COMPLEMENTATION AND MODALITY: TWO COMPLEMENTIZERS IN EAST DANGLA

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In East Dangla (Afroasiatic: Chadic, East Branch), there are two complementizers, Pronoun-*s*, whose pronominal element encodes the gender, person, and number of the subject of the main verb, and *kàdàr* (lexical origin unknown), which are in complementary distribution. Some complement-taking verbs always select the same complementizer; other verbs may occur with either complementizer; still others vary between one complementizer and no complementizer at all. The functions of the two complementizers depend on the main verb whose complements they introduce and whether the subjects of the main and the complement clause are co-referential. For example, with the verb 'see', the complementizer *kàdàr* codes INDIRECT evidence, while with the verb 'know', *kàdàr* codes DIRECT evidence. The functions of a given complementizer can be understood only through an examination of the range of main verbs with which it occurs, the possibility that it or another complementizer (or no complementizer) may occur with a given verb, and the lexical origins of the complementizer, which may in part determine its synchronic distribution.*

1. INTRODUCTION. In this paper I will show that in one language, East Dangla (Afroasiatic: Chadic, East Branch), grammatical devices from several domains interact to encode a single grammatical function. The grammatical devices to be discussed here are: (a) the morphological coding of realis or irrealis mood in the complement clause; (b) the choice of complementizer; (c) the choice of main verb; and (d) clausal order. Values selected from these four domains combine in various ways to encode: (i) the speaker's belief or lack of belief in the truth of the proposition; (ii) the speaker's source of information (direct vs. indirect evidence vs. hearsay); (iii) the subject's belief or lack of belief in the proposition, when the subject and the speaker are not co-referential; (iv) the lexical meaning of the verb, if the verb is polysemous; and (v) whether the event described by the proposition is in some way actualized (realis) or not (irrealis). Because devices from several different grammatical domains interact in this way, it cannot be said that the selection of a certain value or feature from a certain domain always codes the same thing within the same language. For the same reason it cannot be said that a given function, e.g. the speaker's doubt in the truth of the proposition, is always coded by the same grammatical device. The presence of two complementizers in the language is in itself evidence that the same function (introducing a complement) is not always accomplished by the same form, and in fact forces a closer examination of exactly what is being coded in a sentence containing a complementizer (cf. Frajzyngier 1993b for exactly this type of analysis of the two complementizers found in Lele). It is well known that form-function pairings are not necessarily a complete description of what is going on in a grammatical system, but this is sometimes ignored or glossed over in comparative studies that attempt to show similarities and differences among the ways in which languages code functions. A cross-linguistic comparison of grammatical devices that begins with an investigation of what those devices do in different constructions in the same language, and what those devices do in combination with other devices, will yield a much richer type of linguistic description than a comparison that tries to simplify form-function relationships. The former approach may also yield a greater understanding of the processes of grammaticalization, since these will include what might be called combinatorial changes, through which a given grammatical device is added to or subtracted from the combination of devices encoding a given function.

The paper is organized as follows: §2 is a general description of East Dangla which provides the background necessary to understand the ensuing discussion. §3 is a description of complementation in East Dangla, in the course of which the interaction of the four grammatical devices under investigation will be described. In §4, I summarize

The following glosses are used in the text:

GLOSS	MEANING	GLOSS	MEANING
COMP	complementizer	IRR	irrealis marker
CONJ	conjunction	LOC	locative marker
DEM	demonstrative	M	masculine
DO	direct object	NEG	negative marker
EXCL	exclusive	PERF	perfective
F	feminine	PREP	preposition
IMPF	imperfective	REL	relative clause marker
INCL	inclusive	S	subject
INTERR	interrogative marker	SEQ	sequential marker
IO	indirect object	TEMP	temporal marker

my findings and attempt to generalize about the functions of the four devices. In §5, I discuss my findings and their general linguistic implications.

2. BACKGROUND ON EAST DANGLA. East Dangla and the related language West Dangla are spoken by about 20,000 inhabitants of five villages in south central Chad. No grammatical description has been written for either language, though there exist a dictionary of East Dangla (Montgolfier & Djibrine 1973), a dictionary of West Dangla (Fédry 1971) and two works on verbal morphology in East Dangla (Ebobissé 1979, 1987). The data used in this paper come from the following sources: a series of about 250 isolated sentences, elicited from a native-speaker consultant by means of a written questionnaire (the transcriptions were done by the consultant himself, who has had some linguistic training); a booklet designed to teach native speakers of East Dangla how to write their own language (Abbakar et al. 1975); a volume of folk-tale narratives transcribed by a native speaker in accordance with the rules found in Abbakar et al. (Adalta 1978); and examples used in Ebobissé 1979 and 1987.

East Dangla is a pro-drop language with SVO word order, which occurs in the following types of clauses: clauses with non-pronominal subjects; isolated simple sentences with pronominal subjects; main (first) clauses of isolated complex sentences with pronominal subjects; and embedded (second) clauses of different-subject complex sentences with pronominal subjects. All other types of clauses have pronominal subjects encoded by suffixes to the verb. In narrative texts, most sentences are of the type V-S O, where -S is a suffixed pronoun. In a SVO clause, an object or indirect object may be marked definite by the presence of an object or indirect object suffix on the verb. The suffix that codes definite object in a SVO clause has the same form as the suffix that codes the SUBJECT (S) of a V-S O clause (except in the third person). The suffix that codes definite indirect object in a SVO clause codes the OBJECT (DO) of a V-S O clause (again, except in the third person). In the case of third-person arguments, the subject suffix of the V-S O clause is identical with the SVO-clause INDIRECT object (IO). The situation is illustrated by the following examples, in which the relevant pronouns are underlined:[1]

(1)   *geem*   -*ak*   *òb*   -*níɲ*   -*té*
        person   PL   catch   <u>1PL.DO</u>   PERF
          'These people caught us.' (Ebobissé 1979:52)

