A defective auxiliary in Danish*

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Abstract

In English, auxiliaries form a cohesive category. Unlike main verbs, they raise to T. In Danish, it is not as obvious that auxiliaries form such a unified category. In root clauses, all verbal elements can raise to T (and then onto C), while in embedded clauses they always stay in situ. This makes telling where a given element sits in the extended verbal projection a challenging task. We examine a verbal element in Danish gøre that shows up when the verb phrase has been topicalized, elided, or pronominalized. Even though, from surface appearance, gøre might appear to be of category T or v, it is located, we argue, right in the middle. It is an auxiliary. But, unlike other auxiliaries, gøre is defective because it only subcategorizes for vPs that are pronominal.

Keywords: do periphrasis, auxiliaries, clause structure, verb phrase anaphora, Danish

1 Introduction

In many languages, traditional grammatical descriptions recognize a class of auxiliaries that are distinct from main verbs. They are distinguished both by language-independent characteristics and language-specific ones. By definition, auxiliaries can cooccur with a main verb and they do not add to the thematic structure of the clause (Schachter 1985:41–44, Payne 1997:84f.). In English specifically, auxiliaries raise to T, to the left of negation and left-edge adverbs, and they govern special inflectional forms (participial, infinitival, etc.) on the verbal form immediately following them (Jespersen 1931:11). In early generative work, originating from Ross 1969 and continuing with Pollock 1989 and others, this distinction was taken to be unnecessary; auxiliaries were simply verbs that took another verb phrase as complement. The past fifteen years, however, have witnessed a resurgence of the more traditional view where auxiliaries comprise a conceptual category distinct from main verbs.

To begin with, the generative conception of clause structure has expanded dramatically to include a variety of functional heads. The v head, in particular, introduces the external argument so that the ‘main verb’ is actually a composite of a functional v head and a lexical V head (Hale and Keyser 1993, Kratzer 1996). This more articulated clausal structure raises doubts for the analysis of auxiliaries as verbs that take a verb-phrase complement. Do auxiliaries really, like main verbs,

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have both a lexical and functional component—that is, do auxiliaries each have their own v? Or, more simply, are auxiliaries functional projections located above the verb? The current consensus is that the latter is correct. In Adger’s (2003:155–203) implementation of this view, the English auxiliaries fall into four categories: modals (Mod), perfect have (Perf), progressive be (Prog), and passive be (Pass). All four functional heads sit above v and below T. Under this conception, then, while auxiliaries are internally diverse, they are still distinct from main verbs because they occur above v and V.¹

While in English the division between auxiliaries and main verbs seems relatively clear-cut, making the same distinction in Danish is not as easy. On the basis of language-independent properties, Danish does have a class of auxiliaries that includes a dossier of modals, perfect have ‘have’, perfect være ‘be’, and passive blive ‘become’. These verbal forms cooccur with main verbs and do not affect the assignment of thematic roles.² But the properties of auxiliaries specific to English do not extend to Danish auxiliaries. In root clauses, Danish has verb-second word order: the highest verbal element, whether it is an auxiliary or a main verb, raises to T and then to C, where it occurs after the first major sentence constituent (Vikner 1995, among others). In most embedded clauses—including adverbial clauses, clausal subjects, clausal complements to non-bridge verbs (Intridou and Kroch 1992), relative clauses, and clausal complements of nouns—all verbal elements stay in situ, where they surface below negation and other left-edge elements.³ Consider, then, what the surface position of a miscellaneous verbal head X, located between T and v, would be:

(1) Matrix clause

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(1) Matrix clause Embedded clause

TP
  └── DP
     └── T
         └── XP
             ├── T
                 ├── X
                     ├── vP
                         └── v
                             └── V
             └── XP
                 └── {Neg, Adv}
                     └── (DP)
                         └── v'
                             └── V
```

In matrix clauses, X would be indistinguishable on the surface from T since it would raise and

¹There is a competing implementation of this position, suggested to us by a reviewer. Perhaps auxiliaries are themselves members of the category v? But, in order to account for the syntactic properties of auxiliaries, these vs would have to be distinguished from the v that introduces the external argument. These auxiliary vs would have to bear an additional diacritic to trigger raising to T, while the argument-structure introducing v would lack it. To our mind, this is practically a notational variant of the Adgerian system where auxiliaries are distinguished from v and V in their primary category feature.

²Most of the modals also have a main verb use where they take a DP, PP, or CP argument and add to the thematic structure of the clause. We will not be concerned with these here.

³Not surprisingly, subject-initial root clauses exhibit verb-second word order as well. The main verb occurs after the subject and before negation or sentence adverbs. We analyze subject-initial sentences as TPs, following Travis (1984:137) and Zwart (1997a:191–244). Without a CP projection, the subject in Spec-TP is the leftmost element of the clause. Other authors, Schwartz and Vikner (1996) for example, argue that subject-initial clauses are CPs, and that the subject sits in Spec-CP. Nothing in our proposal, as far as we can tell, depends on which analysis is correct.
head-adjoin to it, thus occurring to the left of negation and other left-edge elements. By contrast, in embedded contexts, X would be indistinguishable from v, which in Danish is null, or from V.

We are concerned here with one verbal element in Danish, _gøre_, which traditional grammars classify as an auxiliary (Hansen (1967:69), Diderichsen (1966:63), Allan et al. (1995:511f., 143f., 159)). In keeping with this characterization, we propose that _gøre_ is located above v but below T in the extended verbal projection—precisely where X is located in (1)—despite the issues this raises. In root clauses, _gøre_ moves to, and is indistinguishable from, T. In embedded clauses, _gøre_ is especially hard to tell apart from v because it has a restricted syntactic distribution. _Gøre_ only appears when the verb phrase has been topicalized (2), elided (3), or realized as a verbal proform _det_ (4).

(2) Jasper _lovede at vaske bilen og vaske bilen_ gjorde han så sandelig.
Jasper promise.PAST to wash.INF car.DEF and wash.INF car.DEF do.PAST he so truly
‘Jasper promised to wash the car, and wash the car, he did indeed.’

(3) Mona og Jasper vaskede bilen, eller rettere Mona _gjorde_.
Mona and Jasper wash.PAST car.DEF or rather Mona do.PAST
‘Mona and Jasper washed the car, or rather Mona did.’

(4) Mona vaskede ikke bilen men det _gjorde_ Jasper.
Mona wash.PAST not car.DEF but _det_ do.PAST Jasper
‘Mona didn’t wash the car, but Jasper did.’

Since, in each of the constructions in (2)–(4), the lexical verb, V, does not show up in its canonical position (it is either fronted, deleted, or replaced by a proform), _gøre_ could very plausibly originate very low in the clause—potentially as v. We argue, nonetheless, that the only way we can understand the full range of _gøre_’s properties is as an auxiliary that sits above v but below T.

Our argument proceeds in the following way. To begin with, we show that _gøre_ is not simply the realization of T, a position we took in an earlier version of this paper, since it would occur to the left of negation and left-edge elements in embedded clauses. Then, we distinguish the usage of _gøre_ with verb phrase ellipsis, topicalization, and pronominalization from the homophonous main verb usage. Nor can _gøre_ plausibly realize v, an approach championed by Platzack (2008). On the one hand, _gøre_ has none of the characteristics that overt vs have in other languages. On the other hand, _gøre_ has a number of properties characteristic of auxiliaries. The proper analysis, then, is one where _gøre_ is an auxiliary and occurs in the extended verbal projection between T and v. As an auxiliary, however, it is defective—it has the restricted range of distribution illustrated in (2)–(4). We propose that, as the lowest auxiliary of the clause, _gøre_ takes vP as its complement, though it subcategorizes for only certain types of vPs, those that are pronominal.

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4The formal literature on this use of _gøre_ in Danish is much less extensive than its English counterpart. To our knowledge, there is just an earlier version of this paper and a manuscript by Christer Platzack responding to it (Platzack 2008). Vikner (2001:456–457) mentions _gøre_ in passing but does not develop an analysis. Other Germanic languages possess cognate constructions: e.g. Swedish (Källgren and Prince 1989), Norwegian (Lødrup 1990, 1994), dialects of German (Russ 1990, Langer 2000, Schwarz 2004, Jäger 2006:230–235), dialects of Dutch (Cornips 1998).

5The verbal proform has the same form as the third person neuter singular pronoun _det_ ‘it’. Our working assumption is that this is a case of homophony, but it might be possible to maintain that it is the same morpheme and that the auxiliaries licensing the proform actually take a nominal complement in examples like (4). As far as we can tell, this issue does not directly affect our analysis and we leave it open here, and gloss _det_ non-comitally as _det_ throughout.
