
GRAMMATICALIZATION AS DECATEGORYIZATION*

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ABSTRACT This paper aims to offer a formal analysis of grammaticalization, focusing on a change from speech verbs to complementizers and other functional elements. Assuming that speech verbs consist of category-neutral roots and the verbalizer (the category-determining head), I suggest that grammaticalization of speech verbs involves loss of the verbalizer component. The proposed analysis makes a different prediction regarding possible stages/patterns of the grammaticalization in question from other generative analyses, which I argue is desirable. In particular, investigating evidential markers that have developed from speech verbs and operators that induce indexical shift, I argue that these elements are in a stage of grammaticalization predicted to exist under the proposed analysis.

1 INTRODUCTION

Grammaticalization is one of the most well-studied topics not only in descriptive and traditional linguistics but also in diachronic generative syntax (e.g. Roberts & Roussou 2003, van Gelderen 2004, see also van Gelderen 2011). While a wider range of grammaticalization phenomena have been studied in generative grammar, there is no detailed analysis of grammaticalization of speech verbs, even though it is one of the most well-attested patterns of grammaticalization in a number of unrelated languages and one of the most-well studied topics in traditional grammar. The goal of this paper is thus to offer a formal generative analysis of grammaticalization involving

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speech verbs.

To illustrate the most typical case of grammaticalization of speech verbs, consider (1). In (1), *kua* in *Tukang Besi* was originally a speech verb, but it has become a complementizer, co-occurring with a matrix predicate ‘say’ (Klamer 2000).

- (1) *No-potae-m(o) kua no-motindo’u na amai*
 3.REALIS-say-PERFECTIVE KUA 3.REALIS-thirsty NOM they
 ‘They said that they were thirsty.’

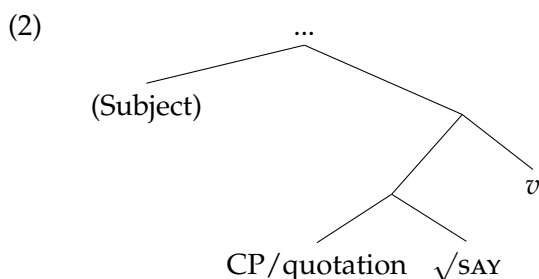
In this paper, assuming that speech verbs consist of roots (acategorical elements which encode phonological and semantic information) and a verbalizer element, I suggest that grammaticalization of speech verbs involves loss of the verbalizer layer, which I refer to as *decategorization*. I show that the proposed analysis makes a different prediction from the standard analyses in the generative literature (e.g. Roberts & Roussou 2003, van Gelderen 2004) regarding the stages and patterns of the grammaticalization process investigated in this paper, which I argue is desirable; there are elements that have developed from speech verbs which are predicted to exist under the proposed analysis.

The organization of this paper is the following. The next section outlines the gist of the proposal and shows that the proposed analysis predicts a particular intermediate stage of the grammaticalization of speech verbs which differentiates the proposal made in this paper from other (generative) analyses. In Section 3, I will discuss in more detail the stages predicted under the current approach. In particular, investigating evidential markers which have developed from speech verbs and operators that induce indexical shift, I will argue that these elements are in a stage of grammaticalization which can be straightforwardly captured under the proposed analysis. Section 4 is the conclusion.

2 DECATEGORIZATION OF ‘SAY’

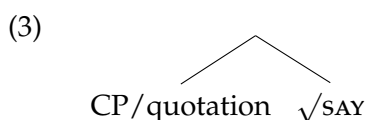
In this section, I will present the core idea of the proposed analysis. Assuming the distinction between roots and category-determining heads, I will suggest that grammaticalization of speech verbs involves loss of a category-determining head (specifically, the verbalizer *v*). I will also show that the proposed analysis makes a different prediction from other standard generative analyses regarding possible stages/patterns of the grammaticalization in question.

The most common pattern of the grammaticalization of speech verbs is a change from a speech verb to a complementizer, as exemplified in (1) above. Descriptively, the change found in (1) is a case where a speech verb has become a complementizer keeping its phonological shape the same. In other words, while the categorial status of the original speech verb has changed, its phonological information has not. To capture this, I assume that speech verbs, in fact, verbs in general, consist of (at least) two components, (i) a root ($\sqrt{\text{ROOT}}$), an acategorial component that encodes their phonological and semantic information, and (ii) a verbalizer component v (e.g. Pesetsky 1995, Marantz 1997, see also Halle & Marantz 1993).¹ Under this assumption, speech verbs have the structure in (2) (given in the head-final structure, but head directionality is not relevant to the discussion).



In (2), the category-neutral root $\sqrt{\text{SAY}}$ merges with the category-determining head v , the verbalizer, and it obtains its categorial status as a verb.²

Assuming the separation between roots and category-determining heads, I suggest that grammaticalization of speech verbs involves loss of the verbalizer layer v , as illustrated in (3). I refer to this change as *decategorization*.³



In (3), due to the absence of a category-determining head, $\sqrt{\text{SAY}}$ cannot obtain a verbal status. However, $\sqrt{\text{SAY}}$ is still syntactically present. Hence, if

¹ In principle, any framework which makes a distinction between a root and a categorizer, or more generally, a subcategorizing element and an element which determines its lexical categorial status would be compatible with the analysis proposed in this paper (cf. Marantz's 1997 discussion of Chomsky 1970).

² I assume that roots directly take their complements, following e.g. Harley (2014). It should, however, be noted that there is some controversy regarding whether or not roots can select, see e.g. Merchant (2014).

