Reanalyzing the definiteness effect: evidence from Danish[*]

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November 5, 2001

1 Introduction

The term 'definiteness effect' refers to the fact that the post-verbal position (the so-called 'pivot') in an expletive construction is normally restricted to indefinite noun phrases, as illustrated for English in (1).[1]

(1)   a.   There was a narrow passage between the houses.

    b.   *There was the narrow passage between the houses.

Definiteness effects have been documented for many languages, including Chamorro (Chung, 1987, 198–201), Chinese[2] (Huang, 1987, 237–45), Dutch (Bennis, 1986, chapter 3), English (Milsark, 1979, 194–210), Finnish (Holmberg and Nikanne, 1994), and Norwegian (Sveen, 1996, 91).[3] Most previous analyses attribute the definiteness effect to some property that must hold of the DP in pivot position, e.g. that it must be non-quantificational (Milsark, 1979, 194–208), that it must be a predicate (Safir (1987, 87)), that it may not be interpreted as an individual variable (Heim, 1987, 23), that it bears partitive Case (Belletti, 1988, 3–7), or that it must instantiate a novel discourse referent (McNally, 1992, 150). Under these analyses (1b) is ungrammatical, because the definite DP *the narow passage* does not conform to these requirements, whereas the indefinite *a narrow passage* in the well-formed (1a) does.

Where these analyses posit a restriction on what can appear in the pivot position, the present analysis treats the definiteness effect as an epiphenomenon arising from the interaction of constraints governing the *subject* position. Across languages there is a preference for definite subjects over indefinite ones (see e.g. Keenan (1976b, 319), Givón (1978, 300–306), Clark (1978, 91–101)). How rigorously this preference is enforced varies from language to language. In Danish, indefinite subjects are tolerated, but there are strategies for avoiding indefinite DPs in subject position that are not available for definite DPs. These include expletive constructions and constructions with a preposed locative phrase. The definiteness effect found in these constructions reflects the fact that definite DPs are forced to move to subject position where possible, whereas indefinite ones are not. When a definite pivot is prevented from moving to subject position for independent reasons (relating to Case assignment) it may surface in an expletive or preposed locative construction. This shows that the definiteness effect is not absolute, but can be overridden when other considerations outweigh the preference for a definite subject. The systematic overriding of the definiteness effect motivates an analysis within Optimality Theory (OT; Prince and Smolensky (1993)), which provides a formal framework for modelling constraint conflict and constraint interaction in language. Expletive insertion itself is seen a way of resolving the conflict between avoiding an indefinite DP in subject position and satisfying the requirement that something must occupy that position.

The paper is organized as follows. Section 2 lays out the basic characteristics of Danish expletive constructions. Section 3 presents an OT analysis of expletive constructions and the definiteness effect. Section 4 discusses two

[1]The status of the definiteness effect as a grammatical fact is complicated by various pragmatic issues (see e.g. McNally (1992, 89–96), Ward and Birner (1995), and Ward et al. (2001, 33–8)). I discuss some of these complications in section 2.4.

[2]Huang shows that Chinese has at least four types of existential sentences which exhibit definiteness effects to varying degrees.

[3]Clark (1978) discusses definiteness effects and definiteness-induced word order variation in more than thirty languages.

constructions where the definiteness effect is absent, analyzing both in terms of Case assignment. Section 5 extends the analysis to preposed locative construction, which also exhibit definiteness effects. Finally, section 6 summarizes the paper.

2 Expletive constructions in Danish

A typical example of a Danish expletive construction is given in (2).[4]

(2)   Der   var en smal   gang   mellem   husene.
        there was a   narrow passage between houses.DEF

The Danish example looks word-for-word like its English translation in (1a). (There are, however, differences between expletive constructions in the two languages, as documented below.) Like in English, the Danish expletive (*der*) has a cognate place adverbial (*dér* 'there'), which differs from the expletive in being stressed. The pivot is identified as the argument position following the main verb. In (2) the pivot is occupied by the indefinite DP *en smal gang* 'a narrow passage'. The corresponding definite DP is not acceptable in this position, indicating that Danish expletive constructions are subject to the definiteness effect:[5]

(3)   *Der   var den smalle gang   mellem   husene.
        there was the narrow passage between houses.DEF

As in English, the pivot may be followed by one or more adverbials, e.g. the locative phrase *mellem husene* 'between the houses' in (2).

Danish has a wider range of verbs and verb forms occurring in expletive constructions than English.[6] In addition to expletive constructions with a copular verb, Danish has expletive constructions with active intransitive verbs (section 2.1), with active verbs taking two internal arguments (section 2.2), and with passive verb forms (section 2.3).

2.1 Intransitive expletive constructions

Examples of intransitive expletive constructions are given in (4).[7]

(4)   a.   Der   **mangler** en spiller på holdlisten
             there misses   a   player on team.list.DEF
             'There is a player missing from the list'

        b.   Der   **gror** svampe på stammen.
             there grows fungi   on tree.trunk-DEF
             'There are fungi growing on the tree trunk'

        c.   Der   kan **forekomme** rødme of   ømhed   på stedet
             there can appear   redness and soreness on spot.DEF
             'Redness and soreness might appear in the area'

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[4] Most of the grammatical examples cited in this paper are from a 4 million word corpus of contemporary written Danish (DK87–90) collected by Henning Bergenholtz at the Centre for Lexicography at the Aarhus School of Business in Denmark (see Bergenholtz (1992) for documentation). Some of the examples have been shortened or modified to fit the page.

[5] Danish has a definite suffix, glossed DEF, which alternates with a prenominal definite article, see Mikkelsen (1998a, 2–3, 38–47). The morphological shape of attributive adjectives is sensitive to definiteness (see Mikkelsen (1998b, 4–5)), hence the different form of the adjective *smal* 'narrow' in (2) and (3).

[6] Ebeling (2000) shows that this is also true of Norwegian. Comparing corpora of English and Norwegian texts written after 1970, Ebeling found that "only 8 different verbs, including *be* ..., are found in the [English, LHM] material, while 229 different verbs are attested for Norwegian, excluding the verbs in the passive" (Ebeling, 2000, 131). In terms of token frequency, 98.4% of the English expletive constructions had the verb *be*, whereas only 64.6% of the Norwegian expletive constructions had a copula verb (*bli* 'become', *finnes* 'exist', or *være* 'be'), Ebeling (2000, 131). Overall, expletive constructions are more frequent in Norwegian than in English (2,067 expletive constructions in 487,918 words in the Norwegian corpus vs. 1,214 expletive constructions in 509,972 words in the English corpus). A preliminary comparison of the DK87-90 corpus with a sample of the Wall Street Journal corpus and a selection of English novels shows comparable frequencies in Danish.

[7] In English these often translate as expletive constructions with a finite copula verb and a non-finite verbal construction or relative clause following the pivot (see Quirk et al. (1985, 1406–08)).

The verbs in (4) are all unaccusatives. Whether unergative verbs can also occur in Germanic expletive construc-tions is a difficult and controversial issue (see Platzack (1983, 93–4), Hoekstra and Mulder (1990, 6–36), Vikner (1995, 202–9), Sveen (1996, chapter 4), and references cited there). I do not try to settle this question for Danish here, though see the appendix for data and discussion. Intransitive expletive constructions exhibit definiteness effects, as shown in (5) where the pivot position is occupied by a definite DP.

(5)   a. *Der   mangler **spilleren** på holdlisten
              there misses   player.DEF on team.list.DEF

      b. *Der   gror   **svampene** på stammen.
              there grows fungi.DEF   on tree.trunk-DEF

      c. *Der   kan forekomme **rødmen**   **og ømheden**   på stedet
              there can appear   redness.DEF and soreness.DEF on spot.DEF

I propose that intransitive expletive constructions have the syntactic structure in (6), where the expletive is in Spec-IP, the pivot in the sister-of-V position, adverbials right-adjoined to VP, and the finite verb moves from V^0 to I^0.[8]
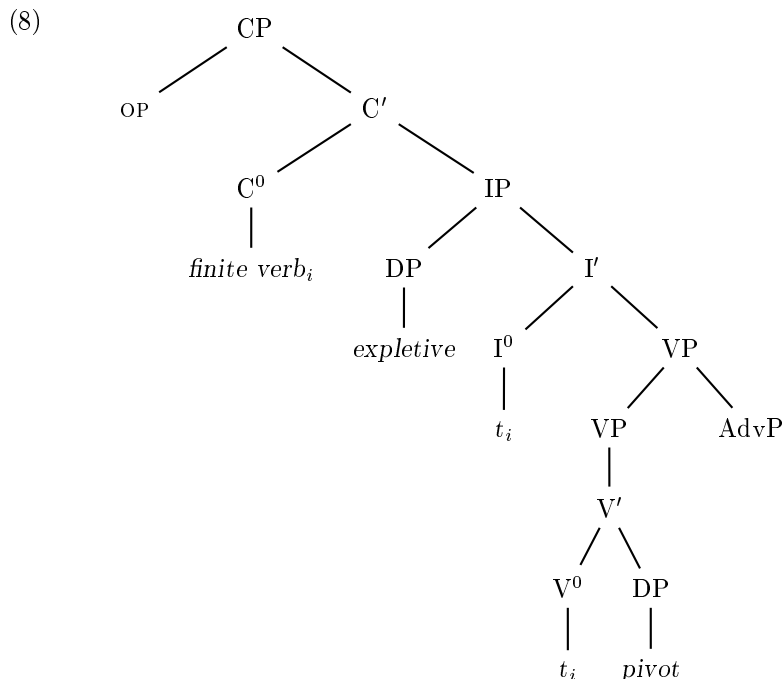
(6)
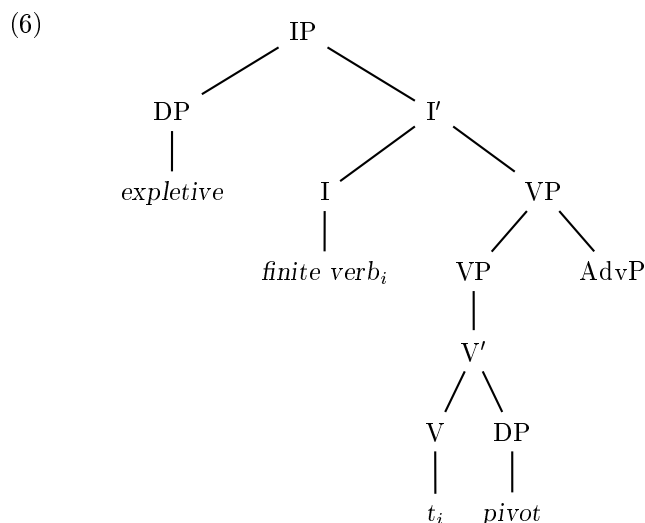
Evidence that the expletive occupies Spec-IP (at least at some level of representation, cf. foonote 8), as opposed to being base-generated in Spec-CP, comes from the possibility of inversion of an expletive with a finite verb in polar questions (see Platzack (1983, 84–92), and Vikner (1995, 184–6)):

(7)   Var der   levende musik til festen?
          was there living   music at party.DEF
          'Was there live music at the party?'