2 The category of *gøre*

For the reasons we gave in the preceding section, *gøre* could, depending on the syntax context, be treated as any one of a number of verbal projections. Some of these are relatively easy to set aside. We show first that, while the pleonastic *do* that, in English, shows up in negation, verum focus, inversion, and other contexts is often treated as a ‘last-resort’ pronunciation of T (Chomsky 1957:62–69, Halle and Marantz 1993:134–137, Bobaljik 1995:63–78), this is not a possible analysis for Danish *gøre*. Nor, as we argue next, can *gøre* simply be a V. While there is a homophonous verb in Danish with a main verb use, the *gøre* that we are interested in is, based on a variety of criteria, distinct from it. Since the ‘main verb’ actually corresponds, under contemporary conceptions of clause structure, to the V-v complex, these same criteria make an analysis of *gøre* as v unlikely. This leaves the most reasonable analysis of *gøre* as an auxiliary.

2.1 *Gøre* is not a T

In main clauses, *gøre* raises like all other finite verbal elements to T, as schematized in (1). Why does it not just originate in this position? In a previous version of this paper, we took *gøre* to be inserted into T in a last-resort operation that parallels English *do*-support. But embedded clauses show that *gøre* must originate lower in the extended verbal projection. In a relative clause like (5), present-tense *gør* occurs below a left-edge adverb. In (6), *gøre* shows up to the right of negation in the protasis of a conditional. And, in (7), *gøre* surfaces below the left-edge adverb *stadig* ‘still’ inside a sentential subject.

(5) Karsten var da en udmærket kollega, men [vP savne ham] kender jeg ikke
Karsten be.PAST well a fine colleague but miss.INF him know.PRES I not
nogen [CP der ligefrem gør].
anyone who straight.forward do.PRES
‘Sure, Karsten was fine colleague, but I don’t know anyone who actually misses him.’

(6) Der er en forventning om, at vi skal [vP g˚a videre], selv om det
there be.PRES an expectation about that we shall.PRES go.INF further even if it
snarere vil være en stor skuffelse end katastrofalt, [CP hvis vi ikke gør ∆],
rather will be.INF a big disappointment than catastrophic if we not do.PRES
‘We are expected to go further (in the competition). That said, it would be a great disappointment, not a catastrophe, if we don’t.’

(7) Kommunen lovede at [vedligeholde parken] i to år. [CP At de stadig
city.DEF promise.PAST to maintain.INF park.DEF in two years that they still
gør det] er imponerende.
do.PRES DET be.PRES impressive.
‘The city promised to maintain the park for two years. It’s impressive that they are still doing it.’

If *gøre* were inserted directly into T, then it would occur to the left of negation and other left-edge elements, but this order is ungrammatical:

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6The vP *savne ham* ‘miss him’ has been topicalized out of the relative clause, an instance of A-movement that is allowed when certain pragmatic conditions are satisfied (Erteschik-Shir 1973:32–49, Jakobsen 1996).

7Recall that *gøre* only occurs when the verb phrase has been topicalized, elided, or pronominalized. For topicalization, we always bracket the vP that has been fronted, and for ellipsis and pronominalization, the antecedent of the missing verb phrase or verbal proform. Elided constituents are themselves represented with a ∆.
If, however, *gøre* originates below T in the verbal projection and we follow the standard analysis of embedded clauses, where T lowers onto the highest verbal element in the clause, the correct ordering of *gøre* with respect to left-edge elements falls out naturally:

\[
\begin{array}{c}
\text{TP} \\
\text{DP} \\
(T) \\
vP \\
v \\
\{ \text{Neg} \} \text{VP} \\
\{ \text{Adv} \} \text{VP} \\
V \\
\text{T} \\
\end{array}
\]

Why could not *gøre*, if it originated in T, lower onto another verbal projection, thereby placing it to the right of negation and left-edge adverbs? We see three reasons why this could not be the case. First, there would be no reason for *gøre* to lower. T, which is a bound tense morpheme, lowers to provide it with a morphological host (Chomsky 1957:38–42). *Gøre*, however, is morphologically free; it does not need a host. Second, as we will see in §4, *gøre* is only possible when the verb phrase has been topicalized, elided, or replaced by a proform *det*. If *gøre* were T, there would be no verbal head for *gøre* to lower onto. Third, we expect, if *gøre* were T, that it would never occur under any other verbal forms. In fact, it can, as when it takes a past-participial form under perfect *have*:

\[
\begin{array}{c}
\text{Hun dukkede op} \\
\text{ligeså uannmeldt, som han selv ofte havde gjort det.} \\
\text{She emerged as unannounced as he self often have.PAST do.PART DET} \\
\text{‘She emerged as unannounced as he himself had often done.’} \\
\end{array}
\]

Not only do such nonfinite occurrences rule out an analysis of *gøre* as T, but, as we discuss in §3, they provide crucial evidence that it is an auxiliary.

### 2.2 *Gøre* is not a main verb

If *gøre* does not realize T, we might think it is base-merged somewhat lower in the clause, say as a V. Danish does have a main verb *gøre*, which, like the English main verb *do*, is transitive and has a highly schematic meaning:

\[
\begin{array}{c}
\text{Vi gjorde noget ulovligt.} \\
\text{we do.PAST something illegal} \\
\text{‘We did something illegal.’} \\
\end{array}
\]

\[
\begin{array}{c}
\text{Han gør som regel det meste af arbejdet.} \\
\text{he do.PRES as rule the most of work.DEF} \\
\text{‘He normally does most of the work.’} \\
\end{array}
\]
Five distributional and interpretive properties distinguish this main verb *gøre* from the use of *gøre* we are interested in here (cf. Jäger 2006:83f.). Only the latter:

(i) can cooccur with lexical verbs in the same clause.

(ii) does not contribute to the conceptual structure of the clause.

(iii) does not introduce its own event.

(iv) does not add, remove, or otherwise modify the assignment of thematic roles.

(v) does not add, remove, or otherwise modify the assignment of grammatical relations.

Starting with property (i), *gøre* can cooccur with lexical verbs, such as *vaske* ‘to wash’ in (2), or even with main verb *gøre*:

(11) De sagde at slangen ikke ville *gøre ondt*, men *[VP gøre ondt] gjorde* den nu alligevel.

‘They said that the tube wouldn’t hurt, but hurt it did.’

Since the verb phrase *gøre ondt* ‘to hurt’ (lit. ‘to do evil’) is fronted, *gøre*, which occurs in second position, must be of a category other than V.

The remaining four criteria in (ii–v) can be evaluated by comparing the two sentences below. (12b) is the topicalization sentence from (2), while (12a) is the corresponding basic sentence with the verb phrase in its base-merged position.

(12) a. Jasper lovede *at vaske bilen og han vaskede så sandelig bilen.*

‘Jasper promised to wash the car, and he (indeed) washed the car.’

b. Jasper lovede *at vaske bilen og [VP vaske bilen] gjorde han så sandelig.*

‘Jasper promised to wash the car, and wash the car, he did (indeed).’

*Gøre* does not add anything to the conceptual structure of the sentence since the two sentences in (12) are truth-conditionally equivalent. It also does not contribute its own event to the meaning of (12b), since just like (12a) the second clause is construed as a single event of car washing. Nor does *gøre* affect the assignment of thematic roles or grammatical relations in the topicalization sentence. In both sentences, *han* ‘he’ is the agent and subject, while *bilen* ‘the car’ is the patient and direct object. In all these respects, *gøre* does not behave like a V.
2.3 **Gøre is not a v**

There is another option. *Gøre* may not be a T or a V, but what about v? Platzack (2008) proposes an analysis along these lines. He treats *gøre* in Danish (as well as its cognates in the other Scandinavian languages) as the realization of v when there is no V adjoined to it. This happens when the VP has been elided, topicalized, or replaced by a proform. Thus, an ellipsis sentence like (13), repeated from (3) above, would have, under Platzack’s analysis, the parse in (14).

(13) Mona og Jasper vaskede bilen, eller rettere Mona gjorde ∆.
Mona and Jasper wash.PAST car.DEF or rather Mona do.PAST
‘Mona and Jasper washed the car, or rather Mona did.’