³ Note that I use the term *decategorization* as a descriptive term for the diachronic change here.

the only change involved here is the loss of *v*, we expect that the bare/free root $\sqrt{\text{SAY}}$ should retain (part of) its phonological and semantic information as well as its syntactic properties.⁴

What is particularly important for us here is that, under the current analysis, we make a novel prediction regarding possible patterns/stages of the grammaticalization in question. Under the standard analyses in the generative literature (e.g. Roberts & Roussou 2003, van Gelderen 2004), the grammaticalization from a speech verb to a complementizer, like (1), involves a reanalysis of the verb *say* as a complementizer. We then expect two stages, as shown in (4).

- (4) I. $[[_{\text{CP}} \dots (\text{C})] \text{say} (= \sqrt{\text{SAY}} + v)]$
 II. $[_{\text{CP}} \dots \text{C}_{\text{say}}]$

In the first stage (4-I), *say* is a regular speech verb. (The speech verb *say* can be seen as the combination of $\sqrt{\text{SAY}}$ plus the verbalizer *v*.) In the second stage (4-II), it has been reanalyzed as a complementizer, while its phonological shape remains the same, which is indicated by “ C_{say} ” (a complementizer with the pronunciation *say*).

Under the current approach, on the other hand, we predict an additional stage/pattern where $\sqrt{\text{SAY}}$ is present without *v*, as in (5).

- (5) I. $[[_{\text{CP}} \dots (\text{C})] \sqrt{\text{SAY}} + v]$
 II. $[[_{\text{CP}} \dots (\text{C})] \sqrt{\text{SAY}}]$
 III. $[_{\text{CP}} \dots \text{C}_{\text{say}}]$

The first stage (5-I) and the third stage (5-III) correspond to the first stage (4-I) and the second stage (4-II) above, respectively. What is important for us is (5-II). In (5-II), the speech verb (the combination of $\sqrt{\text{SAY}}$ and *v*) in (5-I) is reanalyzed as a bare root (decategorization). The second stage (5-II) which involves a bare root is the stage that does not follow under other analyses

⁴ Notice that I depart from the idea that roots must be (immediately) categorized, cf. Embick & Marantz (2008).

without additional assumptions.^{5,6} To clarify, the novelty of the current analysis concerns the particular intermediate stage in the grammaticalization process under investigation, where a bare root exists; the existence of intermediate stages in grammaticalization is in fact more generally postulated in generative literature (see e.g. Roberts 2010 for discussion).

Before proceeding, several notes are in order. The first note concerns motivations for the change in question. Following Klamer (2000) and Roberts & Roussou (2003), I assume that reanalysis triggering language change is motivated by the preference for “simpler” structure (van Gelderen 2004, 2008, 2019, but see also Fodor & Sakas 2017). When an input to which language acquirers are exposed is structurally ambiguous, they prefer the “simpler” structure. In the case of decategorization of speech verbs, if an original input to acquirers which is intended to have the structure in (5-I) is ambiguous for them between the structure in (5-I) and the one in (5-II), the latter is preferred and thus reanalyzed this way because the regular speech verb involves the *say* root and the verbalizer, while only the bare root is present in (5-II) (hence the structure in (5-II) contains fewer heads).⁷ The same holds for the reanalysis from (5-II) to (5-III); the reanalyzed structure in (5-III) involves less structure than the one in (5-II), $\sqrt{\text{SAY}}$ being absent (see also Klamer 2000). In this paper, I leave for future research detailed investigations of the exact motivation(s) for the proposed changes. While I assume that a preference for

5 As noted above, I assume that the verbalizer is the same head as the one introducing the external argument, namely *v*, following e.g. Harley (1995) and Marantz (1997). It should however be noted that this assumption is not uncontroversial (see e.g. Pytkäinen 2002). Also, Harley (2017) suggests that whether or not the verbalizer and the head introducing the external argument are distinct depends on the language. The separation of these two in fact would have interesting consequences for the proposal made here; we might expect another stage where the head introducing the external argument would be absent but *v* would be present. However, investigating relations between stages of grammaticalization and possible language variations regarding whether the verbalizer is the same head as the one introducing the external argument is beyond the scope of this paper.

6 A reviewer asks if the C has to be null for the changes in question to proceed. For the change from (5-I) to (5-II), the C does not have to be null, as shown in the discussion of Spanish *dizque* in Section 3. To get to the stage (5-III), it seems that having a null C at least facilitates the relevant reanalysis. While *say* in English cannot function as a complementizer (**John told say Mary is smart*, note that *say* is not an interjection here, like the one in *John told, say, Mary is smart*), it is in fact common for *say* or *talk* to be grammaticalized to a complementizer in English-based creole languages which have a null complementizer (e.g. Bislama, Crowley 1989).

7 For more detailed discussion of the notion of simplicity regarding language change, see e.g. Roberts (1993, 2007), Roberts & Roussou (2003), van Gelderen (2004, 2008, 2019). It is also worth noting that the notion of structural simplicity (or economy of representation) has been claimed to play an important role not only in language change but also in grammar in general, see e.g. Law (1991), Safir (1993), and Bošković (1997).

simplicity plays a role, it may be that there are other factors involved as well, e.g. frequency (see [Heycock & Wallenberg 2013](#)).

The second point concerns the existence of downward grammaticalization. The common pattern of grammaticalization is upwards, involving reanalysis by which an element ends up in a higher position (to illustrate, this would involve e.g. reanalysis of V as T). There has been a controversy whether there exists downward grammaticalization. [Roberts & Roussou \(2003\)](#), for example, claim that grammaticalization is always upwards. They thus postulate a stage where a speech verb becomes a T-element to analyze the change from speech verbs to complementizers (V>T>C change). On the other hand, grammaticalization can proceed downwards in e.g. [van Gelderen \(2004\)](#), [van der Auwera \(2010\)](#), [Munaro \(2016\)](#), [Biberauer \(2018\)](#). The current analysis also involves downward grammaticalization structures, as shown in (5). Thus, if the proposed analysis is on the right track, it argues for the existence of downward grammaticalization.

The third concerns the question of whether there is any systematic restriction on the suggested decategorization. One may wonder whether any kind of root can be reanalyzed as a decategorized root. For example, is there decategorized $\sqrt{\text{DOG}}$ or $\sqrt{\text{CAT}}$? It may be that relevant roots need to be somehow “basic”, such as ‘become’ and ‘make’; such roots (with a categorizer) may already have a semi-functional use (regarding ‘say’, see [Ross’s 1970](#) suggestion on performatives). Under the current analysis, however, the relevant reanalysis can in principle take place with any root (see [Roberts & Roussou 2003](#) for a similar view). In fact, as pointed out by [Roberts & Roussou \(2003\)](#), there do not seem to be general restrictions regarding which lexical item can undergo grammaticalization (see also [Heine & Kuteva 2002](#)). While whether there is any restriction on decategorization is an important question, I leave this issue open in this paper.

In the following section, I will investigate in more detail the three stages in (5). Most importantly, discussing evidential markers which have developed from speech verbs and indexical shift operators, I will argue that the intermediate stage (5-II), where there is a bare root, does exist; “Stage II” items are in fact cross-linguistically attested.

3 THE THREE STAGES

In this section, I will investigate in more detail the three stages presented in the previous section. I will show that items in all of the three stages are attested in unrelated languages. What is particularly important for us is that there are elements belonging to “Stage II” above, which is straightforwardly predicted to exist under the proposed analysis.

3.1 Fully verbal ‘say’

The first stage of grammaticalization of speech verbs is, of course, speech verbs (verbs of saying), e.g. *say*. This corresponds to (4-I) and (5-I) above.

Obviously, the most typical item in this stage is a regular verb of saying. For example, *kua* in *Tukang Besi* was originally a speech verb, as noted in Section 1, this usage of *kua* being now obsolete (Klamer 2000: 81). Another interesting case is found in languages like Taiwanese. As shown in (6), *kong* in Taiwanese can be used as a verb of saying.

- (6) *Ahui kong Asin m lai*
 Ahui say Asin NEG come
 ‘Ahui said Asin is not coming.’ (Simpson & Wu 2002: 75)

What is interesting for us here is that *kong* also has a grammaticalized usage as a complementizer, as in (7) (as we will see in more detail in Section 3.3 below). The full verbal structure in (2) can also be seen as a starting point of the grammaticalization in question.

- (7) *Ahui siong kong Asin m lai*
 Ahui think KONG Asin NEG come
 ‘Ahui thought that Asin is not coming.’ (Simpson & Wu 2002: 77)

In addition to speech verbs, I suggest that there are elements which look like complementizers but in fact involve a fully verbal structure just like regular speech verbs. I argue that *toiu* in Japanese is such a case. Consider (8).

- (8) *[[John-ga Mary-o sukida] toiu] uwasa*
 John-NOM Mary-ACC like TOIU rumor
 ‘the rumor that John likes Mary’

As in (8), *toiu* appears between the head noun (*uwasa* ‘rumor’) and the clause that describes the content of the head noun (‘John likes Mary’). Thus, *toiu* appears to be located in the “complementizer position” in pure (i.e. non-relative) complex NPs, where a head noun takes a clausal complement, as schematically shown in (9).

- (9) [NP [Clause ...] *toiu* N]

Consequently, *toiu* has been typically assumed to be a complementizer (i.e. C^0) in pure complex NPs since Kuno (1973) and Nakau (1973). Under this assumption, (8) would have the following structure.

- (10) [NP [CP ... *toiu*_C] N]

However, contrary to this standard assumption, Song (1975, 1977) suggests that *toiu* is not a simple complementizer but rather has a more complex structure. He argues that *toiu* consists of the unmarked complementizer *to* and (the present tense form of) the speech verb *iu* ‘say’. Under this analysis, complex nouns like (8) would in fact involve a relative clause rather than a clausal complement of the head noun (cf. Moulton 2015 and references therein for *that*-clauses in English). Thus, (8) would have the structure given in (11), and (8) is interpreted as ‘(the) rumor which says that John likes Mary’.⁸

- (11) [NP [Relative Clause e_i [CP [John likes Mary] *to*_C] *iu*] rumor_i]
 ‘(the) rumor which says that John likes Mary’

There is independent evidence for Song’s analysis of *toiu*, which comes from the “past version” of *toiu*. As a speech verb, *iu* ‘say’ in *toiu* can have past inflection (*-ta*) (see e.g. Nakau 1973, Song 1975, 1977), as in (12). Saito (2017) takes this fact to indicate that *toiu* and *toitta* involve at least *v* and T layers.

- (12) *John-ga Mary-o sukida toitta uwasa*
 John-NOM Mary-ACC like TOIU(“PAST”) rumor
 ‘the rumor that John likes Mary’

If this analysis of *toiu* is on the right track, the apparent complementizer *toiu* in fact involves a speech verb (see Saito 2020 for more evidence for Song’s analysis of *toiu*). But it is still worth noting again that *toiu* has been assumed to be a complementizer due to its distribution – it appears in the canonical “C-position” in complex NPs, as observed above. In fact, this distributional property of *toiu* seems to have facilitated semantic bleaching of the speech verb *iu* ‘say’ in terms of semantic selection of *iu* ‘say’. The verb *iu* usually requires a human subject. As shown in (13), *iu* taking a non-human subject like ‘rumor’ results in infelicity, since rumors cannot make an utterance.

- (13) # (*Sono*) *uwasa-ga [John-ga Mary-o sukida to] i-u*
 that rumor-NOM John-NOM Mary-ACC like C say-PRES
 ‘The rumor says that John likes Mary.’

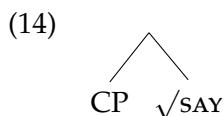
⁸ In (11), e indicates a gap in the relative clause. I leave open the exact analysis of relative clauses (e.g. whether they involve movement or (null) resumptive pronouns, what the category of relative clauses is...), see e.g. Murasugi 1991 for discussion of Japanese relative clauses).

However, as observed in (8) and (12), this semantic requirement of *iu* is bleached in complex NPs. When *iu* appears in complex NPs, its subject can be non-human (cf. Song 1975, 1977).⁹ Thus, it seems that *toiu* in Japanese is currently in the process of grammaticalization; while it still has a fully verbal structure in that it syntactically introduces the external argument (via *v*), as argued above, it also exhibits bleached semantics in terms of semantic selection of the speech verb in that it does not require a human subject in complex NPs.

3.2 Decategorization of “say”

In this subsection, I will investigate a stage where the *say* root ($\sqrt{\text{SAY}}$) is present without the verbalizer component *v* in more detail (see (3), (5-II)). As discussed in the previous section, it is crucial to show that there are items in this stage, since the existence of this stage is predicted under the proposed analysis, while it seems difficult, without additional assumptions, to capture it under standard analyses like Roberts & Roussou (2003) and van Gelderen (2004).

Before discussing concrete examples, let us consider what kind of element we would expect to find in this stage. The structure of “decategorized *say*” (i.e. $\sqrt{\text{SAY}}$ without *v*) is repeated in (14).¹⁰



As discussed in Section 2, $\sqrt{\text{SAY}}$ cannot be verbal here due to the absence of the category-determining head (*v*). I suggest that this decategorization is responsible for a particular type of semantic bleaching. If we assume that *v* introduces the external argument (Harley 1995, Marantz 1997), the loss of *v* means the loss of the external argument. Importantly, the loss of the external argument has been independently claimed to play a crucial role in the grammaticalization of speech verbs (see Klammer 2000, Roberts & Roussou

⁹ This kind of semantic bleaching of speech verbs is in fact cross-linguistically common, as exemplified by *say* in English. Just like the case of *toiu* in the text, the external argument of *say* can be non-human.

(i) The {transcript, corpus, archive, data} says that Bill is the murderer.
(Anand, Grimshaw & Hacquard to appear)

¹⁰ In this section, I will focus on cases where $\sqrt{\text{SAY}}$ takes a CP complement, putting aside cases where $\sqrt{\text{SAY}}$ introduces a direct quote.

2003). Under the current analysis, the loss of the external argument follows from the loss of *v*, without positing any special semantic bleaching process or rule.¹¹

I further note that while decategorized, $\sqrt{\text{SAY}}$ should retain (part of) its phonological and semantic properties as well as its syntactic selectional property. Informally put, what we should get here is non-verbal (non-lexical) elements which have a “say-like” pronunciation and interpretation. To be more precise, on the phonology side, as $\sqrt{\text{SAY}}$ encodes relevant phonological information, decategorized *say* should still be pronounced *say*. On the semantics side, as standardly assumed for attitude predicates, I assume that $\sqrt{\text{SAY}}$ encodes at least (i) information of speech, (ii) the attitude holder of the speech (the speaker), and (iii) an accessibility relation between the world of evaluation and possible worlds (or situations/context). The first property is rather straightforward; the *say* root encodes information of saying. The second property comes from the first one; if there is saying, there should be a “sayer” and the proposition that has been said.¹² The third property connects the world of evaluation (typically, the actual world) to the worlds/situations/contexts that are compatible with what the speaker says/said (cf. von Stechow & Heim 2011; the sentence *John says Bill dances* is true in our actual world iff in all worlds which are compatible with what John says in the actual world, Bill dances). We would thus expect elements in the intermediate stage in question (= (5-II)) to be non-verbal items encoding such semantic information. Furthermore, retaining its syntactic selectional property, $\sqrt{\text{SAY}}$ should select a CP complement (or a quote), i.e. it should be located above CP.¹³

In the following subsections, I will argue that evidential markers that have developed from speech verbs and operators which introduce indexical shift are in the intermediate stage in question, where the bare *say* root is present.

11 Recall that in the case of (*iu* in) *toiu*, the speech verb ($\sqrt{\text{SAY}}$ plus *v*) does syntactically introduce the external argument. In (14), there is no head introducing an external argument, so the external argument is syntactically absent.

12 Note that semantically encoding the information of the speaker/attitude holder does not mean that the attitude holder must be syntactically introduced/present (for example, the attitude holder can be provided by the context or existential closure in semantics, see e.g. Faller 2002). I assume that *v* is necessary to syntactically introduce an external argument (“sayer”).

13 I leave open the exact category of the whole phrase in (14). Under Chomsky’s (2013, 2015) Labeling Algorithm, roots do not project while Harley (2014) suggests that they do just like other syntactic categories. I tentatively assume that roots project, but if roots do not project, elements in Stage II could be viewed as an instance of complex complementizers (because the C head would project), which have been cross-linguistically observed (I would like to thank a reviewer for pointing this out). Notice that Stage II items would still be distinct from unmarked complementizers, which will be discussed in Section 3.3.

I will show that they are non-verbal but still have a *say*-like pronunciation and interpretation.

3.2.1 (Hearsay) evidentials from “say”

In many languages, grammaticalized *say* functions as an evidential marker. For example, the hearsay evidential suffix *-lda* in Lezgian (Northeast Caucasian) has developed from *luhuda* ‘(one) says’ (Haspelmath 1993: 148).¹⁴ In (15) below, we can observe the non-verbal status of *-lda*; no aspect or tense suffix, which is necessary for verbs in Lezgian, is found on *-lda*. Also, the speaker of the speech event expressed by *-lda* (= the source of information) is syntactically suppressed, *-lda* being non-verbal. Still, (15) is interpreted as meaning that somebody, translated as generic *they*, has made an utterance that there would be a meeting.

- (15) *Qe sobranie že-da-lda*
 today meeting be-FUT-EVID
 ‘They say that there will be a meeting today.’

While this kind of evidential marker has been grammaticalized and is no longer verbal, it still signals that there is/was a speech event, marking hearsay evidentiality. Furthermore, it is pronounced like the original speech verb. I argue that such evidential markers are in the intermediate stage (5-II), where $\sqrt{\text{SAY}}$ is present without *v*. These evidential markers have a *say*-like pronunciation and interpretation due to $\sqrt{\text{SAY}}$; on the semantics side, as $\sqrt{\text{SAY}}$ encodes information of a speech event, this kind of element marks hearsay evidentiality. On the phonology side, $\sqrt{\text{SAY}}$ encodes the phonological information of a speech verb, so the derived evidentials are pronounced like the original speech verbs. In fact, cross-linguistically, speech verbs are a common source of evidentials, especially hearsay evidentials (reported information) (see Aikhenvald 2004, 2011 for more examples of this kind).

¹⁴ It is cross-linguistically common that a specific inflected form of a speech verb, not just the verb stem, is grammaticalized as an evidential marker (e.g. third person singular, in fact uninflected verb stems are often not free morphemes). Thus, given that the phonological information of $\sqrt{\text{SAY}}$ is typically assumed to be that of the stem of a speech verb, in a grammaticalization process, $\sqrt{\text{SAY}}$ seems to be reanalyzed in a way that such a particular form is encoded as a phonological content of $\sqrt{\text{SAY}}$. Such reanalysis ensures that the specific form in question is no longer syntactically/morphologically complex. E.g., even if a grammaticalized item looks like the third person singular form of *say*, the phonological form is invariant and it no longer morphologically encodes third person singular. See also the discussion of *dizque* in the text below.

Another common case of grammaticalized evidentials is those which have developed from the combination of a speech verb and a complementizer. Thus, *dizque* in Colombian Spanish in (16) has developed from *dice que* ‘s/he says that’ (Cruschina & Remberger 2008: 100). As indicated by the translation, *dizque* marks hearsay evidentiality.¹⁵

- (16) *Dizque esto va a ser genial*
 DIZQUE this go.PRES to be.INF great
 ‘This is going to be great (they say).’

Despite the fact that *dizque* has developed from the combination of ‘say’ and C, it has been fully grammaticalized and is no longer verbal, as Cruschina & Remberger (2008) show extensively. Phonologically, these elements have undergone reduction (phonological erosion), e.g. the change from *dice que* to *dizque* involves apocope of the verbal form and the complementizer has been fused with the verbal form. Morpho-syntactically, these elements are invariable and cannot be inflected. Thus, *dizque* cannot encode any morphological information regarding person, number, tense, or mood, as (17) shows (see Cruschina & Remberger 2008 for additional evidence that *dizque* is not verbal).

- (17) *dizque* → **diceque* (Pres), **decíaque* (Imperf), **dijoque* (Past)

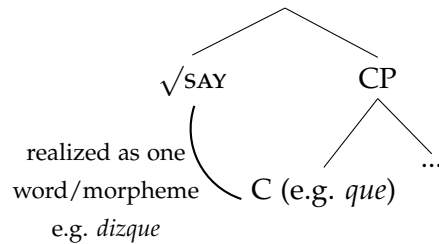
Therefore, what we observe here is again a non-verbal item which still has a *say*-like pronunciation (with the combination of *que*, see below) and interpretation (encoding information of speech).

For evidential markers of this kind, I suggest that the combination of $\sqrt{\text{SAY}}$ and the C head in (14) is morpho-phonologically realized as one element (e.g. via *fusion*, Halle & Marantz 1993), as illustrated in (18) (phonologically, $\sqrt{\text{SAY}}$ basically contributes the *diz* part in *dizque*. I here assume that the *que* part in *dizque* is in fact the standard complementizer *que* in Spanish, see Cruschina & Remberger 2008). But crucially, both heads are syntactically present.

¹⁵ See Cruschina & Remberger (2008) for more examples of this kind in Romance (i.e. evidential markers which have come from the combination of the verb ‘say’ and a complementizer). It should also be noted that the distribution of *dizque* is not limited to the sentence-initial position, as shown in (i). This seems to indicate that *dizque* has been further grammaticalized to an evidential particle.

- (i) *Esto dizque va a ser genial*
 this DIZQUE go.PRES to be.INF great
 ‘This is going to be great, they say.’

(18)



Thus, the difference between evidential markers that have developed from ‘say’ (e.g. Lezgian *-lda*) and the ones that have come from the combination of ‘say’ and C (e.g. Colombian Spanish *dizque*) is that $\sqrt{\text{SAY}}$ is fused with the overt C head in the latter case. Crucially, $\sqrt{\text{SAY}}$ is present in both cases. The former type of evidential thus has the *say*-like pronunciation and the latter has the “*say+C*”-like pronunciation. Furthermore, both have a *say*-like interpretation, marking hearsay evidentiality. However, due to the lack of *v*, neither kind of evidential is verbal any longer, despite their etymology; both have developed from a speech verb. Still, they are also phonologically and semantically distinct from unmarked complementizers.

Before proceeding, consider how the change from speech verbs to this kind of evidential happens. Take the case of *dizque* (which has derived from *dice que* ‘s/he says’) as an example. Suppose that acquirers are exposed to the following utterance (schematically shown in English words).

(19) *pro* says that John is smart.

This phonological string is ambiguous to acquirers; they can in principle postulate two possible syntactic structures for (19), as in (20a) and (20b).

- (20) a. [*pro* T [_{vP} *v* [$\sqrt{\text{SAY}}$ [that John is smart]]]]
 b. [$\sqrt{\text{SAY}}$ [that John is smart]]

In (20a), the combination of T, *v*, and $\sqrt{\text{SAY}}$ is spelled out as *says*, and we obtain the phonological string *says that John is smart* (*pro* is phonologically null). Also in (20b), we obtain the same phonological string via fusion of the C head and $\sqrt{\text{SAY}}$, which yields the *say-that* string, as discussed above (see footnote 14 for a potential additional reanalysis). As the latter option involves less structure, this is preferred. Thus, speech verbs change to evidentials. It should however be noted that what is shown here is simplistic. For example, it is well known that phonological reduction and/or semantic bleaching facilitate grammaticalization. In fact, the change from *dice que* to *dizque* has

involved both phonological reduction and semantic bleaching (Cruschina & Remberger 2008).

3.2.2 Indexical shift operators

In addition to evidential markers, I suggest that operators which induce indexical shift are in the intermediate stage (5-II), where $\sqrt{\text{say}}$ is present without the verbalizer component *v*.

Indexicals refer to items whose interpretation depends on the context, e.g. *I, here, now*. Kaplan (1977) conjectures that indexicals obligatorily refer to the actual context even when truly embedded. Despite Kaplan's (1977) conjecture, recent studies have shown that some languages have indexical shift, whereby an indexical expression is interpreted with respect to a non-actual context (Schlenker 2003 a.o.). To schematically illustrate indexical shift, consider (21).

(21) John said that I am a hero.

In languages without indexical shift regarding person pronouns, e.g. English, the indexical *I* in (21) must refer to the actual speaker of (21); it cannot refer to the reported speaker John. However, in languages with such indexical shift, like Amharic, the indexical *I* can refer to the reported speaker John even when truly embedded (i.e. even in indirect quotations).

Investigating languages with indexical shift, Anand & Nevins (2004) and Anand (2006), among many others, argue for the existence of an operator (a context shifter) which licenses indexical shift in its syntactic domain, as in (22). Thus in (22), the embedded CP is in the domain of the operator and elements within this CP can get a shifted interpretation.

(22) ... say_(or attitude verb) [OP [CP (C) ...]]

What is important for the current discussion is that, in many languages, complementizers which have developed from *say* ("*say* complementizers") are necessary for indexical shift (e.g. Amharic, Anand 2006; Uyghur, Shklovsky & Sudo 2014; Mishar Tatar, Podobryaev 2014; Tsez, Podobryaev 2014; Telugu, Messick 2017; see Messick 2017 for general discussion). However, this important observation has remained unexplained in the literature because in (22), it is the OP, not the C head (pronounced *say*), that has been assumed to work as a context shifter. Therefore, the relation between *say* complementizers and indexical shift has not been clear, i.e. it has not been captured before in a principled way (cf. Messick 2017).

Crucially, in (22), OP is located above the embedded CP. In other words, OP takes a CP complement. Given this, I suggest that (22) should be reinterpreted as (23), where the operator in question is in fact the *say* root without *v*.

(23) ... say [$\sqrt{\text{SAY}}$ [_{CP} C ...]]

In (23), $\sqrt{\text{SAY}}$ retains its syntactic selectional property in that it selects a CP complement.¹⁶ Furthermore, (23) captures why *say* complementizers are necessary for indexical shift. If $\sqrt{\text{SAY}}$ is fused with the (null) C head, as we have seen in the case of the evidentials above, the combination of these two heads is realized as one element, which I argue is what has been called *say* complementizers in the literature. Under the current analysis, it is $\sqrt{\text{SAY}}$ that works as an operator which induces indexical shift *and* contributes to the pronunciation *say*. Thus, indexical shift then needs $\sqrt{\text{SAY}}$, which also has the phonological information of *say*.

Notice here that $\sqrt{\text{SAY}}$ in (23) is not completely semantically bleached. I suggest that $\sqrt{\text{SAY}}$ here at least encodes information of the attitude holder (the perspectival pivot) and relations between contexts. Just like OP in (22), $\sqrt{\text{SAY}}$ signals that indexical items in its syntactic domain are interpreted with respect to a non-actual context, where the speaker/author is the attitude holder of the matrix predicate. Therefore, like the cases of evidentials above, we here observe non-verbal items which have a *say*-like pronunciation and interpretation. Also note that this kind of *say* complementizer, i.e. those which are necessary for indexical shift, is different from other kinds of *say* complementizer which seem to have undergone complete semantic bleaching, as we will see in the next subsection.

Note that $\sqrt{\text{SAY}}$, not a speech verb (i.e. $\sqrt{\text{SAY}}$ plus the verbalizer *v*), licenses indexical shift in (23); *v* is not necessary to induce indexical shift. We may thus expect to find a case where indexical shift occurs without a true verb of saying. In fact, this seems to be the case. In Dani (Papuan), purpose clauses are introduced by *ylvk*, which has been grammaticalized from a speech verb. In this type of purpose clause, indexical shift is in fact possible (Bromley 1981, Wechsler 2014), as in (24). In (24), the (null)

¹⁶ In (23), the speech verb, which is the combination of $\sqrt{\text{SAY}}$ and *v*, selects the phrase headed by $\sqrt{\text{SAY}}$, which in turn selects a CP complement. Thus, $\sqrt{\text{SAY}}$ should be able to select both a phrase headed by $\sqrt{\text{SAY}}$ and a CP. This kind of optionality of subcategorization is in fact suggested by Anand (2006); he suggests that attitude verbs can select a regular CP complement and/or the indexical shift operator (= OP in (22)) (which is subject to language variation). However, as pointed out by a reviewer, there have been proposals regarding a ban on multiple elements of the same type in certain domains (Richards 2010, Leivada 2017, among others), an issue I put aside for future research.

embedded subject refers to the matrix subject, which is third person, but controls the first person agreement on the embedded verb ‘kill’.

- (24) [paik wasik- ylvk] wakama
 forest.animal 1SG.HORT.kill- say-PTPL 3SG.M.came
 ‘He has come in order to kill forest animals.’

To sum up, I have argued that there are elements in the intermediate stage (5-II), where we find non-verbal items that still have a *say*-like pronunciation and interpretation. I have suggested that hearsay evidentials which have developed from *say* and operators (“*say* complementizers”) that induce indexical shift are in this stage. The existence of these items is captured under the proposed analysis of grammaticalization of *say*.

3.3 *Say complementizer (as unmarked C)*

The last stage of the grammaticalization in (4) and (5), namely (4-II) and (5-III), is the one where the original speech verb or $\sqrt{\text{SAY}}$ is reanalyzed as an (unmarked) complementizer (*say* complementizer).

As we have seen in (6) and (7) above, Taiwanese *kong* is originally a speech verb, but it also has a grammaticalized use as a complementizer, as repeated in (25).

- (25) Ahui siong **kong** Asin m lai
 Ahui think KONG Asin NEG come
 ‘Ahui thought that Asin is not coming.’

In (25), *kong*, as a complementizer, co-occurs with the matrix predicate *siong* ‘think’. In fact, *kong* can co-occur with a wide range of matrix predicates including *chin gao kong* ‘very clever that’ and *e-sai kong* ‘it is possible that’ (Chappell 2008). This fact implies that the complementizer *kong* is an unmarked complementizer in Taiwanese. The original semantics of $\sqrt{\text{SAY}}$ is completely bleached with this use, $\sqrt{\text{SAY}}$ being reanalyzed as C. It should be noted that *say* complementizers of this type differ from “*say* complementizers” that induce indexical shift, which we have seen in the previous subsection; the former seem to have undergone complete semantic bleaching while the latter retain part of the semantics of $\sqrt{\text{SAY}}$, as discussed above (i.e. the attitude holder and the relations between contexts).¹⁷

¹⁷ *Kong* in Taiwanese can also occur sentence-finally in main clauses, as in (i-a). Also, this sentence-final *kong* can co-occur with the unmarked complementizer *kong* like the one in (25), as (i-b) shows.

Say complementizers of this kind are in fact the most common grammaticalized form of speech verbs, and they have been reported in a number of unrelated languages, e.g. Buru, (Austronesian), Yoruba (Niger-Congo), Nepali (Indo-Aryan), Telugu (Dravidian), Chinese (Sino-Tibetan), and Thai (Tai-Kadai) (see Lord 1976, 1993, Klamer 2000). Thus, just like Taiwanese *kong*, *fen(e)* in Buru is originally a speech verb, but it can also be used as a complementizer, as in (26) (Grimes 1991, Klamer 2000).

- (26) *Ringe prepa fene da moho*
 3SG say FEN 3SG fall
 ‘He said that he fell.’ (Grimes 1991: 224)

Let us consider how the relevant change happens. It has been reported that grammaticalization from *say* to C is often found in languages with serial verb constructions (Lord 1976, 1993, Klamer 2000, Simpson & Wu 2002,

- (i) a. *Asin m lai kong*
 Asin NEG come KONG
 ‘Asin is not coming.’ (Simpson & Wu 2002: 81)
 b. *Ahui siong kong Asin m lai kong*
 Ahui think KONG Asin NEG come KONG
 ‘Ahui thought that Asin is not coming.’ (Simpson & Wu 2002: 80)

Simpson & Wu (2002) suggest that sentence-final *kong*, just like the unmarked complementizer *kong*, is located in C⁰ and the IP which sentence-final *kong* selects moves to Spec-CP, yielding the IP-*kong* word order. Under their analysis, (i-a) and (i-b) thus have the structure in (ii-a) and (ii-b), respectively.

- (ii) a. [CP [IP Asin m lai] kong_C t_{IP}]
 b. [CP [IP₁ Asin siong [CP kong_C [IP₂ Asin m lai]]] kong_C t_{IP1}]

A reviewer asks how the current analysis accounts for sentence-final *kong*. There are two possible solutions. One is to assume that both occurrences of *kong* are instances of C⁰, following Simpson & Wu (2002). The other option is the following: given that Simpson & Wu (2002) observe that final *kong* marks “topic-like information”, and assuming that the semantics of $\sqrt{\text{SAY}}$ is somehow responsible for this meaning (verbs of saying can in fact mark topicality, e.g. *speaking of*), we may posit that final *kong* is in fact an instance of the bare root $\sqrt{\text{SAY}}$. We would then have movement of the CP, which is selected by $\sqrt{\text{SAY}}$, or movement of the IP out of the CP, as shown in (iii-a) and (iii-b) respectively (notice that Taiwanese has a null complementizer).

- (iii) a. [[CP C_{null} Asin m lai] $\sqrt{\text{SAY}}$ t_{CP}]
 b. [[IP Asin m lai] $\sqrt{\text{SAY}}$ [CP C_{null} t_{IP}]]

It is worth noting that this analysis is reminiscent of Bošković’s (2017) alternative analysis to Simpson & Wu (2002). Bošković (2017) argues against Simpson & Wu’s (2002) analysis of sentence-final *kong* and suggests that there is a null speech verb which takes a CP, whose head is *kong* (the IP selected by *kong* moves to derive the *kong*-final word order).

Roberts & Roussou 2003). Suppose that language acquirers are exposed to a phonological string involving a serial verb construction whose second member is *say*, as schematically given in English in (27) (adopted from Simpson & Wu 2002).

(27) John tell say [_{CP} ...]

The schematic representation of a serial verb construction is given in (28a) below (I put aside the exact analysis of serial verb constructions, see e.g. Baker 1989, 1991, Collins 1997). There are, however, alternative structures to parse the string in (27); in (28b), the verb *say* is reanalyzed as a bare root, which takes a clausal complement. In (28c), the phonological string *say* is analyzed as a complementizer. In other words, the input in (27) is ambiguous among (28a)–(28c) for acquirers.

- (28) (a) John [_{vP} [_{vP1} *v* √TELL] [_{vP2} *v* √SAY] [_{CP} ...]]
 (b) John [_{vP} *v* √TELL [√SAY [_{CP} ...]]]
 (c) John [_{vP} *v* [√TELL [_{CP} say_C ...]]]

Notice here that the structures in (28b) and (28c) yield the same phonological string as the one in (28a). Consider the change from speech verbs to complementizers first. If acquirers prefer the simpler structure when they are exposed to an ambiguous input, as Roberts & Roussou (2003), among others, suggest, they will choose (28c) over (28a) (and (28b)) because the former is simpler; (28c) involves one verbal element (*tell*) which introduces an embedded clause (which is headed by the complementizer *say*), while (28a) involves two verbal elements as well as an embedded clause below them. Importantly, the current analysis also predicts the stage (28b), where the bare *say* root is present (= the change from (28a) to (28b)), as (28b) involves less structure than (28a); the second *v* layer in (28a) is missing in (28b). This is in fact the case of the operators discussed in the previous subsection: √SAY is located between the embedded CP and the matrix speech predicate (*tell*).

3.4 Section summary

In this section, I have investigated the three stages discussed in Section 2. I have shown that all three of the stages are attested cross-linguistically. Most importantly, investigating hearsay evidentials that have come from speech verbs and indexical shift operators, I have argued for the existence of the intermediate stage (5-II), which is predicted under the proposed analysis where grammaticalization of *say* involves decategorization (i.e. the loss of *v*). Also,

the current analysis involves downward grammaticalization, which is not a type assumed by [Roberts & Roussou \(2003\)](#). Thus, the proposed analysis can also be viewed as support for the existence of downward grammaticalization.

4 CONCLUSION

Investigating grammaticalization of speech verbs, I have proposed that the grammaticalization in question involves decategorization of *say*, which is loss of the verbalizer *v*. I have shown that this proposal predicts an intermediate stage, where the bare *say* root is present. This stage is not easily captured under other analyses ([Roberts & Roussou 2003](#), [van Gelderen 2004](#)). I have argued that this stage indeed exists, by showing that there are non-verbal items which still have a *say*-like pronunciation and interpretation (evidentials and operators that induce indexical shift).

Before concluding this paper, two notes are in order. The first concerns directionality of grammaticalization. It has been claimed/observed that grammaticalization is a unidirectional process, i.e. it always involves a change from less to more functional/grammatical elements, not the other way around (see e.g. [Hopper & Traugott 1993](#), cf. [Newmeyer 1998](#), see also [Traugott & Dasher 1993](#)). One of the most common patterns of grammaticalization is cases where functional items develop from lexical items (for example, in many languages, tense markers have developed from verbs, e.g. the Greek future particle, see [Roberts & Roussou 2003](#) for a generative analysis). I here suggest that the current analysis may capture (in part) why grammaticalization is unidirectional. Under the current analysis, the change from lexical to functional items would involve decategorization, i.e. loss of a category-determining head. To have a “reverse pattern”, namely functional-to-lexical change, we would need a reanalysis by which language acquirers would newly postulate the presence of a categorizer even though there is none in their original input, which should be blocked due to the preference for simpler structures (e.g. [Klamer 2000](#), [Roberts & Roussou 2003](#), see Section 2). However, further investigation is necessary to determine whether or not this is the only way for lexical-to-functional change to proceed.¹⁸

The second point concerns the fact that the current analysis predicts an intermediate stage of the grammaticalization which major generative analyses do not (e.g. [Roberts & Roussou 2003](#), [van Gelderen 2004](#)). I have argued that this is a desirable result. Specifically, it predicts a stage where a bare root

¹⁸ It should also be noted that it has been observed that there is unidirectionality of grammaticalization even within the lexical or the functional domain (see e.g. [Hopper & Traugott 1993](#), [Roberts & Roussou 2003](#) for relevant discussion), which the suggestion made here would not cover.

is present without a categorizer (cf. Biberauer 2018). More generally, the proposed analysis predicts more fine-grained stages of grammaticalization. This may enable us to capture an important observation in traditional/descriptive linguistics that there is a “cline” of grammaticalization, i.e. a pathway along which grammaticalization proceeds (e.g. Hopper & Traugott 1993, cf. Roberts’s 2010 discussion of fine-grained stages in grammaticalization). In many cases of grammaticalization, there are multiple stages of change. The decategorization analysis proposed in this paper may thus provide a new tool to investigate such fine-grained stages in the framework of generative grammar.

Correction: At the request of the author, this article was updated to include a correction on 07/01/2022. The year of Harley (2017) was corrected from 1993 to 2017.

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