Grammaticalization paths of periphrastic 'do'-constructions

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This study demonstrates cross-linguistic parallels in the grammaticalization of 'do'-auxiliaries in periphrastic verb constructions. Such constructions are exemplified by the phenomenon of 'do'-support in English, where they are obligatory in interrogative and negative clauses. Similar phenomena can be attested across a wide range of genetically and typologically diverse languages. The auxiliary in periphrastic 'do'-constructions is derived from a 'schematic action' verb that can either be directly associated with a specific function, or it appears in the clause as a consequence of other grammatical factors. Based on a sample of 200 languages I will argue that periphrastic 'do'-constructions become grammaticalized in a limited range of grammatical context after going through a stage of optional usage, and also that direct expression of a verbal category by a 'do'-auxiliary represents a possible final stage of grammaticalization of the 'schematic action'-verb. The verbal categories expressed by such an element are restricted to a subsection of tense, aspect and mood. If in a given language the use of a 'do'-auxiliary has become obligatory in association with other functions, the auxiliary will not grammaticalize further and continues as a semantically bleached dummy element. Tense, aspect and mood are therefore the only functional domains in which 'do'-auxiliaries can become grammaticalized as meaningful elements.

1.   Introduction: 'do'-periphrasis as a cross-linguistic phenomenon

The aim of this study is to describe cross-linguistic parallels in the grammaticalization of periphrastic 'do'-constructions and 'do'-auxiliaries with a particular focus on their functional properties. They consist of a lexical verb and an auxiliary element that has a lexical equivalent characterized by 'schematic action', such as English *do*. The lexical source of a 'do'-auxiliary is a phonetically similar full verb with the conceptual specification [+generic]. Periphrastic 'do'-constructions are a relatively widespread phenomenon in the world's languages, as has been pointed out in Van der Auwera (1999) and Jäger (2005, 2006).

While the auxiliary in such grammaticalized periphrastic constructions is semantically bleached in some cases, in other cases the original conceptual content of the lexical source verb is retained, as it appears to constrain grammaticalization systematically. Some languages allow a 'do'-auxiliary to be associated with a specific function, usually the marking of tense, aspect and mood, whereas in other languages grammatical features of the clause condition the occurrence of such an auxiliary. The latter is illustrated by the well-known phenomenon of 'do'-support in English, where interrogative and negative clauses obligatorily involve a periphrastic 'do'-auxiliary. English emphatic constructions like *She does like to swim*, however, exemplify the former, since here the 'do'-auxiliary itself is associated with the function of emphasis. Diachronic studies of English show that the morphosyntactic strategy of periphrasis with a 'schematic action'-auxiliary has undergone a development from zero to obligatory occurrence in certain contexts via an optional stage. These contexts are characterized functionally by negation, interrogation and emphasis (cf. Ellegård 1953, Stein 1986, Kroch 1989a, 1989b, Nevalainen 1991, Denison 1993 and Kallel 2002). The literature on such developments in other languages is relatively scarce; a diachronic study of 'do'-periphrasis in German for instance can be found in Langer (2000). It is the purpose of this study to provide an overview of similar developments in other languages with the goal of pinpointing likely cross-linguistic tendencies in the grammaticalization of 'do'-periphrasis from a cross-linguistic perspective. Previously some cross-linguistic evidence for regularities in the grammaticalization of 'do'-auxiliaries has been presented in Heine (1993) and Claudi (1994).

The concept of optional occurrence invoked in the preceding paragraph is crucial for the present argument, which runs as follows: Periphrastic 'do'-constructions may enter a given language as an optional alternative for the expression of a specific function. This form-function relation becomes more rigid and 'do'-periphrasis becomes obligatory for the expression of this function. In a further

stage the 'do'-auxiliary itself may then encode the function that originally left the speaker with the choice of periphrastic vs. non-periphrastic expression.