(14) TP
   DP T' vP
   Mona T
   ⟨DP⟩ v' VP
   v gjorde ∆

This makes the correct distributional predictions in embedded clauses. As the realization of v, *gøre* would be located to the right of left-edge elements. We expect, however, that if *gøre* is a v, it will behave like other members of this category. Looking solely at Danish, this is difficult to show since there are no other overt members of this category. We can look at verbal elements in other languages, though, that have been argued to instantiate the category of v overtly.

The primary representatives of this category are **light verbs**, a term coined originally by Jespersen (1946:117) to describe English verb-noun phrase combinations, such as *take a rest* or *have a nap*. It is characteristic of light verb constructions, according to Butt (2003), that the core semantic content of the clausal predicate is provided by something other than the light verb, though the light verb contributes to the argument or event structure of the predicate. This is exactly the contribution that v makes to the meaning of the predicate (Hale and Keyser 1993, Kratzer 1996), and so light verbs are perfect candidates to realize v overtly, as they indeed have been argued to do in a number of different languages, e.g. French and Italian (Folli and Harley 2007), Hindi-Urdu (Butt and Ramchand 2005), Persian (Megerdoomian 2002, Folli et al. 2005), and Yiddish (Diesing 1998).

Persian is one of the languages that show this most clearly. It has a dossier of light verbs that, together with a nonverbal element (either a noun, an adjective, or a PP), form the vast majority of the language’s predicates. There are only about 115 simplex predicates (Mohammad and Karimi 1992:195). These light verbs form pairs that participate in argument structure alternations. Two of these, *zadan* (literally, ‘to hit’) and *khordan* (literally, ‘to eat’), for instance, create complex predicates that differ just in whether or not they have an external argument. The complex predicate *laqat zadan* ‘to kick’ is transitive, while *laqat khordan* ‘to get kicked’ is unaccusative.

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8Baltin (2007) gives a similar treatment to *do* in a similar construction in British English.

9For Platzack, the sister of vP is √/P. This phrase corresponds to VP in our analysis, and in the ensuing discussion we will refer to it as such. As far as we can tell, this change in terminology has no analytical import.

10Sometimes, as Butt discusses (p. 2), the light verb’s contribution may not be so clear cut. It may add something more subtle, such as a benefactive reading, forcefulness, or suddenness.
(15) a. rostam sohrāb-o laqat zad.
Rostam Sohrab-OBJ kick hit.PAST.3SG
‘Rostam kicked Sohrab.’

b. sohrāb(-o) laqat khord.
Sohrab-OBJ kick eat.PAST.3SG
‘Sohrab got kicked.’

(16) * rostam sohrāb(-o) laqat khord.
Rostam Sohrab-OBJ kick eat.PAST.3SG

(Toosarvandani 2009:64)

Only when zadan is present can the predicate have an external argument, as illustrated by the ungrammaticality of (16). This leads Megerdoomian and Folli et al. to posit that the light verbs, including zadan, are vs, responsible for introducing the external argument.

Assimilating gore to light verbs like zadan or khordan in Persian, as Platzack does, is not obviously improbable. After all, light verbs in Persian are, as Toosarvandani (2009) argues, able to license ellipsis of their complement, containing the nonverbal element and internal argument, as in (17).

(17) sohrāb piranā-ro otu na-zad vali rostam ∆ zad.
Sohrab shirts-OBJ iron neg-hit.PAST.3SG but Rostam hit.PAST.3SG
‘Sohrab didn’t iron the shirts, but Rostam did.’

(Toosarvandani 2009:61)

But, gore does not behave in any important ways like one of these light verbs. Under the conception of v that we, along with Platzack, have been assuming, if gore were a v, it would contribute somehow to the content of the predicate. As we already saw in §2, however, gore adds nothing to the content of the predicate. It does not introduce its own event. And, it plays no role in the assignment of thematic roles or grammatical relations—in contrast to the Persian light verbs zadan ‘hit’ and khordan ‘eat’, which respectively require and forbid an external argument.

These considerations—while they make the analysis of gore as v more unlikely—do not exclude such a possibility altogether. It is, in theory, possible that gore does not show the same properties as other light verbs because, in Danish, all members of the v category are either null or realized as gore, and so paradigmatic alternations of the type we witnessed in Persian are not perceptible on the surface. That is, in order to maintain a v analysis, such as Platzacks, one would have to posit a collection of homophonous v heads, all pronounced as gore. One would occur in transitive and unergative predicates, introducing the external argument; another would occur in unaccusative predicates. Creating this type of radical homophony does not strike us as particularly insightful, but it is not necessary to rely solely on considerations of parsimony to exclude such an analysis. In the next section, we look at nonfinite forms of gore that support our analysis of it as an auxiliary, not a light verb of category v.

3 Gore is an auxiliary

We propose that gore is an auxiliary. It heads a functional projection located above v but below T. The sentence in (13) has, under our analysis, the structure in (18).
This derives the correct word order with respect to left-edge elements. Negation and left-edge adverbs are adjoined to the complement of T, which in (18) is the AuxP headed by gjøre. In embedded clauses, it thus appears to the right of these elements.

When there are no other auxiliaries, the presence of gjøre in the extended verbal projection is obligatory. This follows directly from our analysis. We assume that finite inflection instantiates its own terminal node, T. When the vP has been elided, topicalized, or pronominalized, there is no main verb on which this inflection can appear. And, if gjøre or some other auxiliary is not present in the numeration, then finite inflection will not find a host at all. This is a violation of the Stray Affix Filter (Baker 1988:140), which is really just an explicit restatement of what it means to a bound morpheme. As a bound morpheme, finite inflection only appears on a phonological host.

While the structure in (18) looks similar to Platzack’s in (14), there is an important difference. For us, gjøre is an Aux, while for Platzack, it is a v. This is not just a notational difference. If gjøre is an Aux, it should behave like other members of that category. This is exactly what we show in the rest of this section. Until now we have discussed only finite gjøre, but there are, as we mentioned in §2.1, also nonfinite occurrences. These offer two arguments in support of our analysis of gjøre as an auxiliary. First, nonfinite gjøre does not occur under the perfect auxiliary være or the passive auxiliary blive, a distributional gap that is statable only if gjøre is an auxiliary (§3.2). Second, infinitival gjøre does not license verb phrase ellipsis, something that is expected if gjøre is an auxiliary, but not if it is a v (§3.3).

### 3.1 Nonfinite gjøre

Though we have so far focussed on finite occurrences of gjøre, it also occurs in nonfinite forms. Under the perfect auxiliary have, gjøre shows up in the participial form gjort (19), and after modals in the infinitival form gjøre (20).

(19) a. Og [vP dominere valgkampen] har det allerede gjort.
   And dominate.INF election.campaign.DEF have.PRES it already do.PART
   ‘And it has already dominated the election campaign.’

   b. Hun [dukkedes op] ligeså uannmeldt, som han selv ofte havde gjort det.
   she emerge.PAST up as unannounced as he self often have.PAST do.PART DET
   ‘She emerged as unannounced as he himself had often done.’

   c. Per Toftlund [boede på samme hotel], som Teddy havde gjort det.
   Per Toftlund live.PAST on same hotel as Teddy have.PAST do.PART DET
   ‘Per Toftlund stayed at the same hotel that Teddy had stayed at some days earlier.’
Nonfinite occurrences of auxiliary *gøre* satisfy the same five criteria described in §2.2 that finite occurrences do. For the first criterion, the participial form *gjort* cooccurs with the main verb *dominere* ‘dominate’ in (19a), and the infinitival form *gøre* cooccurs with the main verb *undersøge* ‘investigate’ in (20a). Satisfaction of the remaining four criteria can be established by comparing (19c) to the parallel sentence in (21), which does not contain participial *gjort* and does not involve ellipsis.

(21) Per Toftlund boede på samme hotel, som Teddy havde boet på nogle dage tidligere.

‘Per Toftlund stayed at the same hotel that Teddy had stayed at some days earlier.’

Nonfinite *gøre* does not contribute to the conceptual structure of a sentence since (19c) has identical truth conditions to (21). It also does not introduce its own event since, in both sentences, the relative clause describes a single event, that of Teddy staying at the hotel in question. Nor does nonfinite *gøre* affect the thematic or grammatical roles of the clause it appears in: in both (19c) and (21), Teddy ‘Teddy’ is the subject and agent and *samme hotel* ‘the same hotel’ is object of the preposition *på* and specifies a location. We can thus be certain that we are not dealing with main verb *gøre* here.

Like finite *gøre*, nonfinite *gøre* cannot appear with a canonically realized verb phrase. Compare nonfinite *gjort* with topicalization of vP, as in (19a), to the ungrammatical (19a′) where the vP occurs in situ. Similarly, compare the nonfinite *gjort* that occurs with verb phrase ellipsis in (19c) to the ungrammatical (19c′) with no ellipsis; and compare the nonfinite *gør* that occurs with the verbal proform *det* in (20b) to the ungrammatical (20b′).

(19a′) * Det har allerede gjort dominere/domineret valgkampen.

Intended: ‘It has already dominated the election campaign.’

(19c′) * Teddy havde gjort bo/boet på det hotel.

Intended: ‘Teddy had lived at that hotel.’
(20b') * En anden må gøre fare rundt og spørge.

\[ \text{a other must.PRES do.INF run.INF around and ask.INF} \]

Intended: ‘Someone else has to run around asking people.’

There is, however, one significant difference between finite and nonfinite gøre. Finite gøre is obligatory—in the sense that leaving finite gøre out from a grammatical sentence results in ungrammaticality—while nonfinite gøre is not. Ellipsis is felicitous in (22) with participial gjort (the attested form) or without it.

(22) I det øjeblik man [dæmper disse planer og drager russerne ind på] en in the moment one dampen.PRES these plans and draw.PRES Russians.DEF in on a anden måde end man hidtil har (gjort) Δ, så er russerne også parate different way than one so.far have.PRES do.PART then be.PRES Russians also ready til at forhandle.
to to negotiate.INF

‘As soon as they dampen these plans and include the Russians in a different way than they have so far, the Russians are ready to negotiate.’

Infinitival gøre is optional in (20c) above, and participial gjort is optional in (19a). In our analysis of gøre as an auxiliary, this follows from basic properties of all auxiliaries. Like perfect have or any other auxiliary, gøre is not obligatorily present in the extended verbal projection. There are numerations that converge without it. When nonfinite gøre is present, its sister, vP, is topocalized, elided, or pronominalized. Since the other auxiliaries license these constructions as well, when nonfinite gøre is not present, they take the vP directly as complement.

### 3.2 Subcategorizing for gøre

The first of the two arguments in favor of our analysis of gøre as an auxiliary involves the perfect auxiliaries have ‘have’ and være ‘be’. Most verbs take have, but a sizable majority take være, including falde ‘fall’, komme sig ‘recover’, and smelte ‘melt’ (see Vikner and Sprouse 1988 and Bjerre and Bjerre 2007 for discussion). To start, we should point out that gøre is not inherently incompatible with main verbs that require være. These types of verb phrases can serve as the antecedent of pronominalized (23) or elided (24) verb phrases introduced by finite gøre.

(23) De eskorterende soldater var rutinemæssigt [faldet i søvn]— det gør de the escorting soldiers be.PAST routinely fall.PART in sleep DET do.PRES they jo.

PTC

‘The escorting soldiers had as per routine fallen asleep—they do that.’

(24) Antarktis [smelter] ikke, eller rettere 96 procent gør ikke Δ.

Antarctica melt.PRES not or rather 96 percent do.PRES not

‘Antarctica isn’t melting, or rather 96% isn’t.’

In (23)–(24), it is finite gøre that licenses pronominalization or ellipsis respectively. But we also find nonfinite gøre with an antecedent that takes være in the perfect:

(23′) Flere af soldaterne [faldt i søvn under vagten], og det må de several of soldiers.DEF fall.PAST in sleep during duty.DEF and DET may.PRES the absolut ikke gøre.

absolutely not do.INF
‘Several of the soldiers fell asleep while on duty, which they are absolutely not allowed to do.’

(24’) Antarktis er begyndt at [smelte], nøjagtigt som forskerne havde prediktet det ville gøre $\Delta$.

‘Antarctica has begun to melt, exactly as researchers had predicted it would.’

Even though gøre is compatible with the types of verbs that take vvere in the perfect, it is not possible for it to occur under perfect vvere, as shown in (23′′) and (24′′). Contrast this with (19) and (22), where gøre occurs quite felicitously under perfect have.

(23′′) Soldaterne er [faldet i søvn] og det er tolken også (*gjort).

‘The soldiers have fallen asleep, as has the interpreter.’

(24′′) De forudsagde at Antarktis ville være [smeltet ved udgangen af i år], men de predicted.PAST that Antarctica would be.INF melt.PART by exit.DEF of in year but hele 96 procent er ikke (*gjort).

whole 96 percent be.PRES not do.PART

‘They predicted that Antarctica would have melted by the end of this year, but as much as 96% hasn’t.’

Analogously, gøre may not occur below the passive auxiliary blive, as shown in (25). Again, this restriction is not due to a more general incompatibility with a passive complement since gøre can occur with passive antecedents, as in (26).


‘The old law was adhered to, but the new one is not being adhered to.’

(26) De håber også, at hele retssystemet kommer til at fungere ordentligt, they hope.PRES also that whole court.system come.PRES to to function.INF properly således at lov en også reelt bliver [fulgt] — det gør den ikke nu.

so that law.DEF also in.reality become.PRES follow.PART DET do.PRES it not now

‘They are also hoping that the entire legal system will start functioning so that the law will actually be adhered to—that isn’t the case now.’

Consider now how these restrictions on nonfinite gøre present themselves under the auxiliary analysis. As an auxiliary, gøre is generally optional. When it occurs, it is selected for by a higher head, which is either T (yielding finite gøre) or another auxiliary (yielding nonfinite gøre). The same is true for regular auxiliaries: they are either the complement of T or of another auxiliary. While T can take any auxiliary as its complement, auxiliaries are typically more selective. Thus, perfect have cannot take a complement headed by the passive blive, though perfect vvere can. Perfect vvere cannot take a modal complement, though perfect have can. We suggest that the restrictions on nonfinite gøre should be accounted for in the same terms: gøre is impossible under perfect vvere because vvere does not subcategorize for gøre. Similarly, nonfinite gøre is impossible under passive blive because blive does not subcategorize for gøre. In fact blive is not able to take an auxiliary complement at all. These restrictions are summarized in the two templates below:
(27) a. modal < perfect have < modal < göre
b. modal < perfect være < passive blive

Göre belongs only on the auxiliary hierarchy in (27a), since it is subcategorized for by modals and perfect have, but not by være or blive. There might be explanations for these subcategorization patterns, but what is important here is that göre behaves like other auxiliaries in that it may be selected for by some, but not all auxiliaries. Göre itself does not allow for an auxiliary complement, but that does not disqualify it from being an auxiliary: the passive auxiliary blive also does not take an auxiliary complement.

The dependence of nonfinite göre on the next highest auxiliary is entirely unexpected under Platzack’s analysis. There is no external syntactic difference between a vP in which V has raised to v and one in which V fails to raise and v is realized as göre. For Platzack, this is an alternation that is governed entirely by the featural properties of V, and v itself is identical in both its realizations. Since, then, the two types of vP are indistinguishable to higher auxiliaries, any auxiliary should be able to select for a vP in which V does not raise to v and v is pronounced as göre. This is a prediction that Platzack himself acknowledges (p. 13): ‘if the support verb is a spelled-out v, we expect it to occur after all auxiliaries.’ In particular, we expect it to occur after perfect være and passive blive, contrary to fact.11

Within the v analysis, to account for the impossibility of göre under perfect være and passive blive, one might say that these auxiliaries do not take the vP as complement, but rather the VP directly. There would be no v in the structures for (23′′), (24′′), and (25) above, and hence no source for göre.12 (Though note Platzack commits himself explicitly (p. 9) to v being present in all clauses.) It is clear, however, the verbs that occur under perfect være and passive blive are not always missing a v since, as shown in (23), (24), and (26), finite göre show up with these verbs, and finite and nonfinite göre have, by hypothesis, the exact same source. To make the right cut between finite and nonfinite göre, one would have to posit that verbs can occur optionally with v. But, while some auxiliaries (modals and perfect have) would take either vP or VP as their complement, perfect være and passive blive would only take VP. This move seems entirely ad hoc to us, as it vitiates any motivation for including v in the extended verbal projection in the first place. If it is completely optional whether v appears or does not appear, what precisely does it do?

From the auxiliary hierarchy in (27), we can see why it is hard to tell the auxiliary and v analyses of göre apart. On the v analysis, göre occurs immediately below the lowest auxiliary; on the auxiliary analysis, göre is the lowest auxiliary. We conclude, nonetheless, that it is possible to tell the difference. The ban on nonfinite göre under perfect være and passive blive mimics gaps in the distribution of other auxiliaries, and this similarity is captured by the auxiliary analysis, which accounts for all such gaps in terms of subcategorization.

3.3 No ellipsis with infinitival göre

The difference between the auxiliary and v analyses come out in another area as well. When göre is in its infinitival form, it does not license verb phrase ellipsis, as shown in (28). Verb phrase pronom-

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11 Platzack claims that his prediction is borne out for Swedish göra and provides examples of nonfinite göra under modals and perfect ha ‘have’. Swedish does not form perfect aspect with the cognate of Danish være, so the question of whether participial göra occurs below være does not arise. But when we look at the passive, which Swedish forms with bli ‘become’, Swedish behaves just like Danish: it does not allow nonfinite göra below passive bli (Maia Andréasson, personal communication, May 15, 2009).

12 Insofar as the class of verbs that occur with perfect være can be assimilated to the class of unaccusatives, their proposed lack of a v would match Chomsky’s (2000) idea that passives and unaccusative clauses involve two different vs than do transitive clauses.
inalization is still possible, though, as we saw in (20b) and (20c), as is verb phrase topicalization (20a). The other nonfinite form of gøre, past participial gjort, is not subject to this restriction, as shown by the grammatical ellipsis example in (29) (see also (19c) and (22) above).

(28) a. Jeg har ingen som helst grund til at tro, at Microsoft vil have.PRES no as any reason to to believe.INF that Microsoft want.PRES [misluge deres magt] eller på nogen måde vil [skade Danmark]. Hvorfor abuse.INF their power or on any way want.PRES harm.INF Denmark why skulle de (*gøre) Δ?

‘I have no reason whatsoever to believe that Microsoft wants to abuse their power or in any way harm Denmark. Why should they?’

b. Da jeg fik det fjernet, tænkte jeg slet ikke på det som et barn. when I get.PAST it remove.PART thought.PAST I at.all not on it as a child Havde jeg gjort det, så havde jeg ikke turdet (*gøre) Δ. have.PAST I do.PART DET then have.PAST I not dare.PART do.INF

‘When I had it removed, I didn’t think of it as a child at all. If I had, I wouldn’t have dared to.’

c. Spillerne kunne være et afgangshold fra teaterskolen, der players could.PRES be.INF a graduating.class from theater.school.DEF that følger et løst skisseret forløb og bytter roller og skifter karakter, follow.PRES a loosely sketched course and swap.PRES roles and change.PRES character når de kan (*gøre) Δ.

when they can.PRES do.INF

‘The actors could be a graduating class from a theater school that follow a loosely sketched plan and swap roles and change characters when(ever) they can.’

(29) Nu fisker jeg ikke efter en partner. Men hvis jeg havde gjort Δ, havde jeg… now fish I not after a partner but if I had done had I

‘I’m not looking looking for a new partner. But if I had been, I would…’

In this respect, infinitival gøre patterns with regular auxiliaries. When they appear in their infinitival forms, perfect have and passive blive, too, are not able to license verb phrase ellipsis, as illustrated in (30a) and (30b) respectively, and ellipsis with infinitival modals is marginal at best (30c).

(30) a. * Han kan måske have lagt nøglerne ude på trappen] eller rettere hans he can.PRES perhaps have.INF put.PART keys out on stair.DEF or rather his mor kan have Δ.

mother can.PRES have.INF

Intended: ‘He might have put the keys out on the stairs, or rather his mother might have.’

b. * Mange fodboldtalenter håber på at blive [udtaget til truppen] ligeså many football.talents hope.PRES on to become.INF select.PART for team.DEF just.as snart de er gamle nok til at blive Δ.

soon they be.PRES old enough to to become.INF

Intended: ‘Many soccer talents hope to be selected for the team as soon they are old enough to be.’
At the moment I am not able to set time aside for this, but I hope to be able to when the project is done.'

The generalization, then, is that infinitival auxiliaries do not license ellipsis of the verb phrase.\textsuperscript{13} A reviewer suggests that there might be a deep explanation for this ban, and that is quite possible. For now, we simply observe that verb phrase ellipsis must be licensed by some head in the extended verbal projection bearing inflectional features (Lobeck 1995:141–150, Merchant 2001:60), and that the class of heads that are able to do this vary across languages. In Danish, it seems as though auxiliaries in their infinitival forms are not able to license verb phrase ellipsis, while auxiliaries in their finite and participial forms are.

Within Platzack’s analysis of \textit{gøre} as v, it is entirely unexpected that the infinitival form of \textit{gøre} should prevent ellipsis. For Platzack, ellipsis versus pronominalization is mediated by the feature content of V. In his system, v bears a valued uninterpretable Infl feature that is checked by the corresponding interpretable feature on T. In Danish, V optionally also bears this uninterpretable feature. When it does not and when V also does not raise to v, then the VP is elided. If it does, and V still does not raise to v, then the VP is replaced by the proform \textit{det}. Since the relationship between \textit{gøre} and ellipsis is completely governed by a feature on V, it is not possible, within Platzack’s system, to rule out ellipsis with just the infinitival form of \textit{gøre}. Either it should be possible with every form, or it should not be possible at all. Even supposing that an analysis of auxiliary \textit{gøre} as v were able to derive the facts in (28), it would miss a generalization. It is not just auxiliary \textit{gøre} that fails to license ellipsis when it appears in the infinitive: all auxiliaries display this restriction. Ideally, however we explain the lack of ellipsis with infinitival \textit{gøre}, we would want the same analysis to extend to all the other auxiliaries. By uniting them all in a single category, our analysis does exactly this.

4 The three environments for auxiliary \textit{gøre}

We have argued that \textit{gøre} is an auxiliary, though it is clearly different from other auxiliaries in two important and related respects. \textit{Gøre} is what we would like to call a defective auxiliary since it has no dedicated semantic content and therefore its distribution is syntactically restricted. In terms of its distribution, \textit{gøre} occurs in three main environments: when the verb phrase have been elided,

\begin{itemize}
\item De producerer flere svin nu end vi nogensinde vil (kunne) \textit{(gøre)} \textit{\Delta}.
\item 'They produce more pigs now than we ever will.'
\end{itemize}

This observation fits with the well-known fact that comparatives allow for deletion of a range of constituents, not just vPs, and hence that comparative deletion cannot be reduced to verb phrase ellipsis. In particular, Kennedy (2002) argues that when the conditions for verb phrase ellipsis are met, the gap in a comparative clause is derived by ellipsis. When they are not met, the gap arises though movement (of the compared constituent) followed by deletion. There is thus an independent mechanism for deleting vPs in comparatives and we suggest that this mechanism, and not ellipsis, is what derives apparent examples of verb phrase ellipsis with infinitival licensors like (i) above. What is important to us here is that \textit{gøre} behaves like other auxiliaries in comparatives: all can occur in their infinitival form with comparative deletion of a vP and none can license verb phrase ellipsis outside comparatives.

\textsuperscript{13}Bjarne Ørsnes notes (personal communication, November 17, 2009) that this restriction is not operative in comparative clauses:

\begin{itemize}
\item De producerer flere svin nu end vi nogensinde vil (kunne) \textit{(gøre)} \textit{\Delta}.
\item 'They produce more pigs now than we ever will.'
\end{itemize}
when it has been topicalization, and when it is realized as the verbal proform \textit{det}. It does not occur when the verb phrase receives its canonical realization. This contrasts with the other auxiliaries of the language, which have semantic content and whose distribution is not restricted by syntactic construction.

We propose to account for \textit{gøre}’s defective status by restricting the types of verb phrases it can subcategorize for. Specifically, it only subcategorizes for pronominal vPs, as stated in (31). All other auxiliaries of the language can subcategorize for any type of vP, including pronominal ones.

\begin{equation}
\text{(31) Subcategorization frame for } \textit{gøre} \\
\text{[AuxP } \textit{gøre } [\text{vP } \text{pro } ]]\end{equation}

The interpretation of the vP pronominal that \textit{gøre} subcategorizes for gets its meaning in one of two ways. Either it is anaphoric, referring to some antecedent in the discourse, or it is bound and saturated by a sentence initial VP. Since fully realized verb phrases are not pronominal, \textit{gøre} will never cooccur with a main verb. Thus, (32) is ungrammatical, regardless of the choice of nonfinite inflection on the lower verb.

\begin{equation}
\text{(32) } \ast \text{ Han gjorde } \text{vaske/vasket } \text{bilen.} \\
\text{he do.PAST wash.INF/wash.PART car.DEF} \\
\text{Intended: ‘He washed the car.’}
\end{equation}

While it might strike some as odd to distinguish between pronominal and nonpronominal members of a category in this way, we know from other domains that syntax can make reference to such a distinction. The Scandinavian languages are famous for object shift, an operation where the object moves to the left of the verb. In Danish, only simple pronominal DPs can undergo object shift; full DPs never do, no matter what their prosodic properties are (Vikner 1989).

Crucially, while \textit{gøre} subcategorizes for a proform, it does not matter whether it is overt or not. Nor do we specify that \textit{gøre} only subcategorizes for a single type of overt proform—\textit{det}, for instance. As we show in the next sections, both overt and null proforms are attested under \textit{gøre}, as are a number of different types of overt proforms.

4.1 Verb phrase ellipsis

We treat the missing vP in verb phrase ellipsis as a null proform that receives its interpretation from the surrounding discourse, as in the work of Dalrymple et al. (1991), Hardt (1993), Lobeck (1995), and Culicover and Jackendoff (2005:266–272); see Chung et al. 1995 for a related, but not identical, analysis of sluicing.\footnote{The more traditional analysis of ellipsis, recently resurrected by Merchant (2001), is that ellipsis is deletion of a fully formed vP under identity with an antecedent vP. Under this conception, we see no way of unifying verb phrase ellipsis with the other environments where \textit{gøre} appears. Should the deletion view of ellipsis turn out to be correct, the subcategorization frame in (31) would have to be stated disjunctively.}\footnote{For reasons that we do not currently understand, the use of verb phrase ellipsis in Danish is somewhat more restricted than in English, especially in main clauses. Overall, pronominalization is 5 to 6 times more frequent than ellipsis in running text. More specifically, in main clauses pronominalization is 8 to 9 times more frequent, and in embedded clauses it is 3 times more frequent. The availability of verb phrase pronominalization and its interaction with verb second (Andréasson 2008, Mikkelsen 2009) might help to explain why this is.}

\begin{equation}
\text{(33) a. } \text{Har du } [\text{set } \text{hendes eksamenspapirer}.] \text{ Jeg har aldri } \Delta. \\
\text{have.PRES you see.PART her exam.papers I have.PRES never} \\
\text{‘Have you seen her exam papers. I never have.’}
\end{equation}
b. Hun [bærer tørklæde] ... fordi hun gerne vil ∆.
she wear.PRES scarf because she willingly will.PRES  
‘She wears a head scarf... because she wants to.’

c. Jeg har ingen som helst grund til at tro, at Microsoft [vil
I have.PRES no as any reason to to believe.INF that Microsoft want.PRES
misbruge deres magt eller på nogen måde vil skade Danmark]. Hvorfor
abuse.INF their power or on any way want.PRES harm Denmark why
skulle de ∆?
should.PAST they
‘I have no reason whatsoever to believe that Microsoft wants to abuse their power or in
any way harm Denmark. Why should they?’

If in ellipsis contexts, the verb phrase is a proform, then gøre should be able to take it as complement,
as indeed it does in (34). The second conjunct of the sentence in (34) has the structure in (35). The null proform that takes the place of the vP finds the vP of the first conjunct as its antecedent,
accounting for the meaning of the second conjunct (that Mona washed the car).

(34) Mona og Jasper vaskede bilen, eller rettere Mona gjorde ∆.
Mona and Jasper wash.PAST car.DEF or rather Mona do.PAST
‘Mona and Jasper washed the car, or rather Mona did.’

(35) TP
   DP
   Mona
   T
   AuxP
   T ⟨ Aux ⟩ vP
   gjorde pro

One possible objection to this analysis is that the subject argument must consequently be merged
in Spec-TP, and therefore is not interpretable. We certainly must abandon the Uniform Theta
Assignment Hypothesis (UTAH; Baker 1988) as a syntactic principle since agent arguments are
no longer always base-generated in Spec-vP. But the core intuition behind the UTAH can be
preserved. The vP proform in ellipsis contexts must be of type ⟨ e, t ⟩—that is, a function from
individuals to truth values. Ignoring intervening tense and aspect, the e-type argument is saturated
by the referent of the subject DP. If the proform is anaphoric to an unaccusative verb phrase
antecedent, then the subject will be a patient. If, on the other hand, the proform is anaphoric to
an unergative or transitive verb phrase, then the subject will be an agent.16

16 One way to reconcile our analysis of gøre with UTAH is to assume that pronominal vPs have a syntactically
articulated vP sister and arguments originate within that vP in accordance with UTAH. (We are grateful to Idan
Landau for suggesting this possibility.) Under this analysis, vP ellipsis would be deletion of the syntactically articulated
vP, following Merchant (2001). The articulated vP would also delete in structures with the overt vP proform det
yielding the vP pronominalization construction we analyze immediately below. Instead of deleting, the articulated
vP may move to Spec-CP yielding vP topicalization, if the proform is null, or vP Left Dislocation, if the proform is
overt. (These vP-fronting constructions are discussed in more detail in section 4.3 below.) As far as we can tell, this
alternative analysis is compatible with the data and observations presented in this paper. The main reason that we
do not adopt it here is that we have no independent evidence that verbal proforms can take vP complements. As
4.2 Verb phrase pronominalization

While in ellipsis contexts a null proform is anaphoric to an antecedent in the surrounding discourse, in pronominalization contexts the verb phrase is replaced by an overt verbal proform det. The proform tends to front to clause-initial position, as in (36). When, however, Spec-CP is occupied by another element, such as a sentence-level adverb, as in (37) or a question operator in (38B), det occurs where canonical vPs do.

(36) Morales spurgte en dreng på 7–8 år, om han havde fået sine børnepenge. Det havde han.

‘Morales asked a boy who was 7 or 8 years old whether he had received his “child money.” He had.’

(37) Hele fredagen på arbejdet overvejer jeg, om jeg skal tage i mindre afsted.

‘All day Friday at work I’m thinking about whether I should go out that evening, just in case she’s going to be there... Of course I shouldn’t.’

We treat det as originating as the sister of an auxiliary. Thus, when Spec-CP is occupied by some other element, such as the null question operator of the polar question in (38), it does not move:

(38) A: Mona vaskede sin bil inden hun tog afsted.
     Mona washed.PAST her car before she took.PAST off.place
     ‘Mona washed her car before she left.’

B: Gjorde Jasper også det?
     do.PAST Jasper also DET
     ‘Did Jasper too?’

a matter of fact, overt proforms can never cooccur with an articulated vP in situ, so some principle or mechanism must be put in place to ensure that the articulated vP deletes or moves and we do not know what the principle or mechanism would be. Moreover, the proform and articulated vP cannot cooccur as the pivot of an it-cleft nor as the counterweight of a pseudocleft, as might have been expected if they formed a constituent.

Verb phrase pronominalization has been noted in descriptive grammars (see, for instance, Hansen 1967:31, Diderichsen 1966:178, Allan et al. 1995:158f.), but it has received little theoretical treatment. In addition to our own work elsewhere, Vikner (1988:11) and Andréasson (2008) cite some examples but do not develop an analysis. Formally similar, though functionally distinct, verb phrase anaphoric constructions can be found throughout Germanic: e.g. verb phrase pronominalization with det in Norwegian (Lødrup 1994) and Swedish (Källgren and Prince 1989), as well as German es (López and Winkler 2000), short do replies in Dutch (van Craenenbroeck 2004:125–260), and do it and do so anaphora in English (Kehler and Ward 1999). While verb phrase pronominalization in Danish bears a surface similarity to English do it/so, it is different in at least one crucial regard: the English anaphors require that their antecedents be agentive, but their Danish counterpart places no such restriction on it antecedent as the examples in (19b), (23), (25), (36), and (58) demonstrate. Like English it, det has individual- and propositional-denoting uses as well.
When there is nothing in Spec-CP, \textit{det} raises so that the sentence in (40) has the structure in (41).\footnote{In work elsewhere, we analyze \textit{det} as represented underlyingly by a fully articulated verb phrase. This is problematic, however, since A-movement of internal arguments is unavailable, something that we would expect under that scenario to be possible.}

(40) Mona vaskede ikke bilen men det gjorde Jasper.
Mona wash\_P\_A\_t\_P\_not car\_D\_E\_F\_but DET do\_P\_A\_t\_P Jasper
‘Mona didn’t wash the car, but Jasper did.’

(41) This analysis of verb phrase pronominalization has the benefit of accounting straightforwardly for another construction in which \textit{gøre} occurs, what we will call VERB PHRASE LEFT DISLOCATION, illustrated in (42) (see Källgren and Prince 1989 for discussion of the parallel construction in Swedish).