If the expletive were inserted directly in Spec-CP it would be impossible to derive the word order in (7), where the finite verb precedes the expletive, assuming that there is no projection above the CP providing a potential landing site for the finite verb left of the expletive in Spec-CP. The order in (7) is accounted for under the structure in (8), where the finite verb moves to C^0, while the expletive remains in Spec-IP. Spec-CP is occupied by the empty question operator (OP), which is the syntactic representation of the interrogative force of the structure (see Vikner (1995, 49) and references cited there).[9]

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[8]Vikner (1995, chapter 2) assumes that all Danish main clauses are CPs, where the finite verb moves from V^0, via I^0, to C^0. In declarative main clauses Spec-CP must be filled, guaranteeing that the verb appears in second position. If a non-subject constituent moves to Spec-CP (immediately left of the finite verb) the subject appears in Spec-IP (immediately right of the finite verb). Otherwise the subject moves to Spec-CP, leaving a trace in Spec-IP. Expletive subjects are assumed to behave similarly to thematic subjects in this respect. Movement of the subject from Spec-IP to Spec-CP in conjunction with movement of the finite verb from I^0 to C^0 is string-vacuous. For ease of presentation I ignore string-vacuous movement to the C-domain and represent subject-initial main clauses as IPs, where the finite verb has moved to I^0 and the subject occupies Spec-IP.

[9]The presence of the operator in Spec-CP reconciles the analysis of polar questions with the analysis of declarative and *wh*-interrogative main clauses, where Spec-CP is filled by a topicalized constituent or *wh*-phrase.

(8)

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                        CP
                      /    \
                    OP      C′
                          /    \
                        C⁰      IP
                        |      /   \
                  finite verbᵢ  DP    I′
                        |      /    \
                   expletive  I⁰     VP
                             |     /   \
                            tᵢ   VP    AdvP
                                 |
                                 V′
                               /    \
                             V⁰      DP
                             |       |
                            tᵢ     pivot
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I conclude that the expletive is base-generated in Spec-IP in Danish.[10]

2.1.1 The position of the pivot

There are several pieces of evidence that the pivot DP is in the sister of V position, i.e. the direct object position, as opposed to some higher VP-adjoined position.[11] First, the pivot occurs immediately after the finite verb, before any adverbial phrases, which is the position of the direct object in a transitive clause:

(9)   a.   Der   gror   **svampe** på stammen.
           there grows fungi   on tree.trunk-DEF

      b.   *Der   gror   på stammen   **svampe**
           there grows on tree.trunk-DEF fungi

(10) a.   Vi samlede **svampe** i   skoven
           we gathered fungi   in forest.DEF

      b.   *Vi samlede i   skoven   **svampe**
           we gathered in forest.DEF fungi

Second, like a direct object, a pivot cannot cooccur with another direct object DP:

(11) a.   Der   gik   altid   rygter   (*sladder) om   den store filmstjerne
           there went always rumours (gossip)   about the big   moviestar
           *'There were always rumours (*gossip) about the big moviestar'*

      b.   Aviserne   spredte altid   rygter   (*sladder) om   den store filmstjerne
           newspapers.DEF spread always rumours (gossip)   about the big   moviestar
           *The newspapers were always spreading rumours (*gossip) about the big movie star'*

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[10]Independent evidence that the expletive can occupy Spec-IP comes from the distribution of expletives in subject relative clauses, see Mikkelsen (to appear, §2.1, 2.4).

[11]Similar evidence is found in the other Mainland Scandinavian languages, see e.g. Platzack (1983, 92–4) on Swedish and Lødrup (1999, pp. 206–8) on Norwegian.

Finally, there is morphological evidence that the postverbal argument in an expletive construction is accusative, which is the case of direct objects (see 2.1.2 below)

Determining the position of the pivot is important, because Milsark (1979, p 155, 245–55) and Aissen (1975) show that in English there are two kinds of expletive constructions: 'inside verbals' where the pivot is 'inside' VP (in the sister-of-V-position) and 'outside verbals' one where the pivot is 'outside' VP (right-adjoined to VP), and that only inside verbals show definiteness effects in English. The same seems true of Danish, in so far as outside verbal expletive constructions are possible at all.[12] I return to the lack of definiteness effects in the outside verbal construction in section 5.5.

2.1.2 Case assignment

An important issue is how Case is assigned in expletive constructions. Safir (1987, 79–84) argues that the expletive is assigned nominative Case in Spec-IP and that it shares this Case with the pivot DP (the 'associate' in Safir's terminology). Case sharing is facilitated by co-indexation between the expletive and the pivot DP, which form a Θ-chain. When the pivot is a 'name' (i.e. a quantified DP, genetivized DP, or a proper name) co-indexation with the c-commanding expletive violates Principle C of Chomsky's (1981) binding theory, which states that names must be free. The definiteness effect is thus reduced to a Principle C violation. Safir (1987, 86–8) proposes that indefinite pivot DPs do not violate Principle C, since these are predicates and hence not subject to Principle C. The Case-sharing analysis predicts that the pivot DP is nominative. This prediction is difficult to test in Danish, since only personal pronouns show case distinctions, and pronouns are normally barred from the pivot position since they are definite:

(12)   *Der   var ham / hende tilbage
         there was him / her   left

However, the presence of the focus particle *kun* ('only') licenses a personal pronoun in this position.[13] As shown in (13) a pronoun in pivot position is morphologically accusative, not nominative.

(13)   a.   Der   var kun **ham** / ***han** tilbage
              there was only him   / he   left

        b.   Der   var kun **hende** / ***hun** tilbage
              there was only her   / she   left

Pronouns in direct object position are also accusative:

(14)   a.   Vi så   kun **ham** / ***han**
              we saw only him   / he

        b.   Vi så   kun **hende** / ***hun**
              we saw only her   / she

In contrast, a pronoun in subject position is nominative:

(15)   a.   Kun **hun** / ***hende** kunne løse   opgaven
              only she   / her   could solve assignment.DEF

        b.   Kun **han** / ***ham** kunne løse   opgaven
              only he   / him   could solve assignment.DEF

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[12] In expletive constructions with a clause-final pivot it is not clear whether the pivot is inside or outside VP. I have not found any unambiguous examples of the outside verbal expletive construction in the DK 87-90 corpus.

[13] A similar observation is made about English *only* by McNally (1992, 243–245), citing examples like (i) and (ii):

  i. There was only Kent available   [= McNally's (349a)]

  ii.* There was Kent available   [= McNally's (352a)]

McNally provides an account of this contrast in terms of the focus semantics for *only* developed in Rooth (1985). She argues (pp. 244–5) that (i) is possible because one of the semantic effects of *only* in a sentence like (i) is that *Kent* does not instantiate a discourse referent and hence there is no violation of the felicity condition that says that the discourse reference instantiated by the pivot DP must be novel (see 2.4 below). The important thing here is that the licensing properties of *kun* allow us to establish the morphological case of pivot DPs.

If these facts reflect abstract Case assignment, the pivot is assigned accusative Case, not nominative, as predicted under the Case-sharing analysis. I conclude that there is no Case-sharing in Danish expletive constructions, and propose that the pivot DP is assigned accusative Case by V in its base position, and that the expletive is assigned nominative Case by finite I in Spec-IP.[14] Given that these verbs do not assign an external theta role (they are unaccusatives), the fact that they do assign accusative Case to the pivot DP in expletive constructions constitutes an exception to the generalization that verbs that do not assign an external theta role do not assign accusative Case (Burzio (1986, 178)).[15]

Evidence that the expletive must be assigned Case comes from the fact that an expletive originating in an infinitival clause embedded under a raising verb must raise out of the infinitival clause to the subject position of the raising verb (cf. Vikner (1995, 186)):

(16)   a.   [= Vikner (1995: 186), ex. (37a)]
           ... at   **der**$_i$ faktisk ser   ud til t$_i$ ikke at blive   danset til festen
           ... that there actually seem out to   not to become danced at party-the
           '... *that there actually seems not to be any dancing at the party*'

        b.   [= Vikner (1995: 186), ex. (37b)]
          *... at   det faktisk ser   ud til **der** ikke at blive   danset til festen
           ... that it   actually seem out to there not to become danced at party-the

Vikner argues that (16b) is ungrammatical because the expletive is not assigned Case in violation of the Case Filter. As in English, non-finite I is not a Case assigner in Danish, and the expletive must raise to Spec-IP of the higher finite clause to receive Case. If the expletive did not need Case we would expect (16b) to be grammatical on analogy with the finite embedded expletive construction in (17).

(17)   ... at   det faktisk ser   ud til at   **der** ikke bliver   danset til festen
         ... that it   actually seem out to that there not becomes danced at party-the
         '... *that it actually seems that there is no dancing at the party*'

I conclude with Vikner (1995, 186) that the expletive *der* is assigned nominative Case in Spec-IP.