The parameter [± obligatory] can be exemplified by a contrast between German and English, where 'do'-periphrasis may occur in similar contexts:

(1) a. He swims.
    b. He does not swim. /   *He swims not.
    c. Er   schwimmt.
        3Sg swim.3Sg
    d. Er   schwimmt   nicht/   Er   tut   nicht   schwimmen.
        3Sg swim.3Sg   NEG/   3Sg do.3Sg   NEG   swim.INF

In English the presence of a negative morpheme (clausal negator *not*) makes 'do'-periphrasis obligatory, as shown in (1a, b). This is not the case in German, as can be seen in the possible periphrastic and non-periphrastic variants of a negative declarative in (1d). Although periphrastic expression as in (1d) is considered colloquial, it is common in spoken Standard German and more so in a considerable number of dialectal varieties (see also Schwarz 2004 and Jäger 2006). As will become clear in the course of this paper, triggering of periphrasis by a morpheme encoding negation or other categories is quite common across the languages of the world.

Taking into account the aforementioned historic development of English I argue that optional employment of periphrastic 'do'-constructions in a given language is likely to become obligatory over time in a limited number of grammatical contexts. In some cases, however, this development goes even further and rather that being a grammatically triggered dummy auxiliary, the 'do'-auxiliary itself takes on expressive functions. The following examples illustrate the kind of grammaticalization that I propose is cross-linguistically recurrent for periphrastic 'do'-auxiliaries.

(2) Middle Egyptian (Egyptian):
    a. jr   -y   -j   snẖ   tȝ   -ḏr
        do   -PAST   -1Sg.NOM   nourish.INF   country   -border
        -f.
        -Sg.M.POSS
        'I nourished the whole country.'   (Claudi 1994: 223)

Coptic (Egyptian):
b. a   -f   kaa   -f.
    do   -3Sg.M.S   lie.INF   -3Sg.M.O
    'He placed him.'
c. a   -p   -kake   toom
    do   -DEF   -darkness close.INF
    n   -nef   -bal.
    O   -DEF.POSS   -3Sg.M.POSS
    'The darkness closed his eyes.'   (Claudi & Mendel 1991: 43)

In (2a) the 'do'-element itself is conceptually [+generic], which makes it an ideal candidate for the function as a dummy carrier for tense/aspect marking. In (2b, c) it is the auxiliary itself that encodes a function, in this case PERFECTIVE, so instead of being a mere dummy it is in fact associated with aspectual meaning. With respect to the historical development from Middle Egyptian to Coptic Claudi (1994: 223) specifically points out that the clause-initial auxiliary *a-* in examples (2b, c) is a grammaticalized perfective marker.

In a previous cross-linguistic study of the functions associated with 'do'-periphrasis (Jäger 2006) I found that the grammatical contexts for obligatory 'do'-periphrasis are limited and can be accounted for by a four-way typology (introduced in section 2.1 below). The total range of functions associated with optional 'do'-periphrasis cross-linguistically is considerably broader and contains pragmatic factors such as style, avoidance of complex verb paradigms and establishment of discourse coherence (see Jäger 2005, 2006). However, the same four types attested for obligatory periphrasis likewise describe a subsection of those found with optional periphrasis. This forms the basis for my hypothesis of cross-linguistically recurrent grammaticalization paths. Based on a convenience sample of 200 languages selected from a wide range of genetic affiliations and geographic areas I argue that periphrastic constructions with a dummy 'do'-auxiliary will only become obligatory, i.e. grammaticalize, in association with functions that can be described in terms of the proposed four-way typology. Furthermore I argue that direct expression of a verbal category by a 'do'-auxiliary, i.e. cases where the 'do'-element itself encodes the category, represents full grammaticalization of the 'schematic action'-element and that this is restricted to a subsection of tense, aspect and mood. Once a 'do'-auxiliary has become obligatory in association with functions outside the domain of tense, aspect or mood, it will not grammaticalize further and instead continue as a semantically bleached dummy element. Tense, aspect and mood are therefore the only functional domains in which 'do'-auxiliaries may become fully grammaticalized as meaningful elements. The examples in the following section

are mainly drawn from my previous large-scale survey (see Jäger 2006) and supplemented with some additional data.

2. Types of obligatory 'do'periphrasis

The functional domains that can be associated with periphrastic 'do'-constructions are cross-linguistically recurrent. In some languages, however, these functional domains are always expressed by a periphrastic 'do'-construction, while in others this strategy is optional.

There are furthermore two kinds of obligatory periphrasis, one in which the auxiliary is a dummy element that occurs as a consequence of grammatical properties of the clause and another one, in which the auxiliary carries grammatical meaning. The latter will be discussed in section 2.2.

