

Non-finite *do*-support and the structure/function association

Introduction: The insertion of a semantically vacuous verb in the absence of a main verb or an auxiliary (*do*-support) is generally explained as the need to make inflectional features visible for feature checking ([Houser et al., 2006, Platzack, 2008]). In lexicalist approaches the support-verb has been analyzed as a kind of auxiliary subcategorized for a topicalized VP ([Lødrup, 1990, Webelhuth, 2007]). Previous analyses primarily have concentrated on finite *do*-support (FDS) but non-finite *do*-support (NFDS) with eventive and non-eventive verbs (1) is also observed in many languages, e.g. Danish. Concentrating on non-finite *do*-support with VP pronominalization in Danish, I show that non-finite *do*-support is not just an optional spell-out of non-finite little *v* ([Platzack, 2008]), but that NFDS is obligatory in some cases and that apparent optionality is heavily influenced by syntactic (and contextual) factors. NFDS is used to establish a canonical structure-function association and to license event internal adjuncts. In this way it serves a crucial disambiguating function closely interacting with discourse factors. The analysis extends Bresnans analysis of movement paradoxes ([Bresnan, 2001]) by showing that TOPICS are special in allowing a non-canonical structure-function association, even when not in a configurationally defined TOPIC-position. I further show that the verb *gøre*/'do' in its use as a support verb is not an auxiliary, but a raising verb selecting a special kind of anaphoric NP. The analysis is cast in the framework of Lexical-Functional Grammar ([Bresnan, 2001, Dalrymple, 2001]).

Non-Finite *do*-support: NFDS in Danish is observed with VP Pronominalization and VP Topicalization, but not with VP Ellipsis (with the possible exception of comparative clauses). NFDS occurs with auxiliaries, raising and control verbs (1). With a topicalized VP anaphor, NFDS is obligatory with epistemic modals (2d), strongly favoured with auxiliaries (2c) and optional with other verbs (2b) (including circumstantial modals). With a postverbal VP anaphor, NFDS is obligatory with a *-wh* subject in its (default) first position (2e), and optional with a *+wh* subject (or a sentence adverbial) in the first position (2f). NFDS is obligatory with object-raising verbs (2a) and with event internal adjuncts (2g).

Analysis: NFDS occurs in contexts of a mismatch between structure and function: when a verbal function is realized as an NP (Pronominalization) or when a complement (a VP or a VP anaphor) is in a non-canonical position (Topicalization). It is not observed with VP Ellipsis where no mismatch between structure and function is visible. NFDS provides a verbal projection 1) when the structure/function association requires a verbal function (such as an XCOMP) to map to a VP, 2) when a verbal projection is required for disambiguation purposes

and postverbal positions are argument positions requiring a canonical structure/function association. Therefore postverbal anaphors require *do*-support with verbs taking verbal complements as in (2e) and (1d). The first position of a declarative clause (SPEC of CP) is analyzed as a grammaticalized discourse function (DF) position, i.e. a non-argument position. Following the analysis of movement paradoxes in ([Bresnan, 2001]) a constituent in a DF-position does not require a canonical structure/function association. A VP anaphor in SPEC of CP may be functionally identified with an XCOMP function as in (2b) without *do*-support. But *do*-support is still possible establishing a canonical structure/function-association. There are two exceptions to this generalization. Consider first (2d). The modal *ville*/'would' obligatorily selects a VP in its epistemic/hypothetical use while other kinds of complements are also possible in its circumstantial use. In (2d) the topicalized VP anaphor does not force *do*-support as noted above, but the presence of only an NP complement invites the circumstantial reading. *do*-support is used to disambiguate the modal: the projection of a VP forces the relevant auxiliary-like epistemic reading. The second exception is shown in (2f) where a VP anaphor is allowed to occur in postverbal position in the presence of a highly focal element in SPEC of CP. This is analyzed as a case of a dislocated TOPIC due to *altruistic movement* ([Fanselow, 2003]). The VP anaphor in (2f) is a topic though not in a configurational topic position: it is stressed without yielding a contrastive reading and it occurs within the VP and not in the object-shift position to the left of the negation ([Sells, 2001]). The TOPIC has freed the DF position for the inherently focal *wh*-word. As a TOPIC it may still relax the canonical structure/function association and so it does not need *do*-support to project a verbal function. *do*-support, however, is obligatory with object-raising verbs containing a VP-anaphor. I assume that an XCOMP complement with perception verbs like *se*/'see' is a derived argument structure where the XCOMP is added to the argument structure of the transitive perception verb. Here *do* support serves the purpose of making the function of the anaphor explicit given that these verbs otherwise do not allow two NP-complements. In (2g), *do*-support is obligatory to license the adjunct since neither the modal *skal*/'must' nor the VP Pronominal *det*/'it' are able to license an event internal adjunct (an instrument). Topicalized VPs are discussed below.

An LFG account: The lexical entry for the support verb *gøre*/'do' is given in (4). Given that the verb does not assign a semantic role to the subject it is analyzed as a raising verb taking a subject and an object, where the subject is functionally identified with the subject of the complement. The special category of NP-objects selecting a SUBJ are the VP anaphors: relative *hvilket*/'which', anaphoric *det*/'it' and interrogative-relative *hvad*/'what'.

selecting a topicalized VP. As shown above an auxiliary does not license event internal adjuncts and support *do* does not select a VP: a VP can never occur postverbally (3c) and the verb imposes no morpho-syntactic requirements on a VP-complement (3a) and (3b). The topicalized VP is a (default) bare infinitive or its VFORM features are identical to those of the support verb (cf. (4)). *at*/'to'-infinitives are excluded since only VPs and not IPs topicalize. VP-topicalization with *do*-support is analyzed on a par with *movement paradoxes*: though not categorically appropriate, the topicalized VP is functionally identified with the required OBJ of the support verb, just like topicalized VP-anaphors are able to map to XCOMPS. This analysis explains the extraordinary form and word order of VPs with *do*-support. The c-structure rule for the VP-expansion is given in (6). Note that the NP maps to an OBJ unless it is a TOPIC having freed the DF-position for another element such as a *wh*-word. In this case it may also map to an XCOMP just like configurational topics.

Perspectives The presented analysis readily extends to FDS. FDS also provides a verbal projection, but this time the head of a CP (embedded or non-embedded). Therefore FDS is also observed with VP Ellipsis. In a full version of the paper *do*-support in comparative clauses will also be accounted for and non-syntactic factors influencing the use of non-finite *do*-support will be discussed.

- (1) a. *vi mangler penge og det har vi*
we lack money and that have we
altid gjort
always done
- b. *Peter siger undskyld, men det ville jeg*
Peter apologizes, but that would I
ikke gøre
not do
- c. *Peter besvimed. Det plejer han ikke*
Peter fainted. That tends.to he not
at gøre
to do
- d. *han nægtede at gøre det*
he refused to do it
- (2) a. *det så jeg ham *(gøre)*
that saw I him do
- b. *det nægter han (at gøre)*
that refuses he to do
- c. *Peter skulle vaske op. Og det har*
Peter should do the dishes. And that has
han ?(gjort)
he done
- d. *Peter kan ikke have sladret. Det ville*
Peter can not have spoken. That would
*han aldrig *(gøre)*
he never do
- f. *hvem skal ikke (gøre) det?*
who must not do that
- g. *det skal du ikke *(gøre) med vand*
that must you not (do) with water
og sæbe
and soap
- (3) a. *sveder/svede gør jeg ikke*
sweat.PRES/sweat.INF do I not
- b. *for digte plejer han ikke at gøre*
because tell.stories tends he not to do
- c. **han plejer ikke at gøre digte*
he tends not to do tell.stories
- (4) Lexical entry for *gøre*/'do':
gøre/'do' V (↑ PRED)='DO((↑SUBJ)(↑OBJ))'
(↑ SUBJ)=(↑OBJ SUBJ)
{CAT((↑ OBJ),VP) { (↑ OBJ VFORM)=(↓VFORM) |
(↑ OBJ VFORM)=BAREINF } }
- (5) Lexical entry for *det*/'it':
det/'it' N (↑ PRED)='ANA((↑SUBJ))'
(↑ ANA)= +
- (6) C-structure rule for VP-expansion:
VP → V NP VP
↑=↓ { (↑OBJ)=↓ | (↑XCOMP)=↓
(↑XCOMP)=↓
(↑TOPIC)=↓
(↓ANA)=_c +
(↑DF WH)=_c + }
- (7) C-structure rule for CP-expansion:
CP → {VP|NP} C'
(↑DF)=↓
(↑DF)=(↑{XCOMP|COMP}*{XCOMP|OBJ}) ↑=↓

References

- [Bresnan, 2001] Bresnan, J. (2001). *Lexical-Functional Syntax*. Blackwell textbooks in linguistics. Blackwell.
- [Dalrymple, 2001] Dalrymple, M. (2001). *Lexical-Functional Grammar*, volume 34 of *Syntax and semantics*. Academic press.
- [Fanselow, 2003] Fanselow, G. (2003). Free Constituent Order: A Minimalist Interface Account. *Folia Linguistica*, 37(1-2):191–231.
- [Houser et al., 2006] Houser, M. J., Mikkelsen, L., Strom-Weber, A., and Toosarvandani, M. (2006). *Gøre-Support in Danish*.
- [Lødrup, 1990] Lødrup, H. (1990). Vp-Topicalization and the Verb *gjøre* in Norwegian. *Working Papers in Scandinavian Syntax*, 45:3–12.
- [Platzack, 2008] Platzack, C. (2008). Cross Linguistic Variation in the Realm of Support Verbs.
- [Sells, 2001] Sells, P. (2001). *Structure, Alignment and Optimality in Swedish*. CSLI.
- [Webelhuth, 2007] Webelhuth, G. (2007). Complex Topic-Comment Structures in HPSG. In Müller, S.,