circumstantial clause — generally, but not always, the subject is shared. Given this we hypothesize that the initial stage is along the lines of (5), as exemplified by (6) (and many other examples) along with the f-structure associated with (6c) (note that (6c) additionally shows that circumstantials *can* have disjoint subjects).

(5) Stage 0: 'sitting<SUBJ>' + XADJ, with (↑SUBJ) = (↑XADJ SUBJ)

(6) a. ana **gāʕid-a**   {wa a-ɣsil   aθ-θiyāb}
       I   sit.ACT.PTCP-SGF CONJ 1SG-wash.IMPV DEF-clothes

       I am sitting (and) washing clothes.
       Gulf Arabic: Persson (2009a, 250)
       gāʕid<SUBJ> **+ circumstantial** XADJ **introduced by** *wa* **'and'**

    b. lagē-ta-h   **gāʕid**   {ya-smaʕ
       find.PFV-1SG-3SGM.ACC sit.ACT.PTCP.SGM 3SGM-hear.IMPV
       al-giṣidah}
       DEF-poem

       I found him sitting down listening to the poem.
       Wādi Ramm Jordanian: Almashaqba et al. (2015, 162)
       gāʕid<SUBJ> **+ syndetic circumstantial** XADJ

c. ği-t　　　　　{wa-hum　　　　　**ğālis-in**　　　　　fi
come.PFV-1SG CONJ-3PLM.NOM sit.ACT.PTCP-PLM in
biyūt-hum　　　　　{mu-rtāḥ-in}}
house.PL-3PLM.GEN PASS.PTCP-relax-PLM

I came while they were sitting in their houses relaxed.
(Ṣaʕānī) Yemeni: Watson (1993, 380)

(7)
$$
\begin{bmatrix}
\text{PRED} & \text{'COME<SUBJ>'} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{PERS} & 1 \\ \text{NUM} & \text{SG} \end{bmatrix} \\
\text{ADJ} & \left\{ \begin{bmatrix} \text{COMPFORM} & \text{AND} \\ \text{PRED} & \text{'SITTING<SUBJ>'} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{PL} \\ \text{GEND} & \text{M} \end{bmatrix} \\ \text{XADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{RELAXED<SUBJ>} \\ \text{SUBJ} & \text{---} \end{bmatrix} \right\} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'IN<OBJ>'} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'HOUSE<POSS>'} \\ \text{NUM} & \text{PL} \\ \text{POSS} & \begin{bmatrix} \text{PRED} & \text{'PRO'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{PL} \\ \text{GEND} & \text{M} \end{bmatrix} \end{bmatrix} \end{bmatrix} \right\} \end{bmatrix} \right\}
\end{bmatrix}
$$

We hypothesise increased cohesion, and reanalysis of the XADJ as an XCOMP:

(8) Stage I: 'sitting<SUBJ, XCOMP>' where (↑SUBJ) = (↑XCOMP SUBJ)

Synchronically, there is of course an asyndetic relation between the auxiliary and the lexical verb in the progressive construction, while the circumstantial construction (see (6)) occurs with both syndetic and asyndetic linkage of the adjunct. We hypothesise the reanalysis of adjunction into embedding (as a result of increased cohesion) did not necessarily go hand-in-hand with simultaneous disappearance of the syndetic linkage (using *wa* which is synchronically the coordinating particle) at the point of functional reanalysis. The elimination of syndetic marking may have only taken place later, when the structure was understood as involving one eventuality, rather than two, although adjacency itself potentially plays

an important role as a trigger for structural analysis. Here structural analysis involves essentially argument-structure extensions rather than c-structure changes.[3]

We hypothesize that the next stage involved the semantic bleaching of 'sitting' into a wider spatial location, resulting in the SUBJ's loss of thematicity (in these contexts), giving a raising structure:

(9) Stage II: 'sitting<XCOMP>SUBJ' where (↑SUBJ) = (↑XCOMP SUBJ)

Hand in hand with this we suggest that semantic changes emerged in the lexical counterpart of the active participle, with NP/PP ADJs being reanalysed as OBJ$_{loc}$/OBL GFs with argument extension to '$g\bar{a}\Omega id$<SUBJ, {OBJ$_{loc}$|OBL}>'. Synchronically, as well as the 'fully postural' lexical uses in (4)-(6) above, we find evidence of a 'functional split' Hopper and Traugott (2003) or 'divergence' Heine and Reh (1984), where one of the lexical meanings of $g\bar{a}\Omega id$ is (transitive) 'staying/remaining'.

(10) a. hūwa lāgi   l-žeww   mlīħ   fa
     he   find.ACT.PTCP.SGM DEF-ambiance.SGM good.SGM so
     gāʕəd   ɣādi
     stay.ACT.PTCP.SGM there

     He found that the ambiance is good, so he is staying there.
     Libyan: Pereira (2008, 402) - **gāʕid**<SUBJ, OBJ$_{LOC}$>

   b. ʔinta **gāʕid**   fi tšād   walla?
     you   stay.ACT.PTCP.SGM in Chad INTERROG.MRKR

     Are you staying in Chad?
     Chadian: Absi and Sinaud (1968, 126) - **gāʕid**<SUBJ, OBL>

The final stage of grammaticalisation of the progressive construction involves loss of the auxiliary's PRED value, and the fusion of the bi-clausal f-structure into a mono-clausal one, in which $g\bar{a}\Omega id$ functions as an AUX-feature, while the XCOMP's PRED now functions as the (lexical) co-head in the same f-structure as $g\bar{a}\Omega id$.

(11) Stage III: Loss of $g\bar{a}\Omega id$'s PRED value; XCOMP PRED > matrix PRED

What is left from the (original) lexical 'sitting' is merely the temporal unboundedness of the erstwhile stative eventuality, a situation which lends itself rather easily to the development of a PROGRESSIVE (or CONTINUOUS/DURATIVE) interpretation (Kuteva, 1999). This stage accounts for the data in (3) and other presented in Camilleri and Sadler (2017). Once established, the progressive AUX+main verb construction has undergone further morphosyntactic and morphophonological changes (in some varieties) going down the grammaticalisation cline: (full verb)

---

[3]For the languages she looks at in her account of clause fusion, Fischer (2007, 214) couples adjacency with the presence of some sort of anaphoric relation between the clauses, in order for them to eventually result in some integrated structure. This coheres with the obligatory SUBJ structure-sharing across clauses we find in the progressive construction.

> auxiliary > clitic > affix (Hopper and Traugott, 2003, 108). The Iraqi example in (12) illustrates the full lexical form *gāʕid* (meaning 'sitting') as well as the synchronic prefix *de-* attached onto the imperfective form, realizing PROGRESSIVE ASPECT, and diachronically derived from *gāʕid*.

(12) Maryam **de**-ti-lʕab {wahiya **gāʕd-a** ʕala
      Mary PROG-3SGF-play.IMPV CONJ.3SGF.NOM sit.ACT.PTCP-SGF on
      l-kursī}
      DEF-chair
      Maryam is playing while she is sitting on the chair.   Iraqi

The reconstruction of the diachronic path suggested here is largely hypothetical, because we do not have solid historical data for the spoken vernaculars, and neither do any of these synchronic varieties provide unambiguous evidence of the intermediate stage II where the auxiliary is still a PRED-taking auxiliary, involving a sense along the lines of:

(13) The clothes are lying (in some spatial location) drying/to dry.

If the argument made by Butt and Lahiri (2002), Butt and Geuder (2003) and Butt and Lahiri (2013) that light verbs are diachronic dead ends is correct, then a complex predicate construction containing a light-verb is ruled out as a diachronic precursor to the synchronic AUX-feature progressive construction. The alternative is that the AUX-feature analysis of the synchronic progressive construction has most likely developed out of a raising predicate, postulating an instance of the trajectory described by Vincent (2001, 24): "For a verb to develop into a raising verb involves the loss of theta-role assignment to one of its argument positions, a kind of semantic bleaching. **If a verb goes on to full auxiliary status** [as is the case with 'have' in PERFECT constructions, in English], the bleaching goes a step further and both subject and object arguments lose their independent thematic value".[4] Figure 1 visually represents the hypothesised diachronic developments.[5]

4   Grammaticalisation of the Universal Perfect

The perfect is often thought of (from a Eurocentric point of view) as a grammatical construction which essentially involves an auxiliary together with a participial form. We can distinguish two broad types of interpretation; the Existential/experiential perfect and the Universal/continuous perfect (McCawley, 1971,

---

[4]Of course, not all PRED-bearing auxiliaries are appropriately analysed as raising predicates (Falk, 2008).

[5]Though we cannot discuss this additional development here, it should be noted that at least in some varieties, *gāʕid* is also emerging (or is already established) as a copula. For these cases a similar path to that schematised in Figure 1 is additionally envisaged.
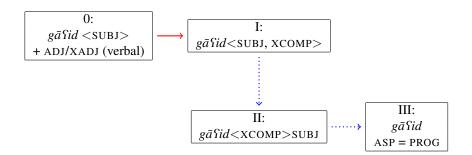
Figure 1: Grammaticalisation of gāʕid

1981; McCoard, 1978). The universal perfect conveys the meaning that the occurrence of an eventuality persists until reference time, in contrast to the existential reading, which merely asserts that the (episodic) occurrence of an eventuality remains of current relevance at reference time. This semantic distinction is conveyed in English by the presence/absence of a *for* or *since* adjunct PP (Dowty, 1979; Iatridou et al., 2001; Portner, 2003, 2011), as in the contrast in (14).

(14) a. Mary has lived in London for five years.   Universal perfect

      b. Mary has lived in London.   Existential perfect

In (dialectal) Arabic the perfective form is ambiguous between the simple past tense and the existential perfect (Fassi-Fehri, 2003).

(15) šif-t-ha
      see.PFV-1SG-3SGF.ACC

      I saw it (F)/her.   Past TENSE
      I have seen it (F)/her.   Present PERFECT

The universal/continuous perfect can be expressed by means of the construction shown in (16) for Sanʕāni Yemeni, Syrian, and Tunisian respectively.[6] These auxiliary forms have developed from prepositional predicates and we reflect this in our morphosyntactic gloss, with no intended consequence for their f-structure analysis.

(16) a. (ʕayn-i)   la-hā   θalāt iyyām
         eye.SGF-1SG.GEN   to-3SGF.GEN three day.PL
         bi-t-ūžaʕ-ni
         PROG-3SGF-hurt.IMPV-1SG.ACC

         My eye has been hurting me for three days. Yemeni: Watson (1993, 80)

---

[6]This is not the only means whereby the universal perfect can be expressed. We leave fuller discussion of the range of possibilities, and whether they might be diachronically related to structures of the type shown in (16) for future work.

b. (muna$_i$) (ṣār)-l-a$_i$ ḥamst iyyām bi-l-ḥabis
   Muna   become.PFV.3SGM-to-3SGF.GEN five   day.PL in-DEF-prison
   Muna has been in jail for five days.   Syrian: Hallman (2016, 89)

c. ʕref-t-ek   ʕind-i   ʕam
   know.PFV-1SG-2SG.ACC at-1SG.GEN year
   I have known you for a year.   Tunisian

To our knowledge Holes and Haddad (1984), Ingham (1994), Watson (1993) were the first to label this construction explicitly as a continuous perfect, in their description of Bahraini, Nejdi, and (Sanʕāni) Yemeni, respectively. Hallman (2016) provides the first syntactic account of the construction (for Syrian), while Camilleri (2016) provides a distinct syntactic analysis for the Maltese counterpart to the Syrian construction. The details of these (different) syntactic analyses do not concern us here. Note however that Hallman's observation that the inflection on *il* (and/or the NP which may double it) must be the SUBJ of the construction, because we find the 3SGF pleonastic form in the context of weather verbs (see (17)), is relevant to what follows.

(17) **il-a**   ḥamst iyyām mɣayym-**e**
     to-3SGF.GEN five   day.PL clouded-SGF

     It's been cloudy for five days.   Syrian: Hallman (2016, 83)

This construction is rather different from what we perceive a perfect construction to be from a Eurocentric viewpoint. However, Camilleri (2017) argues that the origin of the grammaticalisation of the universal PERFECT in Arabic parallels that for a number of Indo-European languages, particularly the Germanic, Romance and Celtic languages of Europe (according to Haspelmath (1998)). The Romance/Germanic perfect construction has been shown to develop out of a (transitive) possessive construction whose predicate is *have* (Trask, 1979; Vincent, 1982; Dahl, 1996; Drinka, 2017, *inter alia)*, with Heine and Kuteva (2006) coining the term 'possessive perfect' for such grammaticalisations, said to be rare crosslinguistically. So too in Arabic, where additionally, the possessive construction in Arabic is itself the result of a grammaticalisation out of a predicative prepositional construction. This is in fact parallel to the Celtic languages, which (excluding Welsh) have also grammaticalised a possessive perfect, but do not express possession via *have*.[7] In each case in fact, only one subtype of perfect is grammaticalised from the possessive construction. In Celtic, it is the existential perfect, while in Arabic, it is the universal perfect (our aim here is to account for why it is only the universal perfect that has grammaticalised in Arabic). (18) and (19) illustrate the goal possessive and location possessive schema (*to* X,Y > X owns Y and *at* X,Y > X owns Y) and their corresponding perfects, for Breton and Irish respectively.

---

[7]Ramchand et al. (1997) has an analysis of the Scottish Gaelic version of these constructions in terms of an AspP, even if no actual verbal form is present.

(18) a. Ur velo c'hlas **am**   eus
     a bike blue **to.**1SG is

     I have a blue bike.   Breton possession: Heine (1997, 60)

    b. Kousket   **am**   eus
      sleep.PAST.PTCP **to.**1SG is

      I have slept.   Breton existential perfect: Heine and Kuteva (2006, 175)

(19) a. Tá litir **agam**
     is letter **at.**1SG

     I have a letter.   Irish possession: Heine and Kuteva (2006, 172)

    b. Tá an bád díolta   **aici**
      is the boat sold.PTCP **at.**3SGF

      She has sold the boat.   Irish existential perfect: Harris (1991, 205)

In the light of these, now consider examples such as (20) and (21) which illustrate strikingly similar pairs for Palestinian and Tunisian respectively.

(20) a. kān   la-mona tlat ulād
     be.PFV.3SGM to-Mona three children

     Mona had three children. Palestinian possession: Boneh and Sichel (2010, 4)

    b. kān   il-ha   tlāt snēn   min yōm imm-i
      be.PFV.3SGM to-3SGF.GEN three year.PL from day mother-1SG.GEN
      māt-et
      die.PFV-3SGF

      It had been three years since my mother died. Palestinian universal perfect

(21) a. ʕind-i   kteb
     at-1SG.GEN book

     I have a book.   Tunisian possession

    b. ʕind-na   ʕam tawa ma safer-ne-š   il   ħatta bled
      at-1PL.GEN year now NEG travel.PFV-1PL-NEG ALL even country.SGF
      oħr-a
      other-SGF

      It's been a year now that we haven't travelled to another country.
      Tunisian universal perfect

Before looking at the development of the universal perfect construction and its synchronic syntax, it should be observed that the possessive construction is itself the result of a grammaticalisation from a (prepositional) goal/locative structure. This (precursor) grammaticalisation of a possessive construction from a goal/locative structure can be visualised in terms of the development of (23) from (22). This involves the reconceptualisation of the *goal/locative* argument as a *possessor* and subsequent remapping to grammatical functions.[8]

(22) *la/ʕand* P: 'to'/'at'

		theme	goal/loc	
la/ʕand	<	**arg 1**	**arg 2**	>
		-o	-r	
		SUBJ	OBJ	

(23) *la/ʕand* V: 'have'

		poss(goal/loc)	theme	
la/ʕand	<	**arg 1**	**arg 2**	>
		-o	-r	
		SUBJ	OBJ	
		(non-canonical)	ACC case-marking	

There is considerable evidence for the synchronic status of *la/ʕand* as a verb (and the grammatical function mapping in the 'have' construction, as shown in (23)). This includes the choice of the verb-appropriate form used for the expression of negation, various case and agreement facts, and so forth. This diachronic path (which may be the result of a grammaticalised topicalised locative structure, as suggested in Comrie (1991)) results synchronically in a set of non-canonical forms for the 'have' predicate which are referred to as *pseudo-verbs* in the literature on Arabic (Comrie, 2008). The term *pseudo-verb* is used to refer to lexemes which display a variety of verb-like functions, including those of auxiliaries, but are either not themselves originally verbal, or if verbal, with obsolete lexical meaning, or a completely grammaticalised meaning that is different from a concurrently existing lexical counterpart, and inflect very much in the same way as nouns or prepositions do. As a result, at the hypothesised origin of the grammaticalised possessive (universal) **perfect** construction in Arabic we have the pseudo-verbal forms of (23), illustrated in (20a) and (21a).

(24) Stage 0: V<SUBJ, OBJ> (diachronically derived from (22))

Camilleri (2017, under review) argues that two major ingredients must have been present within the possessive construction that subsequently grammaticalised into a universal perfect: (i) a theme argument (expressed by a NP) that was essentially a *temporal interval* of sorts; (ii) an XADJ whose function would have been

---

[8]We use *poss* atheoretically in (23) as a shorthand for whatever set of lexical entailments make the *goal/locative* argument more prominent in the hierarchy under this reconceptualisation.

similar to that which we hypothesised above as intrinsic to the development of the PROGRESSIVE construction, discussed in the previous section. (25) exemplifies the hypothesised route to the grammaticalistion of a possessive universal perfect.[9] (25a) is a straightforward possessive construction in which the *theme* argument is a temporal interval 'two free hours'. (25b) is a possessive construction with a (subject controlled) adjunct alongside a temporal adjunct as *theme*. This structure fulfills both these conditions. It is this structure which provides the initial stage for grammaticalisation, leading to the universal perfect construction in (25c).

(25)　a.　**la-ha**　　　saʕt-ayn fāðy-īn
　　　　　 have-3SGF.GEN hour-DU free-PL

　　　　　 She has two free hours.　　　　　　　　　　　　　　　possession

　　　b.　**la-ha**$_i$　　　saʕt-ayn fāðy-ah$_i$
　　　　　 have-3SGF.GEN hour-DU free-SGF

　　　　　 She has two hours, free.　　　　　　　　　　　　　　possession

　　　c.　**la-ha**$_i$　　　saʕt-ayn fāðy-ah$_i$
　　　　　 have-3SGF.GEN hour-DU free-SGF

　　　　　 She's been free for two hours.　　　　universal perfect - Kuwaiti

Taking this into account, a more accurate representation of Stage 0 is (26).

(26)　Stage 0: V<SUBJ,OBJ$_{[temporal\ interval]}$>+XADJ where
　　　　　　　　(↑SUBJ) = (↑XADJ SUBJ)

Just as in the PROGRESSIVE construction, the clausal adjunct becomes more integrated with the structure and is incorporated into the subcategorisation frame of the predicate as an embedded clause, by argument-extension, bringing about a change at the following stage from XADJ > XCOMP, crucially only in cases where the *theme* is a *temporal interval*. We further hypothesise that this highly restricted type of theme (which expresses a temporal interval) is mapped as an +r argument, that is, as an OBJ$_\theta$, and thus there is a change involving OBJ > OBJ$_\theta$. The SUBJ of the pseudo-verb is structure-shared with the XCOMP SUBJ. We therefore identify Stage I as resulting in structures along the following lines:

(27)　Stage I: V<SUBJ,OBJ$_\theta$,XCOMP> where (↑SUBJ) = (↑XCOMP SUBJ)

Some evidence for the thematically restricted nature of the GF associated with the *temporal interval* argument in (27) is the occurrence in the vernaculars of OBLique expressing temporal intervals, introduced by a *min* 'from' preposition

---

[9]Note that the Kuwaiti possessive constructions in (25a)-(25b) also occur synchronically with *ʕand* 'at', but this form cannot be used to give a universal perfect construction. In fact, *ʕand* 'at' as a possessive spread across the Arabic varieties much later, in some cases ousting *la* itself.

(or that P incorporated within the complementiser as is the case with *melli* in Tunisian), while the possessive construction is (naturally) limited to nominal arguments. Some relevant data is shown in (28), on the basis of which we hypothesise the Stage II also shown below.

(28) a. il-na$_i$ **min is-sani il-mādy-i** miš rayħ-ēn$_i$
to-1PL.GEN from DEF-year.SGF DEF-passed-SGF NEG go.ACT.PTCP-PL
hunak
there

It's been since last year that we haven't been there.   Palestinian

b. ʕind-hum$_i$ ya-ʕerf-u$_i$ bʕaḍ-hom **mes-saɣra**
at-3PL.GEN 3-know.IMPV-PL each.other-3PL.GEN from.DEF-childhood
/ melli huma sɣār
/ from.COMP COP.3PL little.PL

They've known each other since they were children.   Tunisian

(29) Stage II: V<SUBJ,{OBJ$_θ$|OBL}, XCOMP> where (↑SUBJ) = (↑XCOMP SUBJ)

The next stage must have involved a loss of the SUBJ's thematicity (i.e. the development of a raising verb from a control predicate), thus leading to:

(30) Stage III: V<{OBJ$_θ$|OBL}, XCOMP>SUBJ where (↑SUBJ) = (↑XCOMP SUBJ)

As a result, synchronically we find examples with a non-thematic subject, such as the 3SGF pleonastic SUBJ with weather verbs (as complements) illustrated in (31) for a number of vernaculars (and found across all varieties).[10]

(31) a. **il-a$_i$** ḥamst iyyām mɣayym-e$_i$
to-3SGF.GEN five day.PL clouded-SGF

It's been cloudy for five days.   Syrian: Hallman (2016, 83)

b. (as-sama) **(ṣār)-la-ha** (yum-eyn)
DEF-sky.SGF become.PFV.3SGM-to-3SGF.GEN day-DU
t-mattar (min yum-eyn)
3-rain.IMPV.SGF from day-DU

It's been raining for two days.   Kuwaiti

c. el-mṭār ʕind-ha jemʕa wahi t-sob
DEF-rain.SGF at-3SGF.GEN week CONJ.3SGF.NOM 3-rain.IMPV.SGF

It's been raining for a week.   Tunisian

---

[10]In (31b) and other examples we also find an optional *ṣār* the 3SGM perfective form of 'become' which serves purely as a morphophonological host for the clitic-prone *li/la*.

We find further developments from this stage in some vernaculars, though we do not have the space here to discuss them in any detail. In varieties including Iraqi and Maltese the perfect auxiliary can optionally exhibit default pleonastic 3SGM morphology, illustrated in (32) for Maltese, and other developments include the permissibility of what are putatively tensed COMP as well as XCOMP arguments, also illustrated by this example.[11]

(32)   **Il-u** $\sim$ **il-i**   żmien/sena li   mor-t   hemm
      to-3SGM.GEN $\sim$ to-1SG.GEN time/year   COMP go.PFV-1SG there

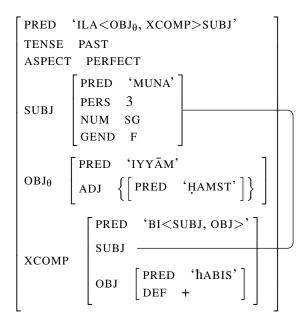   It's been a year that I went there.   Maltese: Camilleri (2016, 167)

One question is whether synchronically the *il/la* element retains a PRED value or whether it is the lexical predicate that has actually become the matrix predicate, as we have argued to be the case of the PROGRESSIVE construction. Camilleri (under review) suggests that the auxiliary element does retain a PRED value in the Arabic universal perfect construction. One piece of evidence in support of this conclusion might be structures such as (33) where we seem to find the universal perfect auxiliary occurring with a COMP argument containing a pronominal co-referential with the SUBJ of the perfect auxiliary. (33) could well be an instance of copy raising which has been discussed for Arabic in Salih (1985), and accounts of Arabic within LFG in Alotaibi et al. (2013); Camilleri et al. (2014); ElSadek and Sadler (2015), and which would then provide evidence that the auxiliary within the universal perfect construction is a PRED-taking one.

(33)   ʕind-**ha**$_i$ ʕam tawa [wa   ma   ya-ʕref-š   eš
      at-3SGF.GEN year now   CONJ NEG 3-know.IMPV.SGM-NEG what

      kāʕed   sāyer-i-**l-ha**$_i$]
      PROG.SGM happen.ACT.PTCP-SGM-EPENT.VWL-DAT-3SGF

      It's been a year now, not knowing what's happening with her.   Tunisian

Collectively, the synchronic data and the grammaticalised hypothesis render a raising structure, in association to the Universal PERFECT. We demonstrate this by providing the f-structure associated with one of Hallman's (2016) data examples from Syrian, which we analyse as a SUBJ-to-SUBJ raising structure, with the auxiliary *il*+INFL associated with an AUX PRED analysis.

(34)   kān   muna il-a   ḥamst iyyām bi-l-ḥabis
      be.PFV.3SGM Muna to-3SGF.GEN five   day.PL in-DEF-prison

      Muna had been in prison for five days.
      Syrian: Hallman (2016, 83)

---

[11]There are various idiosyncratic dependencies involved here, which we cannot cover here (see Camilleri (under review) for some discussion). We take the extension to a COMP to constitute a Stage IV: V<{OBJ$_\theta$|OBL}, XCOMP|COMP>SUBJ where (↑SUBJ) = (↑XCOMP SUBJ).

$$
\begin{bmatrix}
\text{PRED} & \text{`ILA}<\text{OBJ}_\theta, \text{XCOMP}>\text{SUBJ'} \\
\text{TENSE} & \text{PAST} \\
\text{ASPECT} & \text{PERFECT} \\
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`MUNA'} \\ \text{PERS} & 3 \\ \text{NUM} & \text{SG} \\ \text{GEND} & \text{F} \end{bmatrix} \\
\text{OBJ}_\theta & \begin{bmatrix} \text{PRED} & \text{`IYY\bar{A}M'} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{`\d{H}AMST'} \end{bmatrix} \right\} \end{bmatrix} \\
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`BI}<\text{SUBJ, OBJ}>\text{'} \\ \text{SUBJ} & \text{------} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`\d{h}ABIS'} \\ \text{DEF} & + \end{bmatrix} \end{bmatrix}
\end{bmatrix}
$$

5 Conclusion

We have discussed two instances of grammaticalisation in Arabic, using LFG to model the following mismatches:

- No change in the formal expression, but a change in function: the form *gāʕid* occurs as a lexical verb and as a featural aspectual auxiliary; and the form *li* occurs as a lexical preposition and a Aux-PRED expressing the universal perfect.

- Change in the formal expression, but no change in function: While sharing the same function of expressing an ASPECTual feature, the element *gāʕid* has a range of exponents as full, cliticised and prefixed forms in different varieties; dialects also differ in terms of whether they use *la* 'to' or *ħand* 'at' to express a universal perfect (in a common construction).

- Change in the f-structure function but no change in the c-structure: e.g. CPs introduced by *wa* 'and' can function as XADJs or XCOMPs.

- No change in the formal expression, no change in function, but change in the a- and c-structures: *la/ʕand* function as the PRED in the f-structure, yet the c-structure and a-structures differ considerably across the prepositional, possessive predicate and universal perfect uses.

We have argued that two distinct grammaticalisation paths, those leading to the development of a PROGRESSIVE construction and a possessive perfect construction expressing a universal PERFECT have both involved some sort of adjunction > embedded > matrix cline, with the constructions differing in terms of the

presence/absence of a PRED value in the latter stage. The pattern followed at the start of the grammaticalisation cline is one which has been discussed for shifts that have taken place diachronically in the development of Indo-European languages (Kiparsky, 1995), but which had never been discussed for Arabic. This commonality suggests that there may be core diachronic processes of syntactic reanalysis, structural shifts and grammaticalisations which are just as typologically widespread as instances of the lexical > grammatical item type of grammaticalisation. Further comparative work on the family of closely related Semitic languages has the potential to cast further light on the occurrence of this diachronic process of structural change.

References

Absi, Samir Abu and A. Sinaud. 1968. *Basic Chad Arabic. I The Pre-speech phase; II Comprehension texts; III The active phase*. Bloomington: Indiana University.

Agius, Dionisius A. and Amir Harrak. 1987. Auxiliary particles preceding the imperfective aspect in Arabic dialects. *Arabica* 34(2):164–180.

Akkuş, Faruk. 2016. The development of the present copula in Arabic. Ms, Yale University.

Almashaqba, Bassil Mohammad et al. 2015. *The phonology and morphology of Wadi Ramm Arabic*. Ph.D. thesis, University of Salford.

Alotaibi, Yasir, Muhammad Alzaidi, Maris Camilleri, Shaimaa ElSadek, and Louisa Sadler. 2013. Psychological Predicates and Verbal Complementation in Arabic. In M. Butt and T. H. King, eds., *Proceedings of the LFG13 Conference*, pages 6–26. Stanford, CA: CSLI Publications.

Badawi, El Said, Michael Carter, and Adrian Gully. 2003. *Modern Written Arabic: A Comprehensive Grammar*. London: Routledge.

Barron, Julia, Miriam Butt, and Tracy Holloway King. 1997. Lfg and the history of raising verbs. *LFG97, University of California at San Diego* .

Boneh, Nora and Ivy Sichel. 2010. Deconstructing possession. *Natural Language and Linguistic Theory* 28:1–40.

Borg, Albert J. 1988. *Ilsienna*. Malta: Has Sajjied.

Börjars, Kersti, Khawla Ghadgouf, and John Payne. 2016. Aspectual object marking in Libyan Arabic. In D. Arnold, M. Butt, B. Crysmann, T. H. King, and S. Müller, eds., *The Proceedings of the Joint 2016 conference on Head-driven Phrase Structure Grammar and Lexical Functional Grammar*, pages 125–139. Stanford, CA: CSLI Publications.

Börjars, Kersti, Pauline Harries, and Nigel Vincent. 2016. Growing syntax: The development of a dp in north germanic. *Language* 92(1):e1–e37.

Brustad, Kristen. 2000. *The Syntax of Spoken Arabic*. Washington, DC: Georgetown University of Press.

Butt, Miriam. 1996. *The Structure of Complex Predicates in Urdu*. Dissertations in Linguistics. Stanford, CA: CSLI Publications. Revised and corrected version of 1993 Stanford University dissertation.

Butt, Miriam and Wilhelm Geuder. 2003. Light verbs in Urdu and grammaticalization. In K. v. H. Regina Eckardt and C. Schwarze, eds., *Diachronic Semantics from Different Points of View*, pages 295–349. Berlin: Mouton de Gruyter.

Butt, Miriam and Aditi Lahiri. 2002. Historical stability vs. historical change. *Unpublished Ms. http://ling. uni-konstanz. de/pages/home/butt* .

Butt, Miriam and Aditi Lahiri. 2013. Diachronic pertinacity of light verbs. *Lingua* 135:7–29.

Bybee, Joan L and Östen Dahl. 1989. *The creation of tense and aspect systems in the languages of the world*. John Benjamins.

Bybee, Joan L., Revere Perkins, and William Pagliuca. 1994a. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.

Bybee, Joan L., R. Perkins, and W. Pagliuca. 1994b. *The evolution of grammar: Tense, aspect and modality in the languages of the world*. Chicago: Chicago University Press.

Camilleri, Maris. 2016. *Temporal and aspectual auxiliaries in Maltese*. Ph.D. thesis, University of Essex.

Camilleri, Maris. 2017. Possessive perfect constructions in Arabic. Presentation at the North Atlantic Conference for Afroasiatic Linguistics, 45, Leiden, Holland, 10th June, 2017.

Camilleri, Maris. under review. The syntax and development of the universal perfect in Arabic.

Camilleri, Maris, Shaimaa ElSadek, and Louisa Sadler. 2014. Perceptual Reports in (dialects of) Arabic. In M. Butt and T. H. King, eds., *Proceedings of the LFG14 Conference*, pages 179–199. Stanford, CA: CSLI Publications.

Camilleri, Maris and Louisa Sadler. 2017. Posture Verbs and Aspect: A View from Vernacular Arabic. In M. Butt and T. H. King, eds., *Proceedings of the LFG'17 Conference, University of Konstanz*, pages 167–187. Stanford, CA: CSLI Publications.

Comrie, Bernard. 1991. On the importance of Arabic for general linguistic theory. In B. Comrie and M. Eid, eds., *Perspectives on Arabic Linguistics III*, pages 3–30. Amsterdam/Philadelphia: John Benjamins.

Comrie, Bernard. 2008. Pseudoverb. In K. Versteegh, M. Eid, A. Elgibali, M. Woidich, and A. Zaborski, eds., *Encyclopaedia of Arabic Language and Linguistics*, vol. III, pages 739–740. Leiden: Brill: Brill.

Cuvalay, Martine. 1991. The expression of durativity in Arabic. *The Arabist, Budapest studies in Arabic* 3-4:143–158. Proceedings of the colloquium on Arabic grammar, Budapest.

Dahl, Östen. 1996. *Tense and Aspect Systems*. Oxford: Basil Blackwell.

Deo, Ashwini. 2015. The semantic and pragmatic underpinnings of grammaticalization paths: The progressive to imperfective shift. *Semantics and Pragmatics* 8:1–52.

Dowty, David R. 1979. *Word Meaning and Montague Grammar: The Semantics of Verbs and Times in Generative Semantics and in Montague's PTQ*, vol. 7 of *Synthese Language Library*. Dordrecht: D. Reidel.

Drinka, Bridget. 2017. *Language Contact in Europe: The periphrastic perfect through history*. Cambridge: Cambridge University Press.

ElSadek, Shaimaa and Louisa Sadler. 2015. Egyptian Arabic perceptual reports. In Miriam Butt and Tracy Holloway King, eds., *Proceedings of LFG15*, pages 84–102. Stanford, CA: CSLI Publications.

Falk, Yehuda. 2008. Functional relations in the English auxiliary system. *Linguistics* 46(4):861–889.

Fassi-Fehri, Abdelkader. 2003. Arabic perfect and temporal adverbs. In A. Alexiadou, M. Rathert, and A. von Stechow, eds., *Perfect explorations*, pages 69–100. Berlin: Walter de Gruyter.

Fischer, Olga. 2007. *Morphosyntactic change: Functional and formal perspectives*, vol. 2. Oxford: Oxford University Press.

Ghadgoud, Khawla. 2018. *Negative patterns in Libyan Arabic and Modern Arabic varieties*. Ph.D. thesis, University of Manchester.

Hallman, Peter. 2016. The Universal Perfect in Syrian Arabic. *Brill's Annual of Afroasiatic Languages and Linguistics* 8(1):76–100.

Harrell, Richard S. 1962. *A Short Reference Grammar of Moroccan Arabic*. Washington: Georgetown University Press.

Harris, John. 1991. Conservatism versus substratal transfer in Irish English. *Dialects of English:*

Studies in grammatical variation pages 191–212.

Haspelmath, Martin. 1998. How young is Standard Average European? *Language Sciences* 20(3):271–287.

Heath, Jeffrey. 2013. *Jewish and Muslim dialects of Moroccan Arabic*. New York: Routledge.

Heine, Bernd. 1993. *Auxiliaries: Cognitive forces and grammaticalization*. Oxford: Oxford University Press.

Heine, Bernd. 1997. *Possession: Sources, forces and grammaticalization*. Cambridge: Cambridge University Press.

Heine, Bernd and Tania Kuteva. 2002. *World Lexicon of Grammaticalization*. Cambridge: Cambridge University Press.

Heine, Bernd and Tania Kuteva. 2006. *The changing languages of Europe*. Oxford University Press.

Heine, Bernd and Mechthild Reh. 1984. *Grammaticalization and reanalysis in African languages*. Buske Helmet Verlag Gmbh.

Henkin, Roni. 1992. The three faces of the Arabic participle in Negev Bedouin dialects: continuous, resultative, and evidential. *Bulletin of the school of Oriental and African Studies* 55(3):433–444.

Holes, Clive and S Haddad. 1984. *Colloquial Arabic of the Gulf and Saudi Arabia*. London: Routledge & Kegan Paul.

Hopper, Paul J and Elizabeth Closs Traugott. 2003. *Grammaticalization*. Cambridge: Cambridge University Press.

Iatridou, Sabrina, Eleni Agnastopoulou, and Rouma Izvorski. 2001. Observations about the Form and Meaning of the Perfect. In M. Kenstowicz, ed., *Ken Hale: A Life in Language*, page 1890238. Boston, MA: MIT Press.

Ingham, Bruce. 1994. *Najdi Arabic: Central Arabian*, vol. 1. Amsterdam: John Benjamins.

Jarad, Najib Ismail. 2015. From bodily posture to progressive aspect marker. *Lingua Posnaniensis* 57(1):89–111.

Johnstone, Tomas M. 1967. *Eastern Arabian dialect studies*, vol. 17. Oxford: Oxford University Press.

Kiparsky, Paul. 1995. Indo-European origins of Germanic syntax. In I. Roberts and A. Battye, eds., *Clause structure and language change*, pages 140–167. Oxford: Oxford University Press.

Kuteva, Tania. 1999. On 'sit'/'stand'/'lie' auxiliation. *Linguistics* 37/2:191–213.

Lehmann, Christian. 1995. *Thoughts on grammaticalization*. Munich: Lincom Europa.

McCawley, James D. 1971. Tense and time reference in English. In C. Fillmore and D. T. Langendoen, eds., *Studies in Linguistic Semantics*, pages 97–113. New York: Holt Rinehart.

McCawley, James D. 1981. Notes on the English present perfect. *Australian Journal of Linguistics* 1(1):81–90.

McCoard, Robert W. 1978. *The English perfect: Tense-choice and pragmatic inferences*. Amsterdam: North Holland Publishing.

McNeil, K. 2017. *Fī* ('in') as a marker of the progressive aspect in Tunisian Arabic. In V. Ritt-Benmimoun, ed., *Tunisian and Libyan Dialects: Common trends - Recent developments*, pages 161–190. Zaragoza: Universidad de Zaragoza Press.

Meillet, Antoine. 1912. L'évolution des formes grammaticales. *Scientia* 12(26.6):130–148.

Mion, Giuliano. 2004. Osservazioni sul sistema verbale dell'Arabo di Tunisi. *Rivista degli Studi Orientali* 78(1/2):243–255.

Mitchell, Terence F and Shāhir al Hassan. 1994. *Modality, Mood, and Aspect in Spoken Arabic: With Special Reference to Egypt and the Levant*. New York: Kegan Paul.

Mughazy, Mustafa. 2005. Rethinking lexical aspect in Egyptian Arabic. In *Perspectives on Arabic Linguistics XVII-XVIII: Papers from the Seventeenth and Eighteenth Annual Symposia on Arabic*

Linguistics, pages 133–172. John Benjamins.

Pallottino, Margherita. 2016. "feš taqra?" what are you reading?: Prepositional objects in Tunisian Arabic. *Brill's Annual of Afroasiatic Languages and Linguistics* 8:286–312.

Pereira, Christoph. 2008. *Le parler arabe de Tripoli (Libye): Phonologie, morphosyntaxe et categories grammaticales*. Ph.D. thesis, INALCO, Paris.

Persson, Maria. 2009a. Circumstantial Qualifiers in Gulf Arabic Dialects. In B. Isaksson, H. Kammensjö, and M. Persson, eds., *Circumstantial qualifiers in Semitic: The case of Arabic and Hebrew*, pages 206–XXX. Otto Harrassowitz Verlag.

Persson, Maria. 2009b. Circumstantial Qualifiers in Gulf Arabic Dialects. In B. Isaksson, H. Kammensjö, and M. Persson, eds., *Circumstantial qualifiers in Semitic: The case of Arabic and Hebrew*, pages 206–248. Otto Harrassowitz Verlag.

Persson, Maria. 2013. Asyndetic clause combining in Gulf Arabic dialects: Auxiliary, adverbial and discourse functions. *Zeitschrift für Arabische Linguistik* 57:5–39.

Portner, Paul. 2003. The (temporal) semantics and (modal) pragmatics of the perfect. *Linguistics and Philosophy* 26(4):459–510.

Portner, Paul. 2011. Perfect and progressive. In K. von Heusinger, C. Maienborn, and P. Portner, eds., *Semantics: An international handbook of meaning*, pages 1217–1261. Berlin: DeGruyter.

Procházka, Stephan and Ismail Batan. 2015. The functions of active participles in Šāwi bedouin dialects. In *Arabic Varieties: Far and Wide: Proceedings of the 11th International Conference of AIDA*, pages 457–466.

Ramchand, Gillian et al. 1997. *Aspect and predication: The semantics of argument structure*. Oxford University Press.

Rubin, Aaron D. 2005. *Studies in Semitic Grammaticalization*. Harvard Semitic Studies, Vol 57. Winona Lake, IN: Eisenbrauns.

Ryding, Karin. 2005. *A Reference Grammar of Modern Standard Arabic*. Cambridge: Cambridge University Press.

Salih, Mahmud. 1985. *Aspects of Clause Structure in Standard Arabic: A Study in Relational Grammar*. Ph.D. thesis, SUNY at Buffalo.

Schwarze, Christoph. 2001. Representation and variation: On the development of romance auxiliary syntax. *Time over matter. Diachronic perspectives on morphosyntax* pages 143–172.

Seiss, Melanie. 2009. On the difference between auxiliaries, serial verbs and light verbs. In M. Butt and T. H. King, eds., *Proceedings of the LFG09 Conference*, pages 501–519. CSLI Publications.

Souag, Mostafa Lameen. 2006. Explorations in the syntactic cartography of Algerian Arabic.

Trask, Robert L. 1979. On the origins of ergativity. In F. Plank, ed., *Ergativity: Towards a theory of grammatical relations*, pages 385–404. London: Academic Press.

Vincent, Nigel. 1982. The development of the auxiliaries *habere* and *esse* in Romance. *Studies in the Romance verb* pages 71–96.

Vincent, Nigel. 2001. LFG as a model of syntactic change. In Miriam Butt and Tracy Holloway King, ed., *Time over Matter: Diachronic Perspectives on Morphosyntax*, pages 1–42. Stanford, CA: CSLI Publications.

Vincent, Nigel and Kersti Börjars. 2010. Grammaticalization and models of language. In E. Traugott and G. Trousdale, eds., *Gradience, gradualness and grammaticalization*, pages 279–300. Amsterdam/Philadelphia: John Banjamins.

Watson, Janet C. E. 1993. *A Syntax of Ṣanānī Arabic*, vol. 13. Berlin: Otto Harrassowitz Verlag.

Woidich, Manfred. 1995. Some cases of grammaticalization in Egyptian Arabic. In J. Cremona and C. Holes, eds., *The Proceedings of AIDA II (1995)*, pages 259–268.