(42) Dieter Wulf er stadig partiløs, og han ønsker ikke at oplyse, hvad han
Dieter Wulf be\_P\_A\_t\_P\_still partyless and he wish\_P\_A\_t\_P\_not to state\_I\_N\_F what he
stemte på ved det nylige valg til parlamentet. Men [\_P\_m\_A\_t\_jump\_P\_stemme]—det gjorde
vote\_P\_A\_t\_P\_A\_past on at the recent election to parliament\_D\_E\_F but vote\_I\_N\_F DET do\_P\_A\_t\_P\_A\_past
han.
he
‘Dieter Wulf is still without a party and he doesn’t want to say what party he voted for at the recent parliamentary elections. But vote he did.’
In addition to a verbal proform *det*, which fronts, there is a fully-realized vP in left-peripheral position. This produces verb-third word order. As shown in (43), we analyze left dislocation as vP pronominalization with an overt vP adjoined to the root clause.

\[(43)\]
\[
\begin{array}{c}
\text{vP} \\
\text{stemme}
\end{array}
\quad \text{vP}
\quad \text{C'}
\quad \text{T}
\quad \text{T'}
\quad \text{Aux}
\quad \text{gjorde}
\]
\[\text{C} \quad \text{C} \quad \text{DP} \quad \text{han} \quad \langle T \rangle \quad \text{ AUXP} \]

As a specific instance of verb phrase pronominalization, the presence of *gøre* in left dislocation contexts is licensed by the subcategorization frame in (31) since the sister of *gøre* is again pronominal.

### 4.3 Verb phrase topicalization

Finally, much like verb phrase left dislocation, we analyze verb phrase topicalization in Danish as base-merger of a pronominal vP under an auxiliary and of the initial vP as an adjunct to CP. The topicalized sentence in (44) thus has the parse in (45).

\[(44)\]
\[\text{Jasper lovede at vaske bilen og vaske bilen gjorde han så sandelig.} \]
\[\text{Jasper promise.PAST to wash.INF car.DEF and wash.INF car.DEF do.PAST he so truly} \]
\[\text{‘Jasper promised to wash the car, and wash the car, he did indeed.’} \]

\[(45)\]
\[
\begin{array}{c}
\text{vP} \\
\text{vaske bilen}
\end{array}
\quad \text{vP}
\quad \text{C'}
\quad \text{T}
\quad \text{T'}
\quad \text{Aux}
\quad \text{gjorde}
\]
\[\text{C} \quad \text{C} \quad \text{DP} \quad \text{han} \quad \langle T \rangle \quad \text{ AUXP} \]

This analysis is parallel to the one that Zwart (1997-b) proposes for topicalization in Dutch, where it is a (sometimes null) pronominal element that raises to Spec-CP, while the ‘topicalized’ phrase is adjoined to the root clause.
We might consider a simpler analysis of verb phrase topicalization where nothing moves. The initial vP is simply base-merged in Spec-CP, though it is coindexed with a proform merged under an auxiliary, such as *gøre:*

(46)  
\[
\begin{array}{c}
\text{CP} \\
\text{vP} \\
\text{vaske bilen} \\
\text{C} \\
\text{T} \\
\text{han} \\
\text{Aux} \\
\text{gjorde} \\
\text{pro}
\end{array}
\]

This analysis can be set aside, though, since Danish verb phrase topicalization shows positive traits of movement. It is paralleled in this by verb phrase left dislocation—an important comparison since our analyses of the two constructions are structurally identical.

With regards to island constraints, for instance, the initial vP in both topicalization and left-dislocation constructions cannot be interpreted as embedded inside of a sentential subject (47), an adjunct (48), an embedded interrogative clause (49), or the left or right conjunct of a coordinate structure (50). Throughout, the (a) examples involve topicalization and the (b) examples involve left dislocation. The underscore marks the base position of the proform.

(47)  
**Sentential Subject Constraint**

a. * [vP Lave mad] overrasker [CP at han godt kan ___] mig ikke. 
   make.INF food surprises that he well can me not

b. * [vP Lave mad] det overrasker [CP at han godt kan ___] mig ikke. 
   make.INF food DET surprises that he well can me not

Intended: ‘That he can cook doesn’t surprise me.’

(48)  
**Adverb island**

a. * [vP Lave mad] går de tit ud og spiser [CP selvom han kan ___]. 
   make.INF food go.PRES they often out and eat.PRES even.though he can

b. * [vP Lave mad] det går de tit ud og spiser [CP selvom han kan 
   make.INF food DET go.PRES they often out and eat.PRES even.though he can 
   ___].

Intended: ‘They often go out to eat, even though he can cook.’

(49)  
**Wh-island**

a. * [vP Drukket kaffe] spørger de altid [CP hvornår man sidst har ___]. 
   drink.PART coffee ask.PRES they always when one last have.PRES

---

19 We thank an anonymous reviewer for suggesting this possibility.
b. *[vP Drukket kaffe] det spørger de altid [CP hvornår man sidst har __].
   drink.PRT coffee DET ask.PRES they always when one last have.PRES
   Intended: ‘They always ask when you last had a cup of coffee.’

(50) Coordinate Structure Constraint (extraction of left conjunct)

   a. *[vP Lave mad] kan de __ og vaske op.
      make.INF food can they and wash.INF up
   b. *[vP Lave mad] det kan de __ og vaske op.
      make.INF food DET can they and wash.INF up
      Intended: ‘They can cook and do laundry.’

(51) Coordinate Structure Constraint (extraction of right conjunct)

   a. *[vP Vaske tøj] kan de lave mad og __.
      wash.INF clothes can they make.INF food and
   b. *[vP Vaske tøj] det kan de lave mad og __.
      wash.INF clothes DET can they make.INF food and
      Intended: ‘They can cook and do laundry.’

Under our analysis, these island violations arise because a pronoun originates inside each of these islands and raises to Spec-CP of the matrix clause, crossing an island boundary in the process. In the (a) examples, the proform is null, and in the (b) examples, it is det.

Topicalization and left dislocation again behave the same with respect to the binding conditions. In both constructions, the initial vP acts as if it is interpreted where ordinary vPs are base generated, under an auxiliary:

(52) Condition A

   a. [vP Forsvare sig selv_i over for de store børn] kan Peter_i godt, selvom han
can Peter well even.though he
      defend.inf refl refl over for the big kids
      not be.PRES quite big
   b. [vP Forsvare sig selv_i over for de store børn] det kan Peter_i godt, selvom
      defend.inf refl refl over for the big kids
      he not be.PRES quite big
      ‘Peter_i is able to defend himself_i against the bigger kids, even though he’s not that big.’

(53) Condition B

   a. [vP Forsvare ham_{s1/j} over for de store børn] kan Peter_i godt, selvom han ikke
      he over for the big kids
      be.PRES quite big
   b. [vP Forsvare ham_{s1/j} over for de store børn] det kan Peter_i godt, selvom han
      defend.inf he over for the big kids
      not be.PRES quite big
      ‘Peter_i is able to defend him_{s1/j} against the bigger kids, even though he’s not that big.’

(54) Condition C
As shown in (52), a reflexive pronoun in the sentence-initial vP can be bound by a subject DP for either construction. And, as (53) shows, a nonreflexive pronoun in the same position cannot be coreferential with a subject DP. Finally, an R-expression in the fronted vP, as in (54a), is not free when it is coreferential with the subject DP. Under our analysis the reconstruction effects cannot involve actual reconstruction of the initial vP. Instead, these effects are mediated by the proform.

Two further movement diagnostics—the licensing of parasitic gaps and cross-over effects—turn out to be inconclusive. The grammaticality of (55), without or without an overt proform, suggests that both fronting constructions license parasitic gaps, and hence that both involve movement.

(55) [vP Lave (det) gør hun ikke __, selvom hun godt kan __.
      make.INF food DET do.PRES she not even.though she well can
   ‘She doesn’t cook, even though she knows how.’

However, since the gap is the size of a vP and the initial vP provides an antecedent, the alleged parasitic gap could simply be an instance of verb phrase ellipsis. Support for this claim comes from the fact that the second gap is not dependent on the first, as the grammaticality of (56) makes clear.

(56) Hun laver ikke mad, selvom hun godt kan __.
      she make.PRES not food even.though she well can
   ‘She doesn’t cook even though she knows how.’

Unless the possibility of ellipsis in the second clause can be eliminated, the grammaticality of examples like (55) do not tell us anything about the derivation of verb phrase topicalization and left dislocation in main clauses.

The difficulty with checking for cross-over effects is that strong cross-over requires the element that is being crossed over to c-command the base position of the crossing element. In the case of topicalization, this means that we must construct a configuration in which one vP proform det c-commands the base position of another vP proform (which can be null or overt). The only such configuration that we have been able to identify is coordination of a vP with a verb phrase containing a second vP proform. Topicalization out of that second conjunct is indeed ungrammatical, but that is already ruled out by the Coordinate Structure Constraint (50)–(51). It is thus impossible to tell whether verb phrase topicalization yields strong cross-over effects.

Weak cross-over configurations (where the crossed-over element does not c-command the base position of the crossing element) can be constructed, as in (57) where the relative clause modifying the subject contains a vP proform det that is coindexed with the proform connected to the initial vP. If the latter proform moves from a base-position below negation in the main clause to before the finite auxiliary, it would cross over a coindexed proform, namely det in the relative clause.
Speakers find both versions of (57) repetitive and somewhat strained, but grammatical. The lack of a cross-over effect in (57) could be interpreted as evidence against a movement analysis of verb phrase topicalization. On the other hand, weak cross-over effects are notoriously weak and variable even with nominal proforms (as noted early on by (Wasow 1979:157–175)), suggesting that it is not a very good diagnostic to begin with. The island and connectivity effects documented above all support the movement analysis and this evidence seems to strong enough that (57) can be set aside.

4.4 Extensions

Our proposal predicts that *gøre* should be possible when the verb phrase is replaced by *any* proform, not just the ones we have considered. This is indeed the case, as far as we can tell. In (58) and (59), the verb phrase is replaced by the relative pronouns *hvad* ‘which’ and *hvilket* ‘which’ (which raise to Spec-CP), and the appearance of *gøre* is grammatical:

(58) Ballademagerne i Det Konservative Folkeparti burde skamme sig dybt og troublemakers.DEF in the conservative people.party ought shame REFL deeply and længe, og derefter holde kaje, *hvad* de desværre nok ikke *gør* ⟨*hvad⟩. long.time and thereafter keep mouth which they sadly probably not do.PRES

‘The troublemakers in the Conservative Party should be deeply ashamed for a long time and then keep quiet, which they are sadly unlikely to (do).’

(59) I hvert fald hopper Richard af toget, og Frances går grueligt meget in each case jump.PRES Richard off train.DEF and Frances go.PRES terribly much igennem for at finde ham, *hvilket* hun først *gør* ⟨*hvilket⟩ tre år senere på through for to find.INF him which she first do.PRES three years later on nattøget til Innsbruck. night.train.DEF to Innsbruck

‘In either case, Richard jumps the train and Frances has to endure many trials to find him, which she does only three years later on the night train to Innsbruck.’

In (58), *gøre* is clearly not a main verb since the relative clause modifies a stative predicate, *holde kaje* ‘keep quiet’, and this predicates thematic roles are not modified by the presence of *gøre* (see property (iv) in §2.2).

Our proposal finds spiritually akin ones elsewhere. Working within Lexical Functional Grammar, Lødrup (1990) treats *gjøre* in Norwegian as an auxiliary that just like its Danish counterpart shows up when the verb phrase has been topicalized (60) or pronominalized (61).

(60) *[vP Like jordbær] kjener jeg ingen som gjør. like.INF strawberries know.PRES I nobody who do.PRES

‘Like strawberries, I know nobody who does.’ (Lødrup 1990:6)
(61) a. [Lik
du
jordbær?] Ja, jeg gjør det.
like.pres you

strawberries yes I do.pres det
‘Do you like strawberries? Yes, I do that.’ (Lødrup 1990:4)

Marit swim.pres and det do.pres Jon too
‘Marit swims, and so does Jon.’ (Eide 2005:65)

To capture its distribution, Lødrup imposes a restriction on gjøre that he calls R. It states (p. 10) that the verbal complement of gjøre must enter into an unbounded dependency. Restriction R accounts for the appearance of gjøre in (60) and (61b) where the (pronominalized) verb phrase has indeed been fronted, but in order to account for sentences like (61a) where det stays in situ, Lødrup adds the caveat that the proform is exempt from R. Though he did not consider such sentences, R would not derive the occurrence of gjøre when the verb phrase has been elided, which is possible in Norwegian as illustrated in (62).

(62) Du [trener da
når
du
er
på
treningssenteret], gör du ikke Δ?
you

train.pres

ptcl

when

you

be.pres

on

training.
def

do.pres

you

not
‘But you work out when you go to the gym, don’t you?’

In contrast, our treatment of gjøre as a defective auxiliary—an auxiliary, in other words, that only subcategorizes for pronominal vPs—is successfully able to unify all of these environments, as well as extend to other syntactic environments where the verb phrase is an overt proform.

5 Conclusion

The major analytical challenges presented by Danish auxiliary gjøre are its limited but regular distribution and its position relative to adverbs and other auxiliaries. We have argued that these challenges are met by an analysis that treats gjøre as a defective auxiliary.

As an auxiliary, gjøre must find its place in the extended verbal projection, and given the distribution of nonfinite forms of gjøre, we concluded that it is located at the very bottom of the auxiliary hierarchy. This low position makes it difficult to distinguish our auxiliary analysis from Platzack’s analysis of gjøre as the realization of v. But a wider range of data—specifically, gjøre’s distribution under other auxiliaries—supports our analysis of gjøre as a member of the category Aux. The idiosyncratic fact that auxiliary gjøre cannot follow perfect være or passive blive means that, either väre and blive are not auxiliaries (a highly suspect result), or, as we argue, that gjøre is not the realization of v. In addition, auxiliary gjøre does not license verb phrase ellipsis when it occurs in the infinitive. Again, this is entirely unexplained if gjøre is v; if, instead, it is an Aux, it falls in line with other auxiliaries, which exhibit the same restriction.

A common intuition about English do-support is that it is, as Grimshaw (1997:381) puts it, ‘possible only when it is necessary.’ This idea that do-support is somehow a strategy of ‘last resort’ is usually implemented within a transformational framework, as an operation that applies at the end of a failed derivation to save it. Our analysis rejects a similar characterization of auxiliary gjøre in Danish. But it is worth asking what such a last-resort analysis would look like. To start, auxiliary gjøre would never be present in the narrow syntactic representation of a sentence. It would instead

20www.iform.no/pub/art.php?id=1430; example provided by Helge Lødrup.
21Or alternately, as in Grimshaw’s work, within an Optimality Theoretic framework: inserting do satisfies a high-ranked constraint that would otherwise be violated.
be inserted to host some inflectional material whose normal host is unavailable because of the vagaries of a particular derivation—say, because the verb has been manipulated through ellipsis, pronominalization, or topicalization. By contrast, in our analysis, the restricted distribution of auxiliary *gøre* follows from its defective status. Auxiliary *gøre* is part of the Danish lexicon: it is a feature bundle that can be added to the numeration, just like any other auxiliary, and it can be merged into the extended verbal projection, again, just like any other auxiliary. Unlike other auxiliaries, however, it only takes a pronominal vP complement.

Are these analyses of auxiliary *gøre* empirically different? If we just consider finite *gøre*, the answer seems to be no: tense must be expressed and, in the relevant contexts, it has to be expressed on *gøre* because no other verbal form is present to host the tense suffix. Whether *gøre* is there all along (as in our base-generation analysis) or recruited at a relatively late stage in the derivation (as in the last-resort analysis) appears to be a matter of analytical preference and theoretical commitment. But the existence of nonfinite *gøre*, and its general optionality, pose a challenge to last-resort analyses. If nonfinite *gøre* is optional, as it is in many contexts, then nonfinite inflectional morphology does not necessarily have to be expressed. And if it does not have to be expressed, then it is not clear what would motivate the insertion of nonfinite *gøre*. If there is no problem to solve, then there is no need to resort to any strategy, let alone a last-resort one. Since most dialects of English lack nonfinite forms of auxiliary *do*, this issue has not figured very prominently in the literature (though, see Baltin 2007 on British English). But the pervasiveness of nonfinite *gøre* in Danish brings this issue to the forefront, and it suggests that a base-generation account is on the right track, at least for Danish and related languages.

**Data sources**

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<td>Ruth Abildgaard in Danmarks Radio, P1, Dokumentartimen, January 18, 2009.</td>
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<td>(42)</td>
<td>From Korpus 2000</td>
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<td>(58)</td>
<td>From Korpus 2000</td>
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