2.2   Expletive constructions with two internal arguments

In addition to intransitive expletive constructions with a single post-verbal DP argument, we find expletive constructions with two post-verbal DP arguments:

(18)   a.   Der   ventede [$_{DP}$ mig] [$_{DP}$ en ubehagelig aften]   hjemme.
           there awaited   me   an unpleasant evening at.home
           '*An unpleasant evening awaited me at home*'

        b.   Der   tilfaldt [$_{DP}$ den ældste datter]   [$_{DP}$ en stor sum penge]
           there to.fell   the oldest daughter   a large sum money
           '*The oldest daughter received a large sum of money*'

        c.   Der   overgik   [$_{DP}$ en af mine venner] [$_{DP}$ en uventet   glæde]
           there over.went   one of my   friends   an unexpected joy
           '*Some unexpected positive thing happened to a friend of mine*'

The first DP is interpreted as the benefactive or recipient of the event expressed by the verb, whereas the second DP is the theme.[16] With respect to theta roles these verbs are thus like ditransitives except that they do not

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[14]Another possible scenario is that the pivot DP is assigned accusative Case by I^0. This is unlikely for two reasons. First the pivot is not in a local configuration with I^0, in fact the finite verb and the pivot can be separated by several auxiliaries plus the main verb:

    i. Der **skulle** have været kommet **en mand** forbi her igår
       there should have been come   a man   by   here yesterday

Second, there is evidence that the expletive is assigned nominative Case in Spec-IP, absorbing the Case assigning potential of finite I^0 (see below).

[15]Lødrup (1999, 211) argues that Burzio's generalization is similarly violated in Norwegian.

[16]Vikner (1995, 217) assumes that the first post-verbal argument is an experiencer, not a benefactive. I find this unlikely since this argument can be linked to a DP denoting a non-sentient entity, e.g. a library, as in (i).

assign an external role. These expletive constructions show definiteness effects on the theme argument as shown in (19), whereas the beneficiary argument may be definite, cf. the grammatical examples in (18a-b).[17]

(19)   a. *Der ventede [$_{DP}$ mig] [$_{DP}$ **den** ubehagelige aften   hjemme].
                there awaited   me   the unpleasant evening at.home

        b. *Der tilfaldt [$_{DP}$ den ældste datter]   [$_{DP}$ **den** store sum penge]
                there to.fell   the oldest daughter   the large sum money

        c. *Der overgik   [$_{DP}$ en af mine venner] [$_{DP}$ **den** uventede   glæde]
                there over.went   one of my   friends   the unexpected joy

Following the analysis of double object constructions in Falk (1990, 54ff), I propose that expletive constructions with two arguments have the syntactic structure in (20), where the beneficiary argument is in Spec-VP and the theme argument is sister of V. The verb raises out of the lower VP into the head position of the higher VP yielding the observed surface word order (see also Larson (1988, 353ff) and Collins and Thráinsson (1996, 426ff)).[18]

(20)
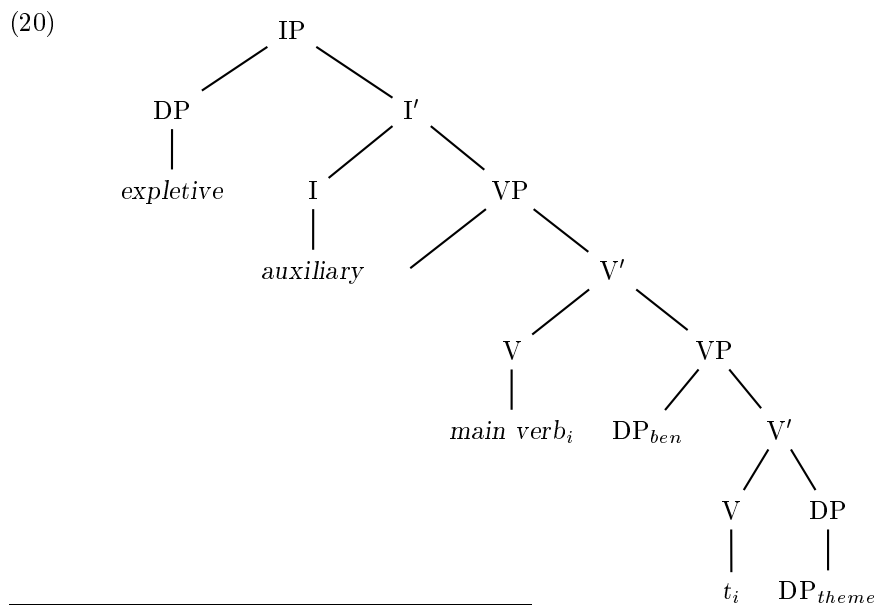
i. Der tilfaldt biblioteket en større samling sjældne bøger
    there to-fell library.DEF a larger collection rare   books
    'The library received a rather large collection of rare books'

The benefactive argument in a ditransitive construction can likewise be expressed by a DP denoting a non-sentient entity (ii), whereas this is not possible with proto-typical experiencer-theme verbs like *behage* 'please', as shown in (iii).

ii. Forfatteren skænkede biblioteket en større samling sjældne bøger
    writer.DEF gave   library.DEF a larger collection rare   books
    'The writer gave the library a rather large collection of rare books'

iii.#Den store samling   sjældne bøger behagede biblioteket
    the large collection rare   books pleased   library.DEF

Furthermore, as Vikner notes himself (p. 219), experiencer-theme verbs like *behage* 'please' and *afsky* 'loathe' verbs cannot appear in expletive constructions, whereas passive ditransitive verbs can:

iv. *Der behagede biblioteket en større samling sjældne bøger
    there pleased   library.DEF a larger collection rare   books

v. Der blev skænket biblioteket en større samling   sjældne bøger
    there was given   library.DEF a larger collection rare   books
    'The library was given a rather large collection of rare books'

I take this as evidence that the first post-verbal argument in the expletive constructions in (18) is a benefactive. Similar conclusions are reached for Norwegian by Lødrup (1991).

[17]Similar observations are made for Norwegian in Åfarli (1992, 70).

[18]I use a complex tense form with a finite auxiliary in I^0 to illustrate the need for the non-finite verb to raise out of its base position in these structures.

The verb assigns accusative Case to the theme argument, whereas the beneficiary receives inherent Case (see Larson (1988, 360ff) and Falk (1990, 86–92) for discussion).

In contrast to expletive constructions with two internal arguments (beneficiary and theme), expletive constructions with an agent and a theme argument (so-called transitive expletive constructions) are systematically excluded in Danish:

(21)   a. *Der købte **en mand** et hus
              there bought a   man   a house

        b. *Der spiste **en pige** en is
              there ate   a   girl an icecream

        c. *Der afleverer **mange studerende** opgaver   for sent
              there hand.in many   students   assignments too late

I assume that these constructions are excluded for Case reasons, since the agentive DP is not assigned Case. Inherent Case is not available, since inherent Case is tied to a specific theta role (the beneficiary, cf. above). Structural Case is also not available: accusative Case is assigned to the theme argument, and nominative Case to the expletive. See Vikner (1995, 153, 188-90), Bobaljik and Jonas (1996, 208–22) for alternative analyses and detailed discussion.

2.3   Passive expletive constructions

Examples of passive expletive constructions are given in (22). Danish has two kinds of passives: one marked with a suffix on the verb (-s, glossed PASS), as in (22a), and one marked with a passive auxiliary (*blive* 'become'), as in (22b-c).

(22)   a. Der **stilles**   samtidig   store krav   til det offentlige
              there put.PASS simultaneously great demands to the public
              'At the same time there are great demands put on the public administration'

        b. Der **blev**   **tilkaldt** en ambulance
              there became called   an ambulances
              'There was an ambulance called'

        c. Der **blev**   **gjort** et hæderligt forsøg   inden fristens   udløb
              there became made a decent   attempt before dead.line.DEF.POSS out.run
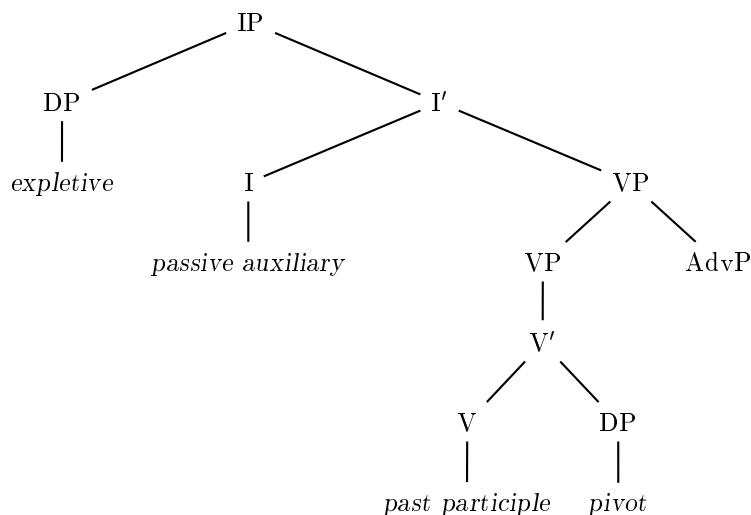   *'There was a decent attempt made before the deadline was up'*

Notice that the word order in passive expletive constructions differ between Danish and English. In Danish the pivot DP follows the past participle form, in English the order is reversed. I assume that the Danish word order reflects the base-generated one, whereas the English word order is derived by movement (see e.g. Chomsky (1999, 15–20), Hogoboom (2000, 6–8), and Radford (2000)). Passive expletive constructions exhibit definiteness effects on the pivot position as shown in (23).