(2)   ... *kar*   *á*   -*níɲ*   *éym*   -*íntí*
        ... SEQ   FUT   <u>1PL.S</u>   eat   3PL
          '... then we will eat them.' (Ebobissé 1979:110)

(3)   *no*   *bèr*   -<u>*dyi*</u>   *amày*
        1SG   give   <u>3M.IO</u>   water
          'I gave him water.' (Ebobissé 1979:53)

(4)   *sák*   -*tí*   *dyàlag* -*gì*   -*tí*   *andè*   *túa*   -*gì*   -<u>*dyi*</u>
        get up   3F   cook   IMPF   3F   food   eat   IMPF   <u>3M.S</u>
          '(She) gets up early and cooks food, and then he eats.' (Ebobissé 1979:107)

East Dangla has no tense marking per se but distinguishes between two aspects, perfective and imperfective, and two moods, realis and irrealis. Each combination of mood and aspect is associated with a different (though clearly related) set of pronominal suffixes. The derivation of these suffixes and their interrelationships are intriguing topics, but for this paper only the distinction between realis and irrealis is important. The realis mood is selected for events that the speaker believes are in some way actualized, factual or completed, while the irrealis mood is selected for events that the speaker does not believe to be factual or to have been actualized. The aspect of the verb is marked by complex tone patterns (discussed in detail in Ebobissé 1979) and by the selection of pronominal suffixes, if any, from the appropriate (perfective or imperfective) paradigm. As the examples below illustrate, the presence of a pronominal suffix may alter the tone pattern of the verb and may even, depending on the underlying tone pattern, neutralize the distinction between the perfective and the imperfective verb forms. In 6, the verb alters its tone pattern and undergoes ablaut in the final syllable due to the presence of the pronominal suffix. Examples:

(5)   *no*   *gidiy*   *màràl*   *diirá*
        1SG   trade.PERF   salt   yesterday
          'I bought salt yesterday.' (*gídiyé* 'trade')

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[1]   The morpheme *gàm*, and its variants *gem* and *geem* (ex. 1), refers to an unspecified person or group of people. It may also be used, as in 45, to refer to an unspecified thing.

(6)   *no   gidày   -gu   d̀ìrá*
        1SG trade.PERF 3PL yesterday
        'I bought it (collective: the salt) yesterday.'

(7)   *ŋà gídáy   bèrka*
        3M trade.IMPF cow
        'He is buying a cow.'

The irrealis mood is marked by the irrealis marker *áa*, which Ebobissé regards as the marker of future tense (Ebobissé 1979, 1987). When this marker follows a personal pronoun, it has the effect of lengthening the vowel of the pronoun; thus *no* (1SG) becomes *no-o* (1PL.IRR), *ní* (1PL) becomes *ní-i* (1PL.IRR), and so on. Pronominal suffixes of the irrealis mood constitute a separate paradigm from those of the realis mood (these suffixes are presented in Ebobissé 1979 as 'Futur-Perfekt'). The verb itself is in the infinitive form even if followed by a pronominal suffix:

(8)   *no   -o   gídíyé màràl báa   aandirà*
        1PL IRR trade   salt   TEMP tomorrow
        'I will buy salt tomorrow.'

(9)   *no   -o   gídíyé -ínytyò   aandirà*
        1SG IRR trade   3PL.IRR tomorrow
        'I will buy it tomorrow.'

As 8 and 9 illustrate, the marker of irrealis may appear as an enclitic to the subject pronoun. The marker of irrealis may also appear as a proclitic of a personal pronoun, in which case *áa* is shortened to *á* or *a*, depending on the tone of the pronoun to which it is attached. The proclitic form of the irrealis morpheme is used when the object is a personal pronoun:

(10)   *noon a   -tyò áné ku   geem*
       1SG IRR 3PL say PREP people
       'I will say (it) to the people.' (Ebobissé 1979:61)

The fact that *áa* marks more than just future tense, as claimed by Ebobissé, is evidenced by its appearance in optative complements of verbs of saying:

(11)   *ŋà àn -tí ŋas   tya -a   káté*
       3M say 3F COMP 3F IRR go
       'He told her to go' or 'he told her (that) she should go.'

It also appears in optative complements of verbs of asking:

(12)   *no indíd nos   wàadá gà   á   -no gàaye*
       1SG ask   COMP who   INTERR IRR 1SG help
       'I asked who could help me.'

It should be noted that the distinction between realis and irrealis simply refers to the absence or presence of the marker *áa*. The semantic distinctions encoded by the choice of realis or irrealis mood in the complement clause vary depending on the choice of main verb. This phenomenon will be discussed in the succeeding sections.

3. COMPLEMENTATION IN EAST DANGLA. Palmer 1986 describes three types of complex sentences (Palmer 1986:126):

(a) Those introduced by a lexical subordinator or 'predicator', usually a verb of saying. These are nominal (or verbal; cf. Rosenbaum 1967) in character.
(b) Oblique complements, often including result, temporal and causal clauses, which are not 'dependent on' (presumably, not dependent on the presence of) some lexical item in the main clause. These are adverbial in character.
(c) Relative clauses, which are adjectival in character in that they modify nouns.

The present paper deals only with complements that fall into Palmer's first category; i.e., they are verbal in nature and are occasioned by the presence in the main clause of some lexical item that requires a complement. I will explore how one language, East Dangla, makes further divisions within the first type, as evidenced by the types of functions that have been grammaticalized. In the process I will show that the distinctions among complement types are coded not by a single feature, such as the presence or absence of a lexical subordinator in the main clause, but rather by interactions among several features, namely clausal order, choice of complementizer, lexical verb selection, and mood marking in the complement clause. To demonstrate that it is the interplay among features rather than the presence of a single feature that codes the relationship of one clause to another, I will show that the same feature may participate in the coding of two different functions in two different complement types.

3.1. TWO COMPLEMENTIZERS. The notion of complementizer has been taken variously to mean a component of a sentence that identifies the following clause as a complement clause (cf. Noonan 1985), a component that separates a main clause from a complement clause (cf. Givón 1991), or a component whose function (among others) is to signal the modality of the complement clause (cf. Ransom 1986). Frajzyngier 1993a argues that the primary function of a complementizer is to mark modality and that the complementizer may mark either the main or the embedded clause. In this section I will show that East Dangla has two complementizers, each of which has a modal function that affects the main or the embedded clause. Moreover, I will show that the modal functions of the complementizers are carried not by the complementizers alone but rather by the complementizers in combination with other morphological, lexical or syntactic features.

East Dangla has a complementizer whose form is that of a subject pronoun followed by -s, resulting in the paradigm shown in Table 1.

PERSON	SINGULAR	PLURAL
1	*nos*	*nís* (INCL), *nìs* (EXCL)
2	*kís* (M), *kás* (F)	*kús*
3	*ŋàs* (M), *tyàs* (F)	*ŋùs*

TABLE 1: De dicto complementizers

Because *ŋàs* or one of its variants always appears when the verb of saying *áné* occurs and the order of clauses is Main-Complement, I will gloss the form as COMP and refer to it as the de dicto complementizer. I use the term de dicto in the sense in which it is used in Frajzyngier 1991 and in Frajzyngier & Jasperson (1991:136): A clause belonging to the domain de dicto is a clause that is represented to the hearer as 'a fragment of speech, or a fragment of a linguistic representation which may contain a description of an event.'

The following examples illustrate the occurrence of the de dicto complementizer with the verb of saying *áné* :

(13) *tyà   àn -dyi tyàs: gidiy -òr -rúu kísèené*
      3F   say 3M   COMP   trade 1SG NEG clothing
      'She said to him: "Don't buy me clothing!"'

(14) *gàm   àn   ŋàs   ŋà(ar) pàrràaŋánnítyé*
      person say COMP   3M   hunter
      'So-and-so_i said that he_i is a hunter'
      or 'So-and-so_i said that he_j is a hunter'
      or 'So-and-so_i said: "He_j is a hunter"'

As suggested by the gloss in 14, *ŋàs* may serve to introduce either direct or indirect speech. As Palmer 1986 observes, pronoun selection is in some languages the only or most important marker of direct vs. indirect speech. This is in fact the case in East Dangla. In a narrative, the context makes it clear whether the deictic frame of reference implied by the selection of pronouns is that of the speaker or of some participant inside the narrative. In the following example, the use of the second person pronominal suffix -*ke* indicates that the deictic frame is that of the mother:

(15) *yaa   -tyo gi   tyas   waa   ga   ber   -ke*
      mother 3PL   but COMP   who   INTERR give 2F
      'But her (lit. 'their') mother said, "Who gave you (this)?"'

By contrast, in the following example, the context makes it clear that the deictic frame is that of the narrator:

(16) *tyas   tya   da   itye   ako   min   ak   gere   -y*
COMP 3F   go   bring   fire   LOC   PREP   house   3M
'She said she was going to get some fire from his house.'

Neither of the two preceding examples employs a verb of saying; both speeches are introduced by the *ŋàs* form. The verbs inside both complements are marked perfective-realis. Thus there is no means other than pronoun selection to distinguish between direct and indirect speech and it may be said that there is, for all practical purposes, no such distinction in East Dangla.

Ex. 15 and 16 also show that the *ŋàs* form can introduce a verba dicendi-type complement in the absence of a verb of saying. In such a case it is not necessary that the pronominal portion of the complementizer be co-referential with the subject of any preceding main clause; thus the complementizer standing alone appears to be fully functional as a main-clause verb of saying and its argument. In the absence of other syntactic features encoding other functions, then, the function of the *ŋàs* form is to encode the succeeding clause as a complement belonging to the domain of hearsay or reported speech. This claim is further supported by the fact that *ŋàs* introduces complements of verbs of asking as well as certain complements of verbs of thinking, knowing and perceiving. The distribution and functions of *ŋàs* will be discussed further in the sections on individual verbs.

East Dangla has a second complementizer, *kàdàr*, which I will refer to as the de re complementizer. Again following Frajzyngier 1991, I use the term de re to denote the domain of reality in contrast with the domain of speech. I have chosen this term for *kàdàr* because *kàdàr* is in complementary distribution with the de dicto complementizer *ŋàs*:

(17) *no   iban   kàdàr   ŋà   rawàt   -tya   àtùm   -níŋ*
1SG know COMP 3M forget 3F   hoe   1PL.INCL
'I know that he forgot our hoe.'

(18) *mín   gòóltàk   às   -tí   -t   mín   amày   -ik,   iban   -tí   -t   dáko*
LOC moment come 3F PERF LOC water   DEM know 3F PERF immediately
kàdàr   bàlìlli   -tyò gàas   kó   rák   di
COMP basket 3PL find guinea.corn one only
'As soon as she had returned from the water, she knew immediately that there was only one grain of guinea corn left in the basket.'

Other functions of the de re complementizer include introducing some complements of verbs of thinking or perceiving. These functions will be discussed in the sections on complements of individual verbs.

3.2. COMPLEMENTS AFTER VERBS OF SAYING. As mentioned above, the verb *áné* always appears with the de dicto complementizer when clausal order is Main-Complement, regardless of the mood of the complementizer. The de dicto complementizer may appear without the verb *áné* or any other verb, in which case it functions as a main-clause verb of saying and its argument. If the complement is indicative, its verb is in the realis form. The presence in the complement clause of the irrealis morpheme *úa* indicates that complement is marked for some deontic modality — e.g. obligation, permission, or prohibition — or is in some other sense not actualized. The following examples illustrate the types of complements that occur with the verb *áné*.

The order Complement-Main is used when the complement, whether realis or irrealis, is placed in focus and is in the form of direct speech. In this case there is no complementizer. Sentences of this type occur rarely in the texts and not at all in the elicited data. Example:

(19) *noon   laagi   -ty   èp   di,   kaa   koor   -kik,   àn   -dyi   -dyi*
1SG   measure 3F thus only CONJ guinea.corn DEM say 3M   3M
'"That is the only reason I am measuring it, the guinea corn," he told him.'

The order Main-Complement with the de dicto complementizer may be used for either direct speech or indirect speech, as defined by the choice of deictic frame. The complement may be realis or irrealis, e.g.:

(20) *gàm   àn   ŋàs   ŋa(ar)   pàrràaŋánníyé*
so-and-so say COMP 3M   hunter
'So-and-so said that he is a hunter.'

(21) *kobin   -tit   tyas   maa   ŋa?*
buffalo DEM COMP why   INTERR
'The buffalo said, "Why?"'

When the de dicto complementizer functions as the main verb of saying, the same generalizations apply to it that apply to the verb *áné*; i.e., the complement may consist of direct or indirect speech and may be in the realis or the irrealis mood. In the folktale narratives, the verb of saying is nearly always omitted unless the referent of the pronominal portion of the complementizer is ambiguous. Examples:

(22)   ... *kar   kàt -dyi -dyi   ŋàs   àwkò noon ŋàs   kó*
       ... SEQ   go   3M   3M   COMP   goat   1SG   find   already
       '... then went to him (the father) and said: "I have already found my goat."'

(23)   *tyas   tya   da   itye   ako   min   ak   gere   -y*
       COMP   3F   go   bring   fire   LOC   PREP   house   3M
       'She said she was going to get some fire from his house.'

To sum up, complements of the verb 'say' are of three kinds:

(a) Clausal order Complement-Main, no complementizer, main-clause verb *áné*, complement in realis or irrealis mood: codes direct speech and places the complement in focus.

(b) Order Main-Complement, de dicto complementizer, main-clause verb *áné*, realis or irrealis complement: codes direct or indirect speech, depending on context and deictic frame.

(c) Order Main-Complement, de dicto complementizer, no main-clause verb, realis or irrealis complement: codes direct or indirect speech; based on its prevalence in narrative, may be said to be the unmarked form of the verb of saying and its complement.

The main verb of asking in East Dangla is *inde* 'make a request, pose a question'. It has been claimed that in Xdi (Chadic, Biu-Mandara branch), complements of the verb 'ask' that are embedded requests are in the domain de re, as coded by the clausal order Complement-Main, while embedded interrogatives are in the domain de dicto, as coded by the clausal order Main-Complement (cf. Frajzyngier & Shay 1993). East Dangla treats the semantic space rather differently, distinguishing between complements describing events that are in some way actualized (realis) and those that are not (irrealis). This distinction is coded by morphological marking in the complement clause. As with complements of the verb 'say', a direct-speech complement of 'ask' may be placed before the main verb, yielding the clausal order Complement-Main. This order, as always, takes no complementizer:

(24)   *sàdíig,   kí   gídáy kóorò   iŋ   minàw?   indad -dyi -ga*
       friend   2SG   trade   guinea.corn   CONJ   how much   ask   3M   3M
       '"Friend, how much are you selling guinea corn for?" he asked him.'

(25)   *ki   gas -gu   buw -ak   min   mon   di?   indad -giti -ga*
       2M   find   3PL   milk   DEM   LOC   where   only   ask   3F   3M
       '"Where did you find this milk?" she asked him.'

Embedded interrogatives, whether yes/no questions or WH-questions, follow the main clause and are introduced by the de dicto complementizer. When the event of the complement is factual or is in some way actualized, the verb of the complement clause is realis. An embedded yes/no question is also marked by the interrogative marker *gà*, which appears at the end of the complement clause, e.g.:[2]

(26)   *ŋà   indid -in -tè   ŋàs   no   iban -gity   kàaw   ti   kedé   -et   gà*
       3M   ask   1SG   PERF   COMP   1SG   know   3F.IMPF   word   REL   such-and-such   DEM   INTERR
       'He asked me if I knew the language of such-and-such a place.'

(27)   *ŋù   indad -nín -tè   ŋùs   gà   sín   -níŋ   gà*
       3PL   ask   1PL   PERF   COMP   3M   brother   1PL   INTERR
       'They asked us if he was our brother.'

In an embedded WH-question, the interrogative marker follows the question word, which occupies the same slot that the argument to which it refers would occupy:

(28)   *ŋà   indid -in -tè   ŋàs   no   te   maa   gà*
       3M   ask   1SG   PERF   COMP   1SG   eat   what   INTERR
       'He asked me what I ate.'

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[2]   The morpheme *kedé* (in 26) refers to an unspecified place.

(29) tyà indid̪ -in -tè tyàs no wèd̪y mə̀ŋ gà
      3F ask 1SG PERF COMP 1SG sleep where INTERR
      'She asked me where I slept.'

If the embedded question is optative, the clausal order is Main-Complement but the complement clause is marked irrealis. The interrogative marker again follows the WH-word:

(30) no indid̪ nos wàad̪à gà á -no gàaye
      1SG ask COMP who INTERR IRR 1SG help
      'I asked who could help me.'

An embedded request, which by its nature cannot be considered actualized, is coded in Xdi by the clausal order Complement-Main, placing it in the domain de re. In East Dangla, the fact that the complement is an embedded request rather than an embedded question is coded by marking the complement clause irrealis, just like an optative complement. In the embedded request, however, there is no interrogative morpheme and the marker of irrealis appears as an enclitic to the subject of the complement clause:[3]

(31) nù indad̪ -nín -té ŋùs ní -i kátè
      3PL ask 1PL PERF COMP 1PL IRR go
      'They asked us to go.'
(32) no indad̪ -gu nos ŋu -n gàaye
      1SG ask 3PL COMP 3PL.IRR 1SG help
      'I asked them to help me.'

To summarize, the verb 'ask' in East Dangla takes three types of complements coding three distinctions, as follows: clausal order Complement-Main, with no complementizer, codes direct speech; clausal order Main-Complement, with the de dicto complementizer and realis mood in the complement clause, codes an embedded interrogative; clausal order Main-Complement, with the de dicto complementizer and irrealis mood in the complement clause, codes an embedded request or an optative complement. The difference between the last two types of complements is coded by the presence in the latter of the interrogative marker gà. Thus, while Xdi codes a distinction between de dicto and de re complements of 'ask', East Dangla treats all complements of 'ask' as de dicto complements (by means of the presence of the ŋàs form) but distinguishes between those that are realis and those that are not. The distinction is accomplished by means of morphological marking in the complement clause.

3.3. COMPLEMENTS AFTER VERBS OF PERCEPTION. The main verb dòre 'hear' takes two types of complements. One type, which follows the main clause, is introduced by the de dicto complementizer, the pronominal portion of which is marked third-person plural. This third person is unspecified, and in the case of an isolated sentence like 33 it certainly cannot be anaphoric. The use of the de dicto complementizer indicates that the source of the piece of knowledge expressed by the complement is a fragment of speech uttered by some unspecified third person(s). Example:

(33) gàm dòr ŋùs tyà rawàt -tya àtúm -ti
      so-and-so hear COMP 3F forget 3F hoe 3F
      'So-and-so heard that she_i had forgotten her_j hoe.'

The second type differs from the first in two ways: it lacks a complementizer, and the subject of the complement undergoes subject-to-object raising, the subject of the complement being marked as an enclitic object on the main-clause verb. The construction differs from subject-to-object raising in a language like English or French in that the raised argument is coded in both clauses in East Dangla. The verb of the complement is realis:

(34) no dòr -gu àk -dyi
      1SG hear 3M.DO come 3M.S
      'I heard him come' (lit. 'I heard him, he came.')
(35) no dòr gu dàbsuy -gidyi bèrka
      1SG hear 3M.DO slaughter 3M.S cow
      'I heard him slaughter(ing) a cow.'

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[3] The underlying form of ŋu-n (in 32) is ŋu-u-no (3PL.-IRR-1SG).

I hypothesize that the distinction coded by the two types of complements of the verb 'hear' is a distinction between two types of evidence: The use of the de dicto complementizer without subject-to-object raising indicates that the source of evidence is hearsay, while the lack of the de dicto complementizer, combined with subject-to-object raising, indicates that speaker has direct perceptual evidence for the proposition. The hypothesis is supported by Frajzyngier 1991, using evidence from Mupun. In Mupun, the morpheme *nə* occurs as a complementizer after verbs of saying. After verbs of perception such as 'see' and 'hear', the presence of *nə* indicates that evidence for the event is indirect. Frajzyngier proposes that the de dicto complementizer comes to indicate inference or indirect evidence because of the sense that information obtained through speech is not as reliable as that obtained through direct observation. Awad 1993 makes a similar argument for Bolanci. To confirm the hypothesis for East Dangla it will be necessary to obtain negative examples to show, for example, that one cannot use the raising construction to say 'I heard that he came.'

The fact that the same grammatical device does not always code the same function is evinced nicely by the behavior of the complements of the verb *tàle* 'see'. This verb cannot logically take the de dicto complementizer, since this would imply a spoken source for the proposition. Nevertheless, there are different types of complements that appear to encode different sources of evidence and/or different degrees of certainty or commitment on the part of the speaker. Again, it will be necessary to obtain further evidence to confirm this hypothesis and to determine whether the distinction encoded is that between types of evidence or that between degrees of certainty or commitment. Following is a description of the types of complements taken by the verb 'see'.

Like *dòre* 'hear', *tàle* can take complements with raised subjects and no complementizer. It is my hypothesis that such constructions indicate direct perceptual evidence:

(36)   no   tal   -tya   kát   -tí
        1SG   see   3F   go   3F
        'I saw her go.'

If the observation is not based on direct evidence, and/or the speaker is less certain of the proposition, the complement is introduced by the de re complementizer *kàdàr*, which is optionally followed by a relative clause marker:

(37)   gàm   tal   kàdàr   (ti)   tyà   rawàt   -tya   àtúm   -tí
        so-and-so   see   COMP   (REL)   3F   forget   3F   hoe   3F
        'So-and-so_i saw that she_j had forgotten her_j hoe.'

This function of the de re complementizer, to code indirect evidence, appears counter-intuitive, since *kàdàr* with 'know' codes relatively greater certainty in the truth of the proposition. However, the use of *kàdàr* to code indirect evidence makes sense if one considers the other types of complements with which it is in complementary distribution. First, both perception verbs *dòre* 'hear' and *tàle* 'see' may take complements that lack a complementizer and whose subjects are coded as main-clause objects. In both cases, this type of complement appears to code direct perception; i.e., they indicate that the perceiver was present when and where the event occurred and had direct sensory evidence of the event. With both verbs East Dangla has also grammaticalized a way to say that the speaker's evidence was indirect, though still perceptual in nature. In the case of the verb 'hear', indirect evidence is presented as belonging to the domain de dicto. In the case of the verb 'see', indirect evidence cannot logically belong to the domain de dicto, since a fragment of speech cannot be seen. This leaves the direct/indirect distinction to be coded by some other form, namely the de re complementizer. This use of the de re complementizer to mark indirect evidence is especially interesting in light of Frajzyngier's 1991 claim that it is the de dicto complementizer that, when used with verbs other than verbs of saying, serves to mark indirect evidence.

3.4. COMPLEMENTS AFTER VERBS OF COGNITION. East Dangla has several verbs of cognition that may be combined with complementizers, clausal order, coding of mood and adverbials to code a wide range of modal distinctions. It is with such verbs that all of the interacting factors come into play. This is not surprising in view of the fact that verbs of cognition are the most semantically complex of the complement-taking verbs under discussion.

Givón 1982, among others, observes that epistemic modality codes two parameters: the speaker's commitment to the truth of the whole proposition and the attitude of the subject toward the proposition. In the domain of verbs of cognition, East Dangla codes a wide range of distinctions involving at least these two parameters. The following table illustrates what I hypothesize to be the way the semantic space is broken down and coded in East Dangla. I will illustrate and support this hypothesis in the section that follows.

VERB	CLAUSAL ORDER	COMP	MOOD OF EMBEDDED CLAUSE	DOES SPEAKER BELIEVE IN X*?	DOES SUBJECT OF X BELIEVE IN X?	WHAT ELSE IS CODED?
ibine 'know'	M-C	*kàdàr*	realis	yes	yes	direct evidence for X
ibine	M-C	*ŋàs*	realis	yes	yes	indirect evidence for X
ibine+NEG	M-C	Ø	realis	yes	no	subject has forgotten some part of X
ràwte 'forget'	C-M	Ø	realis	yes	no	subject has forgotten all of X
ràwte	M-C	Ø	realis	yes	no	subject forgot to act on some part of X
pàkire 'think, believe'	M-C	*kàdàr*	realis	yes	yes	subject and speaker are the same
pàkire	M-C	*ŋàs*	realis	yes	yes	subject and speaker are not the same
gàrdiye 'think'	M-C	*ŋàs+wàl*	realis	maybe	maybe	
gine (ziy) 'believe, tell oneself' (subjects of main and complement clause are the same)	M-C	*ŋàs*	**	no	yes	
gine (ziy) (subjects of main and complement clause are NOT the same)	M-C	*ŋàs+wàl*	irrealis	maybe	yes	
ø	M-C	Ø+*wàl*	realis	maybe	yes	

TABLE 2: Verbs of cognition

*X = the proposition expressed by the embedded clause
**the only example in the corpus is a verbless equational sentence.

In what follows, I illustrate and provide evidence for the distinctions proposed in Table 2, using elicited data, lines from the texts and examples from Ebobissé 1979.

Use of the de re complementizer *kàdàr* with the verb *ibine* 'know' codes that the subject has direct evidence for the proposition (X) expressed by the complement:

(38)   *no   iban   kàdàr   ka   rawàt   -tya   àtúm   -kè*
           1SG   know   COMP   2F   forget   3F   hoe   2F
           'I know that you forgot your hoe.'

The fact that East Dangla has a verb 'know' that is different from the verb 'hear' makes the language different from many Chadic languages. As a rule, Chadic languages employ a single verb that may mean either 'know' or 'hear', depending on the nature of the complement (Frajzyngier, personal communication). Ebobissé 1979 gives *ibine* as 'know' or 'be acquainted with', while *dòre* may mean 'hear' or 'listen'. Fédry gives *ibine* as 'learn' or 'know'. In Fédry there is no West Dangla cognate of *dòre*. Neither author speculates as to the derivation of *ibine*, nor can I propose a derivation using the data available. If the verb is borrowed, it must be a relatively old borrowing since it undergoes the root vowel change in the cliticized form that other, demonstrably native, East Dangla verbs undergo.

In contrast with the de re complementizer, the de dicto complementizer with *ibine* codes that the subject's evidence for the proposition is indirect. The *ŋàs* form with *ibine* does not necessarily mark the complement as belonging to the domain de dicto, since the basis for the subject's belief may be visual. Evidence for this is provided by an example from one of the narrative texts. It has just been related that the hyena killed the water buffalo. The squirrel, who was not present at the killing, comes on the scene after the hyena has left. He deduces that it was the hyena who killed the buffalo:

(39)   *iban   dyi   te,   ŋas   boori   di   dee   -tya*
           know   3M   PERF   COMP   hyena   only   kill   3F
           'He knew that it could only be Hyena who had killed her.'

Thus, with *ibine*, the main verb expresses the speaker's belief in the truth of the proposition. The choice of complementizer codes the source of the speaker's knowledge.

There are three different strategies for expressing that the subject has forgotten something: *ibine*+NEG, clausal order Main-Complement, no complementizer; *ràwte* 'forget', order Main-Complement, no complementizer; and *ràwte*, order Complement-Main, no complementizer.

It is my hypothesis that the construction employing *ibine*+NEG codes that the subject has forgotten some element of the proposition described by the complement. This construction may only be used when the complement contains a question word, e.g., 'who', 'what', 'where', etc. In other words, the complement must contain some marker indicating which element of the event the subject has forgotten or no longer recognizes:

(40)   ŋà   iban   -nuu   páy   gem   ki   y   -ga   èédá
       3M   know   NEG   NEG   person   REL   bring   3M   here
       'He forgot who brought him here' (i.e., he no longer recognizes that person or he no longer knows that person's name.)

(41)   ŋà   iban   -núu   páy   wer   ki   tal   -dyi   -g   seedin   -ika
       3M   know   NEG   NEG   place   REL   see   3M   3M   animal   DEM
       'He forgot where he saw the animal.'

(42)   ŋà   iban   -nuu   páy   wíkitne   ti   tal   -dyi   -g
       3M   know   NEG   NEG   moment   REL   see   3M   3M
       'He forgot when he saw it.'

When *ràwte* 'forget' is used with Complement-Main order, what is encoded is the fact that the subject has forgotten the entire event described by the embedded clause. There is no complementizer:

(43)   gem   ki   iy   -ga   èéd   -ik   rawàt   -dyi   kó
       person   REL   bring   3M   here   DEM   forget   3M   already
       'He forgot who brought him here' (i.e., he has forgotten having been brought here.)

(44)   wíkitne   ti   tal   -dyi   -g   rawàt   -dyi   kó
       time   REL   see   3M   3M   forget   3M   already
       'He forgot when he saw it' (i.e., he has forgotten having seen it.)

When *ràwte* is used with Main-Complement order, 'forget' has the sense of 'leave behind'. Again, there is no complementizer:

(45)   no   rawàt   -gu   gam   ku   bèri   -ny   -dyi   ku
       1SG   forget   3PL   thing   REL   give   2SG   3M   DEM
       'I forgot (to bring) the things that you gave him.'

Thus clausal order and main-clause verb selection interact to encode the meaning of a polysemous verb (*ràwte*) and the scope of the main-clause verb.

The verb *pàkire* may be variously translated as 'realize', 'believe', or 'reflect', depending on whether the verb is used transitively or intransitively, which complementizer is selected and whether the subject is co-referential with the speaker or not. Used intransitively, the verb means 'reflect'. The only examples in the data have a subject who is not co-referential with the speaker:

(46)   meet   -ik   pàkar   -dyi   -t   kéedy   kar   ŋàs:
       man   DEM   think   3M   PERF   long time   SEQ   COMP
       kíníŋ   kàawè   -ny   -it   gii   man-manì?
       2SG   word   2SG   DEM   but   how-how
       'The man thought a long time and said: "What are you saying?"'

Used transitively and with a third-person subject, *pàkire* may be followed by the de re complementizer, coding the fact that the subject has realized or deduced something that the speaker knows to be true. Example:

(47)   gàm   pàkir   kàdàr   tyà   rawàt   -tya   àtúm   -tí
       so-and-so   think   COMP   3F   forget   3F   hoe   3F
       'So-and-so realized that shei had forgotten heri hoe.'

When the subject is first person and therefore co-referential with the speaker, *kàdàr* does not appear. Instead, the de dicto complementizer is used, coding the speaker/subject's belief in the truth of the proposition. Example:

(48)   *no*   *pàkar*   *nos*   *ŋà*   *wedʸà*
         1SG   think   COMP   3M   sleep
         'I believe that he is sleeping.' (Ebobissé 1979:118)

Thus *kàdàr* with *pàkìre* 'think, believe' codes the subject's belief in the truth of the proposition when the subject and speaker are not-coreferential, while *kàdàr* with *ìbìne* 'know' codes that the speaker has direct evidence for his/her belief. In contrast, *ŋàs* with *pàkìre* codes belief when subject and speaker ARE co-referential, without implying anything about the speaker's source of knowledge, while *ŋàs* with *ìbìne* codes that the speaker has INDIRECT evidence for his/her belief. This variation in the roles of the two complementizers is further evidence that the functions of the complementizers interact with features from other domains, in this case main verb selection and co-referentiality of speaker and subject.

The main verb *gìne* (*ziy*) 'believe' (lit. 'make self') does not occur in the data with a first-person subject, so co-referentiality of speaker and subject is not an issue. Instead, the functions of the various complement types appear to depend on whether the third-person subjects of the main and the complement clause are co-referential, as demonstrated below.

The verb *gìne* (*ziy*) is always followed by the de dicto complementizer. When the subjects of the main and the complement clause are co-referential, what is being encoded is the fact that the subject believes in something the speaker believes to be false:

(49)   *gàm*   *gìn*   *ziy*   *ŋàs*   *ŋaar*   *be*   *pàrràaŋánnítyé*
         so-and-so   make   self   COMP   3M   DEM   hunter
         'So-and-so_i thinks that he_i is a hunter (but I doubt it).'

If the subject of the main clause and the subject of the embedded clause are not co-referential, the de dicto complementizer is followed by *wàl* 'perhaps' and what is encoded is the subject's belief in something that may or may not be true; the speaker does not express a commitment to the truth or falsity of the proposition expressed by the complement:

(50)   *gàm*   *gìn*   *-ga ziy*   *ŋàs*   *wàl*   *ŋaar*   *be*   *pàrràaŋánnítyé*
         so-and-so   made   3M self   COMP   perhaps   3M   DEM   hunter
         'So-and-so_i thought that he_j was a hunter.'

(51)   *ŋàar*   *-ìk*   *gì*   *ŋàs*   *wàl*   *aa*   *6àys*   *-indyì*   *iŋ*   *gòolé*   *às*   *-dyi*   *ùtyì*   *-g*
         3M   DEM   make   COMP   perhaps   IRR   injure   3M   CONJ   knife   come   3M   get up   3M
         ŋàs: *kín*   *be*   *aa*   *6àyse*   *noonò?*
         COMP   2SG   DEM   IRR   injure   1SG
         'The other thought that he wanted to cut him with a knife, and said: "YOU will hurt ME?"'

This function of the de dicto complementizer with *gìne ziy* 'believe' is consistent with its function as the marker of the domain de dicto, since it is speech that constitutes the primary evidence for another person's beliefs.

The adverb *wàl* by itself may serve as the main-clause verb of thinking, much as *ŋàs* may serve as the main-clause verb of saying. When *wàl* stands alone, it codes the same thing as *gìne ziy* 'believe' + *wàl*: it codes the speaker's reporting of the subject's belief in something that may or may not be true:

(52)   *kòrrìŋ*   *-ìk*   *tal*   *-dyi*   *-t*   *èp*   *-ìk,*   *tyeep*   *-dyí*   *-t*   *kàn*   *-dyi,*
         Korlongo   DEM   see   3M   PERF   thus   DEM   draw   3M   PERF   knife   3M
         ŋa   *wàl*   *ŋa*   *biy*   *ka*   *koo*   *-y*   *ti*   *gídáy*   *-gìdyi*   *kaalìne*
         3M   perhaps   3M   mouth   PREP   guinea.corn   3M   REL   trade   3M   expensive
         'The man from Korlongo, seeing this, drew his own knife; he_i thought he_j was saying that his_j guinea corn was too expensive.'

The main-clause verb *gàrdìye* 'think' may be selected when the subjects of the main and the complement clause are co-referential and the speaker is reporting the subject's belief in something that may or may not be true. This verb is followed by the de dicto complementizer, again marking the fact that the source of evidence for the subject's beliefs (as opposed to the speaker's beliefs) is what the subject has to say. The complementizer may be followed by *wàl*:

(53) gàm   gàrdiy   tyàs   wàl   tyà   rawàt   -tya   àtúm -tí
      so-and-so think   COMP   perhaps 3F   forget   3F   hoe   3F
      'So-and-so$_i$ thought that she$_i$ had forgotten her$_i$ hoe.'

The facts about the distribution of *wàl* provide further evidence for the hierarchy of distinctions proposed in Table 2. This adverbial is related to the negative morpheme *wàlá* and appears only in complements of main verbs that express the speaker's lack of commitment to the truth of the proposition:

(54) gàm   gàrdiy   tyàs   wàl   tyà   rawàt   -tya   àtúm -tí
      so-and-so think   COMP   perhaps 3F   forget   3F   hoe   3F
      'So-and-so$_i$ thought that she$_i$ had forgotten her$_i$ hoe (but she hadn't).'

(55) gàm   gìn   -ga   ziy   ɲàs   wal   ɲaar   be   pàrràaɲánnítyé
      so-and-so made 3M   self COMP   perhaps 3M   DEM   hunter
      'So-and-so$_i$ thought that he$_j$ was a hunter (but he may not be).'

4. CONCLUSIONS. It has been shown that the functions of a single grammatical device in East Dangla vary from construction to construction, depending on the co-occurrence of grammatical devices from other grammatical domains. Despite this variation, it is possible to form the following generalizations about the functions of the four devices under investigation:

(a) Morphological coding of mood: The presence of the irrealis marker usually codes that the proposition is non-factual or is otherwise not actualized. In the case of the verb *áné* 'say', it indicates that the complement clause is marked for some deontic modality (obligation, permission, or prohibition).

(b) Choice of complementizer and main verb: Generally, the de dicto complementizer signals a lesser degree of commitment on the part of the speaker to the truth of the proposition, and/or a relatively indirect source of evidence for the proposition, while the de re complementizer signals greater commitment and/or more direct evidence. That this generalization is not always true is demonstrated by the function of *kàdàr* with the verb *tàle* 'see'. Though its primary function is that of the de re complementizer, *kàdàr* after the verb 'see' (in contrast with no complementizer at all) codes that what was seen provided indirect evidence for the proposition. With *dòrè* 'hear', it is *ɲàs* (in contrast with no complementizer at all) that codes indirect evidence. Thus the function of the complementizer depends partly on whether the other complementizer, or no complementizer, is also a possible selection with that verb. The dependence of the complementizer's function on on main verb selection is further evidenced by the fact that *ɲàs* with *pàkìre* 'believe' codes the co-referentiality of speaker and subject.

(c) Clausal order: With most verbs, the order Complement-Main codes direct speech and places the complement in focus. When the main verb is *ràwte* 'forget', however, the order Complement-Main codes the forgetting of some event while the order Main-Complement codes forgetting in the sense of leaving some concrete object behind. The functions of clausal order, then, also depend on features selected from other grammatical domains.

5. IMPLICATIONS. The findings presented in this paper demonstrate that devices from more than one grammatical domain may interact to encode one or more functions in a single domain. In fact, one device (e.g., the de re complementizer) may have two nearly opposite functions depending on the devices with which it co-occurs. The implication of this finding is that a linguistic description based on the assumption that form X codes function Y should be subjected to further scrutiny to determine whether X really does code Y in all instances, and whether Y may not in fact be coded by a combination of X and some other grammatical devices. Such an approach should lead to the discovery of multiple functions for the grammatical devices in question, as well as insights into the diachronic development of their functions. Further, the fact that such factors as clausal order, complementizer selection, main verb selection and mood marking interact in East Dangla suggests that the grammatical devices that combine in a language to code a single function may be quite disparate, and that the search for form-function relationships should not be limited to the expected grammatical domain(s).

The interaction of grammatical devices from different domains also suggests interesting directions for further research into the grammaticalization of such devices. The interrelationships discussed in this paper point to shifts not only in the functions of a single form but in the combinations of forms associated with a single function.

The findings in this paper also demonstrate how different languages split up and grammaticalize semantic domains in different ways. As discussed in the section on complements of the verb 'ask', both East Dangla and Xdi encode distinctions between the domains de dicto and de re. Each language, however, places a somewhat different set of complement types in each domain. Since that which is encoded in language is the only evidence we have of the existence of semantic categories, it can only be concluded that Xdi and East Dangla define the semantic categories de dicto and de re differently, a fact that would have ramifications for any semantic theory positing the existence of universal semantic categories.

Finally, the behavior of complementizers in East Dangla has implications for any proposed definition of the category complementizer, since complementizers in East Dangla can be shown to have variable functions that interact not only with the coding of modality (cf. Frajzyngier 1993a) and the lexical meaning of the main verb (cf. Rosenbaum 1967) but also, in the case of *pàkìre* 'think' and *gìne ziy* 'believe', with the co-referentiality or non-co-referentiality of the subjects of the main and the embedded clauses or of the speaker with the subject of the main clause.

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