2.1 Grammatically triggered obligatory 'do'-periphrasis: a four-way typology

The grammatical contexts for obligatory 'do'-periphrasis are limited and can be accounted for by a four-way typology (for a more detailed discussion see Jäger 2006):

Type 1   Lexical or morphological elements in the clause prevent the attachment of regular verb morphology and thus trigger verbal periphrasis. These elements usually belong to a closed class and their functional range is similar to that of regular verb morphology, i.e. verbal categories, and/or adverbial modification.

Type 2   In languages with rigid or dominant word order periphrasis is used to maintain a close approximation of the regular word order in functionally marked clause types, i.e. to keep the relative order of verb and object unchanged. The most common functions that can be associated with periphrasis in this context are focalization, topicalization and interrogativity.

Type 3   Lexical features of the verb require periphrasis with an auxiliary, such as the feature [+borrowed]. Periphrasis with a 'do'-auxiliary marks verb class membership.

Type 4   'Do'-periphrasis obligatorily marks a verb or verb phrase as a subordinate constituent in a larger structure, such as in converbal or symmetric coordination structures.

In the following paragraphs each of these four types are illustrated. In the languages exemplified in (3) through to (9) the strategy of 'do'-periphrasis is obligatory in the context of certain morphological material. The trigger morphemes and their functional characterizations are indicated for each example.

Type 1:

In the following examples 'do'-periphrasis is triggered by morphemes expressing negative polarity (3-4), as well as TAM-morphemes, more specifically past tense (5), completive aspect (6), progressive aspect (7,8), and finally emphatic mood (9).

(3) Dumi (Tibeto-Burman):

    ma-   kam -si   mɨt -t   -ə.
    NEG.PERF-   cover-REFLEXIVE do -NPST   -1Sg
    'I haven't covered myself (with a blanket) yet.'   (Van Driem 1993: 242)
    TRIGGER MORPHEME: *ma-* (FUNCTION: "NEG.PERF")

(4) Lezgian (Caucasian):
    AFFIRMATIVE: NEGATIVE:
    a. awun   t-   awun
        do (lexical V)   NEG-   do
    b. čüxün   čüxün   t-   awun   (periphrastic)
        wash   wash   NEG-   do
                             *t-   čüxün   (inflectional)
                             NEG-   wash   (Haspelmath 2000: 658)
    TRIGGER MORPHEME: *t-* (FUNCTION: "NEG")

(5) Middle Egyptian (Egyptian):
    jr   -y   -j   snḫ   tɜ   -ḏr
    do -PAST -1Sg.NOM   nourish.INF   country   -border
    -f.
    -Sg.M.POSS
    'I nourished the whole country.'   (Claudi 1994: 223)
    TRIGGER MORPHEME: *-y* (FUNCTION: "PAST")

(6) Cashibo (Panoan):
    nonti   -'n ka -na kwan   -ti   'a -i   -n.
    canoe   -by PRT -1 go   -FUT   do -TENSE   -FINAL
    'I am to go by canoe.'   (Wistrand 1968: 42)

(7) Tamil (Dravidian):
     avan   avalai   kulai cey -ya
     3Sg.NOM 3Sg.ACC kill do -INF
     poo -n   -aan.
     go   -PAST   -3Sg.M
     'He was going to kill her.'   (Julie Anthony personal communication)
     TRIGGER MORPHEME: *poo* (FUNCTION: "PROG")

(8) Carrier (Athabaskan):
     a.   nʌlgaih   za   ʔʌt'en.

          3Sg.run   only 3Sg.do
          'He kept on running.'
     b.   xw ʌninʔai   dizk'an   za   ʔʌt'en.

          pole   3Sg.burn only 3Sg.do
          'The pole keeps on burning.'   (Poser 1999: 4-7)
          TRIGGER MORPHEME: *za* (FUNCTION : "PROG")

(9) Imonda (Trans-New Guinea/Northern):
     tõgõ të   lõh -la   fe   -f.
     thus EMP be -EMP   do -PRES
     'That is the way it is.'   (Seiler 1985: 116)
     TRIGGER MORPHEME: të (FUNCTION: "EMP")

As mentioned above in section 1, TAM categories are commonly encoded in a 'do'-auxiliary directly, whereas this form-function relation can be excluded for negative polarity. Supporting evidence will be provided in section 2.2.

In all Type 1 examples 'do'-periphrasis is obligatory, whenever a trigger morpheme is present in the clause. However, most cases of obligatory periphrasis have occasional exceptions, so that we can assume some residual optionality (for a more detailed discussion see Jäger 2006, chapter 3). Also the optionality observed in the German sentence pair in (1b) suggests that the apparent obligatoriness of Type 1 'do'-periphrasis encountered in the sample may have entered the respective languages through an optional phase.

Type 2:

In the examples below obligatory 'do'-periphrasis indicates non-canonical word order functionally characterized by interrogativity (examples 10-11) and topicalization/focalization of the verb (examples 12-13).

(10) Yoruba (Niger-Congo):
      a.   bàwo   ni   o   şe   máa ri   owó   sinkù?
           how   be   1Sg do   FUT see   money   bury.corpse
           'How will you find money for the
           burial ceremony?'   (Yusuf 1992: 128)
      b.   kí   l'ó   jé   k'ó   şe'?
           what TOPIC.be.it   it   permitted do
           'Why did he do it?'
      c.   báwo   l'ó   şe   şe?
           how   TOPIC.be.it   do   do
           'How did he do it?'   (Welmers 1973: 435)

(11) Tarifit (Berber):
      a.   i   -zra   a   -Kidar.
           3Sg   -see   Sg   -horse
           'He saw the horse.'
      b.   wi   -g   i-   zri   -n   -a   -Kidar?
           who   -do   3Sg- see   -PTC   -Sg   -horse
           'Who saw the horse?'
      c.   mux   Ra-   g   -R   a-   th-   frə   -R?
           how   FUT-   do   -1Sg INF- FUT-   get.out   -1Sg
           'How will I get out?' (Abdelhak El-Hankari personal communication)

(12) Skou (Sko/Vanimo):
      a.   báng   moeritó   ke- k-   ang.
           yesterday   yellowtail.scad 3Sg- 3Sg- eat
           'He ate some yellowtail scad yesterday.'
      b.   *moeritó   ke- k-   ang -inga   báng.
           yellowtail.scad 3Sg- 3Sg- eat -the   yesterday
           'Eat yellowtail scad he did yesterday.'
      c.   moeritó   ke- k-   ang -inga   báng   ke- li.
           yellowtail.scad 3Sg- 3Sg- eat -the   yesterday 3Sg- do
           'Eat yellowtail scad he did yesterday.'   (Donohue 2003: 109)

(13) Hausa (Chadic):
      a.   jefaa   dà   bùhun   hatsii   nèe   Abdu
           throw   PRT sack   millet   COPULA   Abdu
           ya   yi.
           3Sg.REL.PERF   do
           'It is throwing off/away the millet sack that Abdu did.'

b. sanar   dà Aishà   làabaarìi nee   na   yi.
   know   PRT Aisha   news   COPULA 1Sg.REL.PERF   do
   'It is conveying the news to Aisha
   that I did.'   (Abdoulaye 1992: 372-373)

A similar form-function relation can be established for optional periphrasis in the languages exemplified in (14) and (15) below. Here 'do'-periphrasis is an optional strategy for the expression of verb topicalization/focalization.

(14) <u>Swedish (Germanic):</u>
    a.   Han läser   boken   nu.
        3Sg read.3sg book   now
        'He reads the book now.'
    b.   Läser   boken   gör   han nu.
        read.3Sg   book   do.3Sg 3Sg now
        'He reads the book now.'
        'As for reading the book,
        Han does it now.'   (Källgren & Prince 1989)

(15) <u>Gude (Chadic):</u>
    a.   agi   bələnə   nə   John tə   bwaya   əndzii.
        CONT   kill   SUBJ   John O   leopard   now
        'John is killing a leopard now.'
    b.   bələnə   ci   John abələ   tə   bwaya   əndzii.
        kill   CONT   John kill   O   leopard   now
        'John is **killing** a leopard now.'
    c.   bələnə   nə   sətə   ci   John ada tə   bwaya.
        kill   SUBJ   thing   CONT   John do O   leopard
        'John is **killing** a leopard now.'   (Hoskison 1975: 228-229)

There are 10 languages in the sample that employ 'do'-periphrasis optionally in clauses with non-canonical word order expressing topicalization or focalization in addition to 10 languages with obligatory periphrasis for this function. This suggests that topicalization and focalization of the verb (or predicate) is a likely domain for grammaticalization, i.e. development of obligatory periphrasis for the expression of this function. Note that here the 'do'-element does not express the function directly, it remains a dummy auxiliary.

Type 3:

Type 3 periphrasis is either triggered by native inherent features of the verb, i.e. verb class membership, or by the feature [+ borrowed]. Consider examples (16) and (17):

(16) Rutul (Caucasian):
     yäd asdibišis   kurmat   vàʔar.
     1Pl old.man.Pl   respect   do
     'We respect old men.'   (Alekseev 1994: 2)

(17) Muisca(Chibchan):
     castigar   ma- n-   quy -nga.
     punish   2Sg- PASSIVE-   do -FUT
     'You will be punished.'   (Adelaar & Muysken 2004: 105)

In example (18) the same form-function relation can be established for optional periphrasis:

(18) Takelma (Penutian):
     weʔkalkʔ   nag -aʔiɛ.
     shine   do -3
     'He shines.'   (Sapir 1922: 188)

In Takelma it is likewise possible to construct the sentence non-periphrastically without a noticeable change of meaning, in which case the lexical verb carries inflections.

Type 3 periphrasis thus also includes optional as well as obligatory examples.

Type 4:

Type 4 periphrasis can be characterized as a subordination strategy for single lexical verbs or coordinated sequences of verbs, as shown in (19) and (20), where a periphrastic 'do'-construction is the regular (obligatory) structure.

(19) Tshangla (Tibeto-Burman):
     a. jang ma-   ke   -la -n chho -la   -gai
         1Sg NEG-   be.born -PTC-do stay -PTC   -ABL
         goma   ama   mongshi thong   -ma.
         before   mother   dream   see   -PAST
         'Before I was born, my mother had a dream.'

b.   nyi a-   hi -la   -n   chho -la   -kap
     PRT NEG-   die -PTC   -do stay -PTC   -while
     chhadar -gi khamung mangpu tshok   -pa
     Chhadar -A   clothe   many   sew   -PAST
     chho -wa.
     stay -PAST
     'Before she died, Chhadar had sewn a lot of clothes.'(Andvik 2004: 3)

(20) <u>Korku (Munda):</u>
    a.   ra:mra:m men -do -ne   bijj   -en.
        ramram   say -do -ADV   get.up   -PERF
        'Got up saying "ramram".'
    b.   inkinj   ja.m -do -ne   singrup   -ten
        these.two weep -do -ADV   evening   -ABLATIVE
        uran   ol -en.
        house   go -PERF
        'These two went home while weeping in the evening.'
    c.   inkinj   higra-   higra-   do -ne   dusradin
        these.two fear-   fear-   do -ADV   next.day
        di -kin -a   meran   ol -en.
        3Pl -two -POSS   near   go -PERF
        'These two went near them afraid the next day.'   (Nagaraja 1999: 79)

In (21) below the same form-function relation obtains for optional periphrasis. Here a 'do'-auxiliary occurs optionally in a subordinate (converbal) clause:

(21) <u>Chukchi (Chukotko-Kamchatkan):</u>
    ewyrtaŋ -yŋ   ʔytwytku   -te
    if   good -COMPLEMENTIZER hunt.in.boat   -CONVERB
    n-   ʔ-   it   -tyk,
    2-   CONDITIONAL-   do -2Pl
    n-   ʔy-   mkytji   -tyk ryrk   -o -k.
    2-   CONDITIONAL-   kill.much.game   -2Pl walrus   -kill -INF
    'If you hunted, you'd kill a lot of walrus.'   (Nedjalkov 1994: 334)

Periphrastic 'do'-constructions of Type 4 are optional in some languages and obligatory in others.

Likewise in cases of Type 3 and Type 4 periphrasis the 'do'-auxiliary does not carry meaning, so that the periphrastic 'do'-construction as a whole must be regarded as grammaticalized, once it has become obligatory.

2.2 'Do'-auxiliaries as markers of verbal categories

As we have seen in examples (3-9) it is quite common cross-linguistically for certain morphemes to require the presence of a 'do'-auxiliary in the clause. In this type of periphrastic 'do'-construction the trigger morpheme, not the auxiliary, is characterized by a limited range of functions, which is cross-linguistically recurrent. Accordingly in English negative clauses the occurrence of the auxiliary is a consequence of the presence of *not*, a morpheme associated with a specific function, i.e. negative polarity. The 'do'-element itself does not encode negative polarity. This is strikingly different in a number of languages in the sample, where the auxiliary encodes particular grammatical categories without being triggered by other morphemes. The following paragraphs provide some data from languages that allow such a direct association between 'do'-auxiliary and grammatical function.

In example (22) the functional characterization of the 'do'-auxiliary is PAST:

(22) Supyire (Niger-Congo):
fyì   -ŋa   à   pyi à   kaŋkuro jò.
python -DEF   PERF   do PERF   five   swallow
'The python swallowed five.'   (Carlson 1994: 619)

In Supyire the 'do'-auxiliary marks past tense and can combine with a number of aspectual markers. In (23) and (24) the 'do'-auxiliary marks PROGRESSIVE:

(23) Tuyuca (Tucanoan):
a. diiga   apé -wi.
    soccer   play -VISUAL.EVIDENTIAL.3Sg.M.PAST
    'He played soccer.(I saw him play.)'
b. diiga   apé -gɨ   tií -i.
    soccer   play -3Sg.M   do -3Sg.M.PRES
    'He is playing soccer.'   (De Haan 1998: 7)

(24) Ngindo (Bantu):
tu- tenda   ku- hemera.
1Sg- do   INF- buy
'I am buying.'   (Nurse 2003: 91)

In the following two examples the functional characterization of the auxiliary is FUTURE:

(25) <u>Mamvu (Sudanic):</u>
    a.   tùfu m-   ibu.
             tear 1-   do
             'I shall tear down.'
    b.   ɔɓɛ   mu- tàju.
             dance   1Sg- sit
             'I was dancing.'   (Newman & Rice 2004: 352)

The data in (26) and (27) shows that 'do'-auxiliaries may be associated with the function EMPHATIC:

(26) <u>English (Germanic):</u>
    I do like music

(27) <u>Bura (Chadic):</u>
    a.   tsà ànà wáhi.
             3Sg do   yawn
             'He does yawn.'
    b.   tsà ànà tsá cánún.
             3Sg do   beat monkey
             'He does beat a monkey.'   (Badejo 1989: 50-51)

In these languages it is the auxiliary itself that lends an additional shade of meaning to the clause. On the one hand the sentences in examples (22)-(27) contrast with non-periphrastic sentences in the same language that lack the respective shade of meaning and on the other hand with sentences that contain other auxiliaries associated with different functions. Usually these auxiliaries form a closed class. The crucial cross-linguistic observation here is that the functional characterizations of the fully grammaticalized 'do'-auxiliaries largely correspond to those of the Type 1 trigger morphemes discussed in section 2.1. More specifically, categories that are expressed by a 'do'-auxiliary directly in a given language largely correspond to a subset of those that are expressed by the trigger morphemes of Type 1 periphrasis, as exemplified in (5-9). Taking into account the case of Coptic pointed out in section 1 (example 2), this observation leads me to the assumption that in the languages exemplified (22-27) a transfer

of grammatical meaning from a no longer existent trigger morpheme to a 'do'-auxiliary has taken place in the course of their history.

3.   Evaluation and concluding remarks

The data has shown that the range of grammatical contexts and functions identified for obligatory 'do'-periphrasis is narrower that that identified for optional 'do'-periphrasis. This suggests that periphrastic 'do'-constructions become grammaticalized in the sense of "obligatory in a specific context" only in a subsection of the overall range.

Type 1 'do'-periphrasis is obligatory in most cases investigated so far. The circumstance that even for "obligatory" periphrasis languages commonly allow exceptions, however, suggests that also Type 1 periphrasis is subject to ongoing grammaticalization. Type 1 is different from the other types in that the functional characterization of the grammatical trigger morpheme may be transferred to the 'do'-auxiliary. This is probably due to the circumstance that verbal categories are more likely to be expressed by auxiliaries than other grammatical features such as marking of non-canonical word order or complementation.

Of the 43 languages in the sample that employ 'do'-periphrasis optionally 15 corresponded to the four-way typology introduced in 2.1. Type 1 periphrasis could be attested in 34 languages, whereas direct encoding of a verbal category by means of a 'do'-auxiliary occurred in 52 languages.

Table 1 below compares a selection of verbal categories in terms of association with 'do'-periphrasis.

Table 1:   Comparison of functions associated with 'do'-auxiliaries and trigger morphemes for 'do'-periphrasis

function/category	number of languages	
	function associated with trigger morpheme	function encoded by 'do'-auxiliary
COMPLETIVE/PAST	2	3
PROGRESSIVE	2	12
FUTURE	2	8
EMPHATIC	2	9
NEGATIVE POLARITY	16	0

Table 1 shows that the same categories that are directly associated with a 'do'-auxiliary in some languages are associated with 'do'-periphrasis, i.e. a

periphrastic construction involving a 'do'-auxiliary, in other languages. Negative polarity could not be attested as a function that is expressed by a 'do'-auxiliary. Negation morphemes as triggers of obligatory 'do'-periphrasis, however, could be identified in 16 of the languages in the sample. The key to understanding this irregularity probably lies in the conceptual content of the lexical source verb. A lexical verb with the meaning of 'schematic/generic action' or activity' entails assertiveness. Verbal categories such as PROGRESSIVE or EMPHATIC are also inherently assertive, an action necessarily takes place in order to be emphasized. NEGATION is non-assertive by definition, so negative polarity as such appears incompatible with inherently assertive items such as 'do'-auxiliaries on conceptual grounds. With respect to grammaticalization of auxiliaries and their gradual development from conceptually specified lexical verbs to semantically obscured functional items I assume that even in cases of heavy semantic bleaching this incompatibility remains intact. Unlike with TAM categories the conceptual content 'schematic action' of the source verb constrains further grammaticalization of the 'do'-auxiliary.

The cross-linguistic data presented in this paper suggests that periphrastic 'do'-constructions are not only associated with a limited range of functions, but also that depending on the type of periphrasis the 'do'-auxiliary as such is more or less likely to occur in more restricted contexts and take on specific functions.

My conclusion is that if 'do'-periphrasis has become obligatory for the form-function relation described in Types 2, 3 and 4, the auxiliary will not grammaticalize further. Unlike Type 1 the functions of Types 2, 3 and 4 are not expressed by a separate morpheme, which then triggers periphrasis with an auxiliary. Instead clause type specification, inherent verb feature or subordination stipulate the use of periphrastic 'do'-constructions. A scenario in which a 'do'-auxiliary directly encodes such a feature seems unlikely and, to my knowledge, could so far not be attested.

The overall most common cross-linguistic grammaticalization path for 'do'-periphrasis is represented by Type 2. In particular cases of verb topicalization and focalization seem susceptibe to grammaticalization. The sample contains a total of 39 languages that employ 'do'-periphrasis for this function and in ten of these it is optional. Taking into account well-known diachronic facts from English, it seems reasonable to assume that also in these languages the use of periphrastic 'do'-constructions will become obligatory at some stage in the future.

The trigger morphemes of Type 1 periphrasis are functionally more diverse than the functions that can be encoded directly in 'do'-auxiliaries. However, the data has shown that the latter is indeed a subset of the former. This suggests that in

cross-linguistic perspective only for a small range of categories constructions may develop that allow a direct association of 'do'-auxiliary and grammatical function/category. While the trigger morphemes are quite commonly members of a closed class in a Type 1 language, the 'do'-auxiliary in its fully grammaticalized stage usually only encodes one function, i.e. it is much more specific.

The data examined in this study suggests that there are cross-linguistic constraints in the grammaticalization of periphrastic 'do'-constructions. In taking a typological perspective this paper has attempted to point out the limits of possible development of the phenomenon in a given language. However, in order to understand the phases and steps involved in the development from optional to obligatory use of periphrastic 'do'-constructions as well as the grammaticalization of 'do'-auxiliaries as markers of verbal categories from Type 1 periphrasis future research is necessary on the detailed diachronic study of 'do'-periphrasis in a larger number of single languages.

Abbreviations

ACC, accusative; ADV, adverbial; CONT, continuous; DAT, dative; DEF, definite; EMP, emphatic; FUT, future; INF, infinitive; NEG, negative polarity; M, masculine; NOM, nominative; NPST, nonpast; O, object; PERF, perfect; Pl, plural; POSS, possessive; PRES, present; PRT, particle; PTC, participle; REL, relative; S, subject; Sg, singular

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