(23)   a. *Der stilles   samtidig   **de store krav**   til det offentlige
              there put.PASS simultaneously the great demands to the public

        b. *Der blev   tilkaldt **ambulancen**
              there became called   ambulance.DEF

        c. *Der blev   gjort **det hæderlige forsøg** inden fristens   udløb
              there became made the decent   attempt before dead.line.DEF.POSS out.run

I propose the following structure for passive expletive constructions, where the pivot is sister of V and the passive auxiliary *blive* is base-generated in I^0:

(24)

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                        IP
                      /    \
                    DP      I'
                    |      /   \
                 expletive I      VP
                    |    /    \
              passive auxiliary VP    AdvP
                          |
                          V'
                        /   \
                       V     DP
                       |     |
                 past participle  pivot
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Following Åfarli (1992, 60–9), I assume that the past participle assigns accusative Case to the pivot DP. Thus in both active and passive expletive constructions the pivot is assigned accusative Case by its sister (V^0) in its base-position. Under this analysis, movement of the internal argument to Spec-IP is never Case-driven, since the internal argument can receive Case in its base-generated position. Rather, it is driven by the requirement that Spec-IP be filled, which is also the motivation for inserting of an expletive when the internal argument does not move to Spec-IP. This reasoning is central to the OT analysis proposed below (section 3).
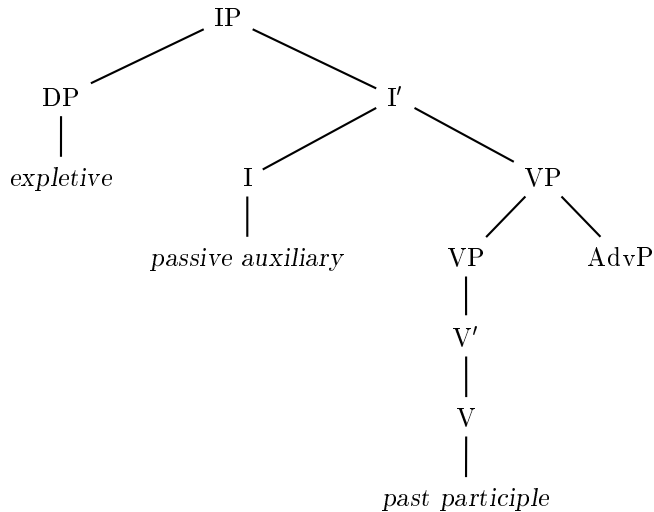
Danish also has a passive intransitive expletive construction – the so-called 'impersonal passive' – which is distinguished by not having a pivot DP, since the sole argument of the intransitive verb is suppressed in the passive:

(25)   a.   Der **råbes**   højt   på Christiansborg[19] i disse dage
            there yell.PASS loudly at Christiansborg   in these days
            'There is a lot of yelling at Christiansborg these days'

       b.   Der **blev**   **danset** rundt i ring.
            there became danced around in ring
            'People were dancing around in a circle'

       c.   Og der **blev**   **tygget** videre
            and there became chewed further
            'And people kept chewing'

This construction is limited to the passive of unergative verbs, i.e. verbs that take an external argument in the active voice (Kirsner (1976, 387–9), Perlmutter (1978), Vikner (1995, p. 209), and Sveen (1996, 52–62)). Since there is no pivot DP, there is no definiteness effect in impersonal passives. I propose that impersonal passives have the syntactic structure in (26).

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[19]*Christiansborg* is the name of the Danish parliment building.

(26)

```
                        IP
                    ┌────┴──────┐
                   DP           I′
                    |        ┌───┴────────┐
                expletive    I           VP
                             |        ┌───┴────┐
                      passive auxiliary VP     AdvP
                                        |
                                        V′
                                        |
                                        V
                                        |
                                  past participle
```

This concludes the survey of expletive constructions in Danish. Before turning to the OT analysis, I briefly discuss some issues surrounding the grammatical status of the definiteness effect.

2.4 The status of the definiteness effect

Stated as a morphological requirement that the post-verbal DP cannot be definite (i.e. contain a definite article or suffix), there are exceptions to the definiteness effect. One type of exception is the so-called list-reading, where one or more formally definite pivot DP(s), are used to convey new information or to remind the addressee of the existence of the referents of the DPs. An example from the corpus is given in (27), which occurred in a passage discussing a restaurant experience in France.

(27)　Der　var　**maden**,　der　var　**vinen**,　men der　　var også　**gæsten**　som skulle　have det bedst
　　　　there was food.DEF, there was wine.DEF, but　there was also　guest.DEF　who should　have the best
　　　　mulige　måltid.
　　　　possible meal.
　　　　'There was the food, there was the wine, but there was also the guest who needed the best possible meal.'

According to Milsark (1979) and Rando and Napoli (1978) the morphologically definite pivot DPs are interpreted as items on a list, and while the DPs themselves are definite, the list (Milsark, 1979, 209) or the identity of the items on the list (Rando and Napoli, 1978, 306–11) is indefinite.

Another type of exception is illustrated in (28), which occurred in an article about the development in insurance policies.

(28)　For bilisterne　er der　tale om　　en tilbagegang på ni　procent i　forhold til 1987, hvor　**der**　blev
　　　　For car.drivers is there talk about a　decline　　of　nine percent in relation to 1987　when there became
　　　　registreret **det største antal**　**skader**　**nogensinde**
　　　　registered　the　highest　number insidents ever
　　　　'For cars this is 9% less than in 1987, when the highest number of incidents ever was registered'

The definite pivot DP is a 'self-establishing definite': rather than referring to an already established discourse referent, it establishes a new discourse referent (see Hawkins (1978, 102, 130ff)). The definite, rather than indefinite, article is used because there is only one entity satisfying the description, as implied by the superlative adjective.

Based on similar data from English, Ward and Birner (1995) argue that the definiteness effect cannot be adequately charaterized in purely formal terms, i.e. by describing the morpho–syntactic properties of the DP. Rather the correct characterization of the definiteness effect is that the pivot must be (treated as if it was) HEARER-NEW in the sense of Prince (1981). However, as Ward and Birner (1995) acknowledge, there is a strong

correlation between hearer newness and morphological indefiniteness, and only in cases where this correlation breaks down is the formal characterization of the definiteness effect distinguishable from the discourse-functional one that they provide. For the purposes of this paper I set these occurrences of formally definite, but semantically or pragmatically indefinite, pivots aside and leave the characterization of the relationship between the semantic notion of (in)definiteness and the lexical and morphological expressions of (in)definiteness to future research.[20]

3   Reanalyzing definiteness effects in OT

The intuition behind the analysis presented below is that the definiteness effect is the result of a competition among elements for subject position – most prominently the pivot DP and an expletive – and that the outcome depends on the definiteness of the pivot DP. The OT analysis formalizes this intuition making use of universal, but violable, constraints that are well-motivated. Some correspond to constraints familiar from the generative tradition (SUBJECT and *EXPLETIVE in section 3.1, and CASE and TOPIC in section 4); some correspond to generalizations established in the functional literature (the hierarchy of constraints on (in)definite DPs in subject position in section 3.2).

3.1   SUBJECT and *EXPLETIVE

In Danish the subject position of a finite clause must be filled by an overt element. This can be a DP with lexical content (as in (29)) or an expletive (30), but leaving the subject position empty is not a grammatical option, as (31) shows.[21]

(29)   **Spilleren** mangler på holdlisten
          player.DEF misses   on team.list.DEF
          'The player is missing on the list'

(30)   **Der** mangler en spiller på holdlisten
          there misses   a   player on team.list.DEF
          'There is a player missing on the list'

(31)   *Mangler spilleren   på holdlisten
           misses   player.DEF on team.list.DEF

In structural terms the subject position is identified as Spec-IP (see section 2.1 above). In GB the requirement that this position must be filled is accounted for in terms of the Extended Projection Principle (EPP; Chomsky (1982)), which in OT is recast as a violable constraint called SUBJECT (Grimshaw (1997, 374), Grimshaw and Samek-Lodovici (1998, 194)):

(32)   SUBJECT: Spec-IP is filled by overt material.[22]

The ranking of SUBJECT with respect to other constraints in the grammar of Danish is responsible for the ungrammaticality of (31) above. One of these is the constraint against expletives, defined in (33).

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[20] McNally (1992, 89–96) argues that the definiteness effect found in the English existential construction is not a unitary phenomenon. Strongly quantified DPs (like *every house*) are excluded for semantic reasons – their quantificational nature induces a sort mismatch with the interpretation of the existential in her property-theoretic analysis (pp. 134–6) – while definite DPs (including definite descriptions, pronouns and proper names) are excluded by an independent felicity condition that the pivot must denote (in McNally's terms 'instantiate') a novel discourse referent (p. 150).

[21] The string in (31) is grammatical as a polar question (*Is the player missing on the list?*), where the finite verb has moved to C^0 and the post-verbal DP occupies the subject position (Spec-IP), cf. the structure in (8).

[22] Grimshaw (1997, 390) defines the SUBJECT constraint in terms of the highest A-specifier position, which can be Spec-VP or Spec-IP (or Spec of TP, NegP or AgrP where these are assumed) depending on the size of the clausal projection: if the clause is a VP, the highest A-specifier is Spec-VP, if it is an IP, the highest A-specifier is Spec-IP. Here I assume that all clauses are IPs or CPs and that the subject position is uniformly Spec-IP. I further assume that the trace of an overt element can satisfy the SUBJECT constraint. This is crucial for the analysis of preposed locatives in section 5. On formalization of OT constraints see Kuhn (2001, §4).

(33)   *EXPLETIVE: no expletive elements, i.e. no output element without a corresponding input element.[23]

*EXPLETIVE and SUBJECT conflict: inserting an expletive in Spec-IP satisfies SUBJECT, but violates *EXPLETIVE. Not inserting an expletive satisfies *EXPLETIVE, but violates SUBJECT (assuming nothing else occupies Spec-IP). The fact that impersonal passives require an expletive shows that SUBJECT dominates *EXPLETIVE in Danish:

(34)   a.   Der   blev   danset.
              there became danced
              'There was dancing going on'

        b.   *blev   danset
              became danced

Before proceeding with the analysis of impersonal passives, I briefly state my assumptions about the input to the OT evaluation and the competing candidate structures.

On the input and the candidate set   Following Grimshaw (1997, 375-6), I assume that the input consists of a lexical head, its argument structure, and an assignment of lexical heads to its arguments. For simplicity, I specify voice in the input, which allows me to abstract away from the constraints that distinguish active from passive candidates (see the OT analysis of voice in Aissen (1999b)). I further assume that arguments are specified for definiteness in the input, as illustrated in the sample input in (35):

(35)   < arrive(x), x=parcel, x=DEF >

The input is passed to Gen (see Prince and Smolensky (1993, 4ff)) which generates all extended projections that realize the predicate-argument structure of the input and conform to X-bar theory (Grimshaw, 1997, 376).[24] These annotated s-structure representations constitute the candidate set for a given input. The smallest verbal projection is VP, while IP and CP are extended verbal projections. A candidate can thus be a VP, an IP or a CP, as illustrated by the sample candidate set in (36).

(36)   a.   [$_{VP}$ arrived the parcel]

        b.   [$_{IP}$ the parcel$_i$ [$_{VP}$ arrived t$_i$]]

        c.   [$_{CP}$ the parcel$_i$ [$_{IP}$ t$_i$ [$_{VP}$ arrived t$_i$]]]

Which of these candidates is optimal depends on the constraint ranking and satisfaction. For instance, SUBJECT, as defined in (32) above, requires Spec-IP to be projected (and filled). The candidate set is restricted by semantic considerations. Informally, only candidates which are semantically equivalent can be part of the same candidate set. This restriction has proven hard to formalize, and I do not attempt to do so here (see Grimshaw (1997, 375), Heck et al. (2000, §3), Kuhn (2001, §3.1), and references cited there for discussion). Importantly, I do assume that expletive and non-expletive constructions are generated as part of the same candidate set.[25] On this view expletives are semantically vacuous and have no featural specification.

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[23]As defined in (33), the *EXPLETIVE constraint is a faithfulness constraint – more precisely a DEPENDENCY constraint in the correspondence theory of McCarthy and Prince (1995)) – i.e. a constraint governing the relation between the input and the output. As shown in Heck et al. (2000, §3.3.1) *EXPLETIVE can also be formulated as a markedness constraint, i.e. a constraint making reference only to output structures. This is part of Heck et al.'s general thesis that the input is superflous in OT syntax, and should be dispensed with. Here I maintain a more traditional view of the input (essentially that of Grimshaw (1997), cf. below) and a faithfulness formulation of the *EXPLETIVE constraint (cf. Grimshaw's (1997, 374, 383) formulation of the FULL INTERPRETATION constraint).

[24]This procedure is formalized with an LFG-based generator in Kuhn (2001, §3)

[25]Following Grimshaw (1997) I assume that expletives are never present in the input, since they are never selected by a lexical head. Instead an expletive can be inserted in a given candidate by Gen, in accordance with the principle of Freedom of Analysis (Prince and Smolensky, 1993, 15). See Heck et al. (2000, 18) for a different view.

Impersonal passives Impersonal passives are distinguished by not having any lexical arguments, since the single external argument of the intransitive unergative verb is suppressed in the passive (cf. section 2.3 above). Thus no subject argument is specified in the input, leaving an expletive as the only possible filler for Spec-IP:

(37)

	< blev-danset(x) >	SUBJECT	*EXPLETIVE
a.	[IP blev [VP danset]]	*!	
b.	☞ [IP der blev [VP danset]]		*

Candidate (37a) is maximally faithful to the input (no expletive is inserted), but violates the high-ranked SUBJECT constraint, since Spec-IP is left empty. In candidate (37b) an expletive is inserted in Spec-IP satisfying the SUBJECT constraint, but violating *EXPLETIVE. Since SUBJECT outranks *EXPLETIVE in Danish, the expletive candidate in (37b) is optimal, faring better on the highest-ranked constraint on which the two candidates differ. The evaluation in (37) accounts for the fact that impersonal passives require an expletive in Danish, cf. (34) above.

3.2 Definite and indefinite subjects

In sentences with no pivot (like the impersonal passives discussed above) there is nothing to fill the subject position other than an expletive. However in sentences with a pivot, there is. The question is whether the SUBJECT constraint is satisfied by the pivot or by an expletive. The answer is different depending on the definiteness of the pivot: if the pivot is definite, it moves to subject position; if it is indefinite, it is possible to insert an expletive in Spec-IP, leaving the pivot DP in its base-generated position (sister-of-V). What is needed to account for this pattern are constraints that penalize an indefinite subject more severely than a definite one. Such constraints are not peculiar to Danish. It has been observed in the functional and typological literature that, cross-linguistically, indefinite subjects are more marked than definite subjects (Keenan (1976b, 319), Givón (1978, 300–306), Clark (1978, 91–101)). There are languages where indefinite subjects are ungrammatical.[26] Examples given in the literature include Bemba (Givón, 1978, 300), Kinyarwanda (Keenan, 1976b, 319), Malagasy (Keenan, 1976a, 252–3), Mandarin (Givón, 1976, 154), and Tagalog (Foley and van Valin Jr. (1984, 139–40); Kroeger (1993, 14–5, 53)). There are languages where referential indefinite subjects are allowed, but subject to further interpretational restrictions. In Dutch an indefinite noun phrase can only appear in the canonical pre-verbal subject position if interpreted as generic, universal (e.g. in the scope of a conditional operator), partitive or specific, according to Rullmann (1989). Similar conclusions are reached for Norwegian in Sveen (1996, 140-155). In Modern Standard Arabic, which does not have an indefinite article, a pre-verbal bare nominal subject must be interpreted as generic, specific or quantificational, and not as a "pure indefinite" (Fehri, 1993, 29). In Finnish, which has no articles, "a preverbal subject (if not otherwise marked as indefinite) is normally translated with a definite article [in English LHM]" (Chesterman, 1991, 100). Similar observations are made for bare subject noun phrases in Hindi by Singh (1994, 220). Finally, there are languages like English where indefinites may occupy the subject position seemingly with no interpretive restrictions (Reuland, 1989). Even in English, however, there are reflexes of the markedness of indefinite subjects, in the sense that there are strategies for avoiding an indefinite subject which are not available for definite subjects. One such strategy is expletive insertion, the focus of this paper. Crucially, no language allows indefinite noun phrases to occupy the canonical subject position, while disallowing definite noun phrases in this position.

To formalize these generalizations within OT I use harmonic alignment of prominence scales. The intuition behind harmonic alignment is that the association of a prominent element with a prominent position is more harmonic, than the association of a non-prominent element with a prominent position. Conversely, the association of a non-prominent element with a non-prominent position is more harmonic than the association of a prominent element with a non-prominent position. This type of situation is known as markedness reversal (see Aissen (1999a,

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[26]More precisely, referential indefinite subjects are ungrammatical, whereas indefinite subjects with a generic interpretation are possible, cf. the distinction between weak and strong indefinites in 3.4.

7–8) and references cited there). An example from phonology is the alignment of the sonority scale on segments with the scale on syllable position (Peak > Margin) in chapter 8 of Prince and Smolensky (1993): more sonorous segments (vowels) are preferred in the more prominent position (the peak – aka the nucleus – position), whereas less sonorous elements (consonants) are dispreferred in peak position. Conversely, consonants are preferred in margin position (onset and coda), where vowels are dispreferred. In the domain of syntax, harmonic alignment is used in the analysis of voice in Aissen (1999a), where the scale on grammatical relations is aligned with the scale on thematic roles, and in the analysis of differential object marking in Aissen (1999b), where the relational scale is aligned with scales on animacy and definiteness. Here the relevant alignment is that between the scale on grammatical relations with the definiteness scale (cf. below). In formal terms, harmonic alignment is defined by Prince and Smolensky (1993, 136) as in (38):

(38)   Suppose given a binary dimension D_1 with a scale X > Y on its elements {X,Y}, and another dimension D_2 with a scale a > b > ... > z on its elements. The *harmonic alignment* of D_1 and D_2 is the pair of Harmony scales:

H_x: X/a $\succ$ X/b $\succ$ ... $\succ$ X/z
H_y: Y/z $\succ$ ... $\succ$ Y/b $\succ$ Y/a

The *constraint alignment* is the pair of constraint hierarchies:

C_x *X/z $\gg$ ... $\gg$ *X/b $\gg$ *X/a
C_y *Y/a $\gg$ *Y/b $\gg$ ... $\gg$ *Y/z

where C_x and C_y are fixed universal subhierarchies of individual grammars, and *X/z is interpreted as 'avoid the association of X and z'.

The two prominence scales relevant here are the scale on grammatical relations (Aissen, 1999b, 7ff), and the definiteness scale (Aissen, 1999b), as defined in (39).[27]

(39)   a.   Relational scale: Subject > Non-subject[28]
        b.   Definiteness scale: Definite > Strong Indefinite > Weak Indefinite

The relational scale expresses that subjects are more prominent than non-subjects, and the definiteness scale that definite DPs are more prominent than indefinite DPs (the distinction between strong and weak indefinites is discussed in 3.4 below). Alignment of the two prominence scales yields the pair of harmony scales in (40).

(40)   a.   Su/Def $\succ$ Su/SI $\succ$ Su/WI
        b.   Non-su/WI $\succ$ Non-su/SI $\succ$ Non-su/Def

From these we derive two hierarchies of markedness constraints, whose internal rankings are universally fixed. (Recall that '*X/z' reads 'avoid the association of X and z'.):[29]

(41)   a.   *Su/WI $\gg$ *Su/SI $\gg$ *Su/Def
        b.   *Non-Su/Def $\gg$ *Non-su/SI $\gg$ *Non-su/WI

The ranking of *Su/WI and *Su/SI over *Su/Def in (41a) expresses the insight from the typological literature that indefinite subjects are universally more marked than definite subjects. The ranking of *Su/WI over *Su/SI is relevant for the interpretative restrictions on indefinite subjects in languages like Arabic, Danish, Dutch, and Norwegian. Crucially, other constraints may be ranked between the constraints in (41a) as long as their relative ranking is preserved.

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[27] The terms on the scales are abbreviated as follows: Su = Subject; Definite = Def; Strong Indefinite (SI); Weak Indefinite = WI.
[28] Here 'subject' is understood in structural terms as the constituent occupying Spec-IP. Non-subject positions include the direct and indirect object positions.
[29] Only the hierarchy on subjects in (41a) is relevant here. The hierarchy on non-subjects is included for completeness of the harmonic alignment operation, and plays no further role in the analysis.

3.3 Deriving the definiteness effect

It is a central claim of the present analysis is that the ungrammaticality of expletive constructions with a definite pivot, as in (42), is directly related to the grammaticality of the corresponding non-expletive constructions in (43).

(42)   a.   *Der gror   **svampene** på stammen.
           there grows fungi.DEF   on tree.trunk.DEF

       b.   *Der blev   tilkaldt **ambulancen**.
           there became called   ambulance.DEF

(43)   a.   **Svampene** gror   på stammen.
           fungi.DEF   grow on tree.trunk.DEF
           'The fungi are growing on the tree trunk'

       b.   **Ambulancen** blev   tilkaldt.
           ambulance.DEF became called
           'The ambulance was called'

In OT terms this relation is one of competition: expletive constructions compete with non-expletive constructions, as shown in the tableau in (44):[30]

(44)

	$<$V(x), x=DP$_{def}$ $>$	Subject	*Expletive	*Su/Def
a.	$[_{IP}$ Expl $[_{VP}$ V DP$_{def}$ $]]$		*!	
b.	☞ $[_{IP}$ DP$_{def}$ $[_{VP}$ V t $]]$			*
c.	$[_{VP}$ V DP$_{def}$ $]$	*!		

The input is an intransitive verb with a definite internal argument. In candidate (44a), the internal argument occurs in its base-generated position, and an expletive appears in Spec-IP, satisfying the Subject constraint, but violating *Expletive. In candidate (44b) the internal argument has moved to Spec-IP, satisfying the Subject constraint, but violating *Su/Def. Since *Expletive outranks *Su/Def, (44b) is more harmonic than (44a). The candidate in (44c) violates the undominated Subject constraint, since the internal argument occurs in its base-generated position, while no expletive is inserted, leaving Spec-IP empty. On this analysis the definiteness effect arises from an unnecessary violation of *Expletive: a definite DP makes a good subject, so there is no need to insert an expletive. The unnecessary constraint violation renders the structure in (44a) non-optimal, which accounts for the ungrammaticality of expletive constructions with definite pivots (cf. (42)). Where previous analyses posit a restriction on what can appear in the pivot position, the present analysis treats the definiteness effect as an epiphenomenon arising from the interaction of constraints governing the subject position.

3.4 Strong and Weak Indefinites

Indefinite DPs occur in both subject and pivot position, but the position of the indefinite restricts its interpretation.[31] An indefinite in subject position may receive a generic interpretation, as in (45). In the corresponding expletive construction in (46) the indefinite is in pivot position, and the generic interpretation is not available. Instead the indefinite is interpreted as an existential quantifier that takes narrow scope with respect to the modal *skal* 'must' and the quantificational adverbial *to gange* 'twice'.[32]

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[30]To save space I use schematic inputs and candidates, where Expl represents the expletive *der*, v an auxiliary verb, V the main verb and DP the internal argument. (In)definiteness is subscripted to the DP using the abreviations from note 27. Indices are left out where possible, and constraints where irrelevant. In this section I concentrate on active intransitive expletive constructions. Passive expletive constructions are analysed in section 4.

[31]Similar facts are reported for Norwegian in Sveen (1996, 143ff).

[32]I paraphrase the generic reading as universal quantification.

(45) **En hæk** skal klippes to   gange om sommeren
      a   hedge must cut.PASS two times in   summer.DEF
      'Every hedge must be cut twice every summer'

(46) Der   skal klippes **en hæk** to   gange om sommeren
      there must cut.PASS a   hedge two times in   summer.DEF
      'Every summer there has to be two hedge-cutting events'
      ≠ *'Every hedge must be cut twice every summer'*

An indefinite in subject position may also refer to a subset of a previously introduced set of discourse referents, whereas this is not possible for an indefinite in pivot position (contra Belletti (1988, fn. 4, p. 2)). Consider (47) and the two possible continuations in (48).

(47) 4 millioner er det lykkedes **os 200 folk**   at trylle   frem
      4 million   is it   suceeded us 200 people to conjure up
      '200 people have managed to contribute 4 million'

(48) a. **Nogle** har været med i   alle årene.
          some   have been with in all   years.DEF
          'Some (i.e.of the 200 people) have been involved every year'

      b. Der   har været **nogle** med i   alle årene
          there have been some   with in all   years.DEF
          'There have been some people involved every year'

In (48a) *nogle* ('some') refers to a subset of the 200 people introduced in (47). In the expletive construction in (48b) the referent(s) of the indefinite must be disjoint from the set of 200 people. These positionally determined differences in interpretation motivate a distinction between STRONG indefinites (with a generic, partitive, or specific interpretation) and WEAK indefinites (with a narrow scope existential interpretation). A distinction between weak and strong indefinites is argued to exist in other Germanic languages by Diesing (1992)[33] and de Hoop (1996). Diesing (1992) analyses the differences in interpretation as a direct consequence of the syntactic position of the indefinite (Spec-VP for weak indefinites and Spec-IP for strong indefinites, Diesing (1992, 8-11)), whereas de Hoop analyses it as a result of the Case assigned to the indefinite (weak Case vs. strong Case, de Hoop (1996, 183ff)). Here I treat the weak/strong distinction as a property of the indefinite DP, which is present in the input (subscripted to the DP). Cross-linguistically, strong indefinites behave more like definites than weak indefinites do. In particular, there are languages where only definite and strong indefinite DPs can occur in subject position (cf. 3.2), but no languages where only definites and weak indefinites can occur in subject position. This is reflected in the ordering on the definiteness scale used for harmonic alignment in section 3.2, repeated here as (49).

(49) Definite (Def) > Strong-Indefinite (SI) > Weak-Indefinite (WI)

In Danish, strong indefinites further behave like definites in that they are excluded from the pivot position, cf. the discussion of (46) and (48a) above. In terms of the OT analysis, this indicates that *EXPLETIVE outranks *SU/SI:

(50)

$<V(x), x=DP_{si}>$	SUBJECT	*EXPLETIVE	*SU/SI
a. ☞ [$_{IP}$ DP$_{si}$ [$_{VP}$ V t]]			*
b. [$_{IP}$ EXPL [$_{VP}$ V DP$_{si}$]]		*!	
c. [$_{VP}$ V DP$_{si}$]	*!		

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[33]Diesing's terminology is different. Weak indefinites correspond roughly to her 'cardinal' indefinites, and strong indefinites to her 'presuppositional' indefinites.

Weak indefinites typically occur in pivot position, but may also appear in subject position ((52) is from the corpus):

(51)   Der   skal   oprettes   **en ny   stærk præsidentpost**   til Gorbatjov
               there must create.PASS a   new strong president.position for Gorbachev
               '*A new, strong presidential position must be created for Gorbachev.*

(52)   **En ny   stærk præsidentpost**   skal   oprettes   til Gorbatjov.
               a   new strong president.position must create.PASS for Gorbachev
               '*A new, strong presidential position must be created for Gorbachev.*'

In both sentences the indefinite receives a weak, existential interpretation, taking narrow scope with respect to the modal *skal* ('must'). To model this syntactic optionality I use an ordered local tie (notated ≪ ≫) between the constraint against weak indefinite subjects (*SU/WI) and *EXPLETIVE:

(53)   SUBJECT ≫ *SU/WI ≪   ≫ *EXPLETIVE ≫ *SU/SI ≫ *SU/DEF

The tie between *SU/WI and *EXPLETIVE allows a weak indefinite to surface in pivot position or in subject position. Technically, "the output of a set of *tied* constraints is the union of the outputs of every possible ranking of those constraints" (Pesetsky (1998, 372); see also Müller (1999) and Asudeh (2001, 259–71) on optionality in OT). The effect of the tie is illustrated in the evaluation in (54), where the internal argument is a weak indefinite.

(54)

$<V(x), x=DP_{wi}>$		SUBJECT	*SU/WI	*EXPLETIVE	*SU/SI
a.	☞ [IP EXPL [VP V DP$_{wi}$]]			*	
b.	☞ [IP DP$_{wi}$ [VP V t]]		*		
c.	[VP V DP$_{wi}$]	*!			

The expletive candidate in (54a) is optimal in evaluations in which *SU/WI outranks *EXPLETIVE, whereas the non-expletive candidate in (54b) is optimal when *EXPLETIVE outranks *SU/WI.

     While weak indefinites are possible in both positions, a closer look at the corpus data reveals some differences. Indefinites in pivot position are typically used to introduce a new discourse referent, which is picked up in subsequent discourse (e.g. by a definite noun phrase or pronoun). As for weak indefinites in subject position, they are rarely referred to again in subsequent discourse.[34] Consider the corpus excerpt in (55), which occurs in a newspaper article about a priest's decision to leave his job. The weak indefinite subject occurs in (55b), and its referent (an iron frame) is not referred to again in the article. (For readability I give the preceding and following text in English only.)

(55)   a.   After 10 years as priest in the parish of Verninge, the 46-year old Niels Bøg Mortensen has decided to leave his job. The large rectory has been replaced by a small garden shed, and an open dining room under a green tarp.

          b.   **Et jernskelet** står   parat til opførelsen   af en mere varig   bolig,   en skurvogn.
                   an iron.frame   stands ready to construction.DEF of a   more permanent living.place, a   trailer
                   '*An iron frame is ready for the construction of a more permanent living arrangement, a trailer*'

          c.   The address is secret, though the nearby fields give away that we are in Fyn; only south east of Odense does one find such a beautiful view.

Another example is given in (56), which is part of an interview with the Danish rock star Thomas Helmig which takes place back stage during intermission. Again the referent of the weak indefinite subject in (56c) (an ice cold beer) is not referred to again in the rest of the article.

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[34]Hotze Rullmann points out (personal communication, April 2001) that this is also the case in Dutch.

(56) a. 'Now it's about the music, and one must concentrate to do one's best every time. I don't think much about the future. It's happening here and now' says Thomas, and flips back his curly hair that's damp with heat.

   b. In the changing room the plates with fruit and sandwiches are emptied rapidly and from the shower an arm comes out searching.

   c. **En iskold bajer** forsvinder bag   forhænget.
       an ice.cold beer   disappears behind curtain.DEF
       'An ice cold beer disappears behind the shower curtain'

   d. The band call themselves *Thomas Helmig Brothers*, and when on tour they feel like brothers.

It is as if these weak indefinite subjects do not introduce a discourse referent at all. Instead the clauses they occur in seem to present the event as an indivisible whole, rather than singling out the referent of the subject DP as a subject of predication. Thus (55b) seems to present the scenario with the iron frame as a situation where the whole is more important than the parts. Similarly, (56c) presents the disappearing of the beer behind the shower curtain as one complex event, much like a snap-shot would.

There is also evidence of stylistic effects in the distribution of weak indefinite subjects, in particular parallelism effects. The example in (52) above occurs in a string of sentences of the syntactic shape $[\text{DP}_{Subj} \text{ V}_{passive}]$ (for readability I give only the English translations):

(57) a. The big bureacracies must be diminished

   b. The time in office for party officials must be limited

   c. The state councils, the soviets, must be given more power

   d. A new presidential post must be created for Gorbachev   (= (52))

Asher et al. (1999) argue that inter-sentential parallelism constraints affect the interpretation of VP-ellipsis constructions. Perhaps similar constraints affect the choice of expletive or non-expletive constructions when the grammar allows both.

I do not attempt to account for these differences between weak indefinites in pivot and subject position formally, since it is not clear to me whether they reflect grammatical principles or pragmatically motivated tendencies of language use. In the OT analysis I thus maintain the tie between *Su/WI and *Expletive:

(58)   Subject ≫ *Su/WI ≪ ≫ *Expletive ≫ *Su/SI ≫ *Su/Def

4   Overriding the Definiteness Effect

The data considered so far could be accounted for in terms of an inviolable constraint against definites and strong indefinites in pivot position (this is essentially what is suggested in Enç (1991)). There is however evidence that the definiteness effect can be overridden, allowing definite and strong indefinites in pivot position under certain circumstances. In this section I discuss two such cases, and propose that in both instances the absence of a definiteness effect is the result of the pivot being unable to move to subject position. Such data are not accounted for by an inviolable constraint against definite and strong indefinite pivots, but are entirely consistent with the logic of the OT analysis proposed here, which is that expletive constructions are possible when the corresponding non-expletive construction is impossible or dispreferred. Thus expletive constructions are possible with weak indefinite pivots, because these are dispreferred in subject position, but impossible with definite and strong indefinite pivots, because these are preferred in subject position. This predicts that if a pivot DP is unable to move to subject position for some reason, it will be possible to insert an expletive in Spec-IP and leave the DP in pivot position, irrespective of its definiteness, overriding the definiteness effect. The first case involves expletive constructions where the pivot is a prepositional phrase and the second involves expletive constructions with two internal arguments.

4.1 Prepositional pivots

As observed above, definite pivots are normally impossible:

(59)   a. *Der   blev   skubbet **vognen**
            there became pushed cart.DEF

        b. *Der   blev   bygget **huset**
            there became built   house.DEF

        c. *Der   blev   spist **kagen**
            there became eaten cake.DEF

Above, this is analysed as the result of a preference for the definite DP to move to subject position, as in (60).

(60)   a. **Vognen**$_i$ blev   skubbet (på plads) t_i
            cart.DEF became pushed (in place)
            'The cart was pushed (in place)'

        b. **Huset**$_i$ blev   bygget t_i
            house.DEF became built
            'The house was built'

        c. **Kagen**$_i$ blev   spist t_i
            cake.DEF became eaten
            'The cake was eaten'

However, when the pivot DP is inside a prepositional phrase there is no definiteness effect. Compare (59) and (61):[35],[36]

(61)   a. Der blev   skubbet **til vognen**
            there became pushed to cart.DEF
            'The cart was being pushed at'

        b. Der blev   bygget **på huset**
            there became built   on house.DEF
            'The house was being worked on'

---

[35]Similar observations are made for Dutch by Safir (1987, 78) and for French by Belletti (1988, 8). Safir argues (pp. 82 – 4) that there is no definiteness effects on pivots embedded in a prepositional phrase, because these pivots do not share Case with the expletive, and there is no co-indexing that could cause a Principle C violation (cf. section 2.1.2). Belletti argues (pp. 8ff) that the definiteness effect is due to the pivot being assigned partitive Case by V, a Case which is compatible only with indefinite DPs. When the pivot DP is embedded inside a prepositional phrase, it is assigned Case by the preposition, and no definiteness restriction applies. I too pursue a Case analysis, but my proposal differ from those of Safir and Belletti.

[36]The preposition affects the aspectual interpretation of the sentence, inducing an atelic or imperfective interpretation of the event. This is shown by the fact that these prepositional expletive constructions can occur with adverbs of the 'for an hour'-type, but not with adverbs of the 'in an hour'-type (Dowty (1979, 56–60), see also Kiparsky (1998) and references cited there):

  i.   (a) Der blev   skubbet til vognen i   /*på en time
            there became pushed to cart.DEF for / in an hour

      (b) Der blev   bygget på huset   i   /*på en måned
            there became built   on house.DEF for / in a   month

      (c) Der blev   spist af kagen   i   /*på en time
            there became eaten of cake.DEF for / in an hour

In contrast the sentences in (ii), where no preposition is present, have a telic interpretation, and allow only 'for an hour'-type adverbs.

  ii. (a) Vognen blev   skubbet (på plads) *i / på en time
            cart.DEF became pushed (in place) for / in an hour

       (b) Huset   blev   bygget *i   / på en måned
            house.DEF became built   for / in a   month

       (c) Kagen   blev   spist *i   / på en time
            cake.DEF became eaten for / in an hour

c. Der blev spist **af kagen**
   there became eaten of cake.DEF
   'Some of the cake was eaten'

Given the analysis laid out above, it is relevant to consider the possibility of moving the pivot DP to subject position. As shown in (62), this is not allowed in Danish.

(62) a. ***Vognen**$_i$ blev skubbet **til t**$_i$
         cart.DEF became pushed to

   b. ***Huset**$_i$ blev bygget **på t**$_i$
         house.DEF became built on

   c. ***Kagen**$_i$ blev spist **af t**$_i$
         cake.DEF became eaten of

This is the so-called pseudo passive construction, where a DP moves to subject position from within a prepositional phrase. This construction is possible in English with certain pragmatic restrictions (Davison, 1980, 44ff), but generally impossible in Danish (Herslund, 1984, 49–52). The question is what blocks this movement when a preposition is present (62), but allows it when no preposition is present (60). One possibility is that movement of the pivot DP in (62) violates a constraint against preposition stranding. There are, however, grammatical instances of preposition stranding in Danish, as shown in (63).

(63) a. **Hvem**$_i$ åbnede du døren **for t**$_i$?   [interrogative]
         Who opened you door for
         'Who did you open the door for?'

   b. Jeg kender den mand **som**$_i$ hun solgte hesten **til t**$_i$.   [relative clause]
         I know the man OP she sold horse.DEF to
         'I know the guy she sold the horse to'

   c. [**Mexikansk mad**]$_i$ er hun helt vild **med t**$_i$ [topicalization]
         Mexican food is she totally crazy with
         'Mexican food she's totally crazy about'

This indicates that preposition stranding *per se* is not impossible. Notice though, that the grammatical examples of preposition standing all involve movement to Spec-CP:[37]

(64) a. [$_{CP}$ **Hvem**$_i$ åbnede$_j$ [$_{IP}$ du t$_j$ [$_{VP}$ t$_j$ døren **for t**$_i$?]]]

   b. Jeg kender den mand [$_{CP}$ **som**$_i$ [$_{IP}$ hun [$_{VP}$ solgte hesten **til t**$_i$]]]

   c. [$_{CP}$ [$_{DP}$**Mexikansk mad**]$_i$ er$_j$ [$_{IP}$ hun t$_j$ [$_{CP}$ helt vild **med t**$_i$]]]

One of the properties of Spec-CP is that it is not a Case position. Thus in (63) the element that moves to Spec-CP is assigned Case in its base position (sister-of-P^0), namely accusative Case from P^0. Since no Case is assigned to Spec-CP, the DP is assigned Case exactly once. In the grammatical expletive constructions in (61) the pivot DP is likewise assigned accusative Case by the preposition, and the expletive is assigned nominative by finite I^0. Moving the pivot DP from sister of P to Spec-IP, as in (62), results in the pivot being assigned Case twice: accusative by P^0 in its base-position and nominative by I^0 in its surface. I propose that such double Case assignment is ruled out by the CASE constraint in (65).

(65) CASE: an overt DP is assigned Case exactly once.

This constraint is satisfied in the examples of preposition stranding by movement to Spec-CP in (63), since Spec-CP is not a Case position, but violated in the pseudo-passive passives in (62), since Spec-IP is a Case position. The fact that pseudo passives are ungrammatical in Danish, whereas the corresponding expletive constructions in (61) are grammatical, indicates that in Danish CASE outranks *EXPLETIVE:

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[37]There is generally no verb movement in embedded clauses, hence the subject precedes the finite verb in the relative clause in (64b).

(66)

$< V_{passive}(x), x= [P\ DP_{def}] >$		Subject	Case	*Expletive	*Su/Def
a.	$[_{IP}\ DP_{def}\ v\ [_{VP}\ V\ [_{PP}\ P\ t\ ]]]$		*!		*
b.	☞ $[_{IP}\ \textsc{Expl}\ v\ [_{VP}\ V\ [_{PP}\ P\ DP_{def}\ ]]]$			*	
c.	$[_{IP}\ v\ [_{VP}\ V\ [_{PP}\ P\ DP_{def}\ ]]]$	*!			

Candidate (66a) is the pseudo-passive candidate and violates the highranked Case constraint, since the DP is assigned Case both by P^0 and by I^0. Insertion of an expletive – as in (66b) – eliminates double Case assignment: the expletive is assigned nominative Case in Spec-IP and the DP is assigned accusative Case in its PP-internal position. The Case constraint outranks *Expletive, favoring the expletive candidate in (66b) over the non-expletive candidate in (66a). The candidate in (66c) is ruled out by the Subject constraint. Since movement to subject position is ruled out by the Case constraint in this structure, the definiteness of the pivot is irrelevant for the evaluation: even though the pivot would make a good subject in terms of its definiteness properties, it is prevented from moving to subject position by the Case constraint, leaving the expletive construction optimal, despite the definite pivot.

The Case analysis of pseudo-passives raises an important question: how is movement to subject position possible in regular passives, as in (67), given that it is possible for the pivot to get Case from V in its base position, as in (68)?

(67)   **Kagen**$_i$ blev   spist $\mathbf{t}_i$
        cake.DEF became eaten
        ‘The cake was eaten’

(68)   Der   blev   spist **en kage**
        There became eaten a   cake
        ‘There was a cake eaten’

I suggest that (67) is possible because V is an optional Case assigner: V may assign accusative Case to its sister (as in (68)), or it may not assign Case, as in (67). A similar proposal is made for English in Hale and Keyser (1986, 3ff). In contrast, a preposition obligatorily assigns Case to its complement.

4.1.1   Topicalization

If the Case analysis of pseudo-passives is correct, we predict that a pivot DP may move out of a prepositional expletive construction as long as it moves to a non-Case position, e.g. to Spec-CP. This prediction is borne out as shown by the topicalization structure in (69).

(69) $[_{CP}$ **Kagen**$_i$ blev$_j$ $[_{IP}$ der t_j $[_{VP}$ spist af $t_i]]]$
            cake.DEF became   there   eaten   of
        ‘The cake that was being eaten’

The presence of the expletive in Spec-IP is crucial. Compare (69) with the ungrammatical pseudo-passive, where the pivot has moved to Spec-IP.

(70)   *$[_{IP}$ **Kagen**$_i$ blev $[_{VP}$ spist **af** t_i]]
            cake.DEF became   eaten of

I assume that movement of topic-marked constituents to Spec-CP is forced by the Topic constraint in (71):[38]

(71)   Topic: A topic-marked element is in Spec-CP

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[38]See also the OT analyses of A-bar movement in Sells et al. (1996), Baković (1998), and Vikner (2001).

The TOPIC constraint is ranked high, together with SUBJECT and CASE, as shown in (72).[39, 40]

(72)

$<V_{passive}(x)$, x= $[P\ DP_{def,top}]>$		SUBJECT	CASE	TOPIC	*EXPLETIVE	*SU/DEF
a.	$[_{IP}\ DP_{def,top}\ v\ [_{VP}\ V\ P\ t\ ]]$		*!	*		*
b.	$[_{CP}\ DP_{def,top}\ v_j\ [_{IP}\ t\ t_j\ [_{VP}\ V\ P\ t\ ]]]$		*!			*
c.	☞ $[_{CP}\ DP_{def,top}\ v_j\ [_{IP}\ \text{EXPL}\ t_j\ [_{VP}\ V\ P\ t\ ]]]$				*	
d.	$[_{IP}\ \text{EXPL}\ v\ [_{VP}\ V\ P\ DP_{def,top}\ ]]$			*!	*	
e.	$[_{IP}\ v\ [_{VP}\ V\ P\ DP_{def,top}]]$	*!		*		

In candidate (72a), $DP_{def,top}$ has moved to Spec-IP, satisfying SUBJECT, but violating TOPIC (the topic-marked element is not in Spec-CP) and CASE ($DP_{def,top}$ is assigned Case twice). In (72b), $DP_{def,top}$ has moved on to Spec-CP satisfying TOPIC, but still violating CASE. The SUBJECT constraint is satisfied by the trace of the overt DP (cf. footnote 22). In (72c) (= (69) above), $DP_{def,top}$ has moved directly to Spec-CP (satisfying TOPIC) and an expletive appears in Spec-IP satisfying the SUBJECT constraint. Here CASE also is satisfied: the expletive is assigned nominative in Spec-IP and $DP_{def,top}$ is assigned accusative in its base-position. In (72d) and (72e), $DP_{def,top}$ stays in its base-generated position violating TOPIC. The ranking of CASE over *EXPLETIVE is thus what causes the expletive to be present in (69) above, despite the presence of a definite pivot DP.

Consider next topicalization of pivots that are not inside a prepositional clause. We know from 3.3 that such pivots move to subject position when definite. Above I suggested that this type of movement does not violate the CASE constraint because V, unlike P, is an optional Case assigner. If this is so, I predict that no expletive is possible when topicalizing a definite pivot DP. This prediction is correct as shown in (73).

(73) a. *Kagen$_i$ blev   der   spist t$_i$
          parcel.DEF became there eaten

      b. *$[_{CP}$ **Kagen**$_i$ blev$_j$ $[_{IP}$ der t$_j$ $[_{VP}$ spist $[_{VP}$ t$_i$]]]]

Rather the definite DP moves to Spec-CP via Spec-IP, satisfying the SUBJECT constraint in the intermediate position:

(74) $[_{CP}$ **Kagen**$_i$ blev$_j$ $[_{IP}$ t$_i$ t$_j$ $[_{VP}$ spist t$_i$]]]
      cake.DEF became   eaten
      'It was the cake that was eaten'

The impossibility of an expletive in these structures is due to the ranking of *EXPLETIVE over *SU/DEF, which favors candidate (75b) over candidate (75c) in the tableau below:

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[39] Following Grimshaw and Samek-Lodovici (1998, 195) the topic status of consituents is included in the input, notated DP_{top} for a topic-marked DP.

[40] When Spec-CP is filled the finite verb (v) appears in C^0 (candidates b and c). Following Grimshaw (1997, 377ff), I assume that this is due to the OBLIGATORY-HEAD constraint that requires every projection to have a head, forcing the finite verb to move to C^0 whenever CP is projected, see also Vikner (2001). For ease of presentation OB-HD is not included in the tableau.

(75)

	$<V_{passive}(x), x=DP_{def,top}>$	SUBJECT	CASE	TOPIC	*EXPLETIVE	*SU/DEF
a.	[$_{IP}$ DP$_{def,top}$ v [$_{VP}$ V t]]			*!		*
b.	☞ [$_{CP}$ DP$_{def,top}$ v$_j$ [$_{IP}$ t t$_j$ [$_{VP}$ V t]]]					*
c.	[$_{CP}$ DP$_{def,top}$ v$_j$ [$_{IP}$ EXPL t$_j$ [$_{VP}$ V t]]]				*!	
d.	[$_{IP}$ EXPL v [$_{VP}$ V DP$_{def,top}$]]			*!	*	
e.	[$_{IP}$ v [$_{VP}$ V DP$_{def,top}$]]	*!		*		

It is exactly the same constraint ranking (*EXPLETIVE ≫ *SU/DEF) that is responsible for the definiteness effect in regular expletive constructions (compare the tableau in (75) with the one in (54)). The ungrammaticality of (73) is thus the definiteness effect resurfacing in a topicalization structure.

The topicalization analysis makes predictions about the Case of the topicalized DP, given the two different derivations posited for topicalization of a DP from sister-of-P and topicalization of a DP from sister-of-V. These are examined in the next section.

4.1.2 Case

Prepositions assign accusative Case, whereas Spec-IP assigns nominative Case (see 2.1.2 above):

(76) Jeg skulle være taget med **hende** / ***hun**
I   should be   taken with her   / she
'I should have gone with her/*she'

(77) **Hun** / ***hende** ville   nok   savne musikaftenerne
she   / her   would probably miss   music.evenings
'She/*her would probably miss the evenings playing music'

We thus expect topicalization that proceeds through Spec-IP to result in the topicalized DP bearing nominative Case, whereas topicalization directly from sister-of-P to Spec-CP to result in the topicalized DP bearing accusative case. These are exactly the morphological facts, as shown in (78) and (79), respectively.

(78) a. **Hende** / ***hun** blev   der   grinet   af
her   / she   became there laughed at
'She was the one that was laughed at'

b. [$_{CP}$ Hende$_i$ blev$_j$ [$_{IP}$ der t$_j$ [$_{VP}$ grinet [$_{PP}$ af t$_i$]]]]

(79) a. **Hun** / ***hende** blev   fyret
She / her   became fired
'She was the one that was fired'

b. [$_{CP}$ Hun$_i$ blev$_j$ [$_{IP}$ t$_i$ t$_j$ [$_{VP}$ fyret t$_i$]]]

When an expletive is present the topicalized element is assigned accusative Case in its base-position by P^0 (78). When no expletive is present, the topicalized element moves through Spec-IP where it is assigned nominative Case by I^0 (79).[41]

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[41] Recall from above that the verb does not assign Case to its complement when the complement moves to another Case position.

4.2 Expletive constructions with two internal arguments

There is at least one other analysis that takes the definiteness effect to arise from an unnecessary insertion of an expletive, namely the analysis of the Dutch expletive construction proposed in Bennis (1986, 221–29). Bennis argues (p. 225) that there is a pragmatic condition, the EMPTY PRESUPPOSITION CONDITION (EPC), requiring every clause to have at least one presuppositional element. All definite DPs are presuppositional. The expletive *er* 'there' counts as presuppositional by virtue of being a pronominal (p. 223), and can be inserted to satisfy the EPC but "only if there is no constituent with that [presuppositional LHM] function present" (Bennis, 1986, 225). Thus if there is a definite DP present in the clause, no expletive can be inserted, accounting for the lack of expletive constructions with definite pivot DPs. This line of analysis is closely related to the one pursued in the present paper, though the two differ in what drives expletive insertion: satisfaction of a pragmatic principle (the EPC) vs. a syntactic requirement (the SUBJECT constraint). The crucial difference is that the EPC is satisfied by any definite DP in the clause, whereas the SUBJECT constraint targets a specific position (Spec-IP). Under Bennis' anlysis an expletive is excluded by the presence of a definite DP in any position in the clause. In contrast, the present analysis predicts that only a definite DP that is free to move to subject position excludes an expletive. This difference is crucial when considering definiteness effects in expletive constructions with two internal arguments. Recall from 2.2 above that in this construction the second argument (the theme) must be indefinite, whereas the first argument (the beneficiary) may be indefinite or definite:

(80) a. *Der   tilfaldt den ældste datter   den store pengesum
          there to-fell the oldest daughter the large money-sum

      b. *Der   tilfaldt en af mine venner den store pengesum
          there to-fell one of my   friends the large money-sum

(81) a. Der   tilfaldt den ældste datter   en stor   pengesum
          there to-fell the oldest daughter a   large money-sum
          'The oldest daughter received a large sum of money'

      b. Der   tilfaldt en af mine venner en stor   pengesum
          there to-fell one of my   friends a large money-sum
          'A friend of mine received a large sum of money'

The ungrammaticality of the expletive constructions in (80) is predicted by Bennis's analysis: each clause contains a definite (i.e. presuppositional) DP which satisfies the ECP, and since an expletive can only be inserted when necessary to satisfy the ECP, no expletive is possible in these examples. The ungrammaticality of expletive constructions with a definite theme argument is also predicted under the present analysis, given that it is possible to move the theme argument to Spec-IP, as shown in (82).[42]

(82) a. Den største pengesum   er retfærdigvis tilfaldet den ældste datter
          the biggest money-sum is justly   to-fallen the oldest daughter
          'The largest sum of money was in all fairness given to the oldest daughter'

      b. [IP [Den største pengesum]$_i$ er [VP retfærdigvis[VP tilfaldet den ældste datter t$_i$]]]

We can thus understand the ungrammaticality of an expletive construction with a definite theme argument (cf. (80)), as a consequence of the preference for the definite argument to move to subject position, obviating the need for an expletive (cf. the tableau in (85) below).

The possibility of a definite benefactive argument in these expletive constructions, cf. (81a), is a problem for Bennis' analysis. The definite benefactive argument satisfies the EPC, so it should not be possible to insert an expletive, contrary to fact. On the present analysis the possibility of a definite DP in an expletive construction is tied to the impossibility of moving this DP to Spec-IP. I thus predict that the benefactive argument cannot move to Spec-IP. This is correct, as shown in (83).

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[42]I use a complex tense form to eliminate an alternative derivation, where the theme argument has moved to Spec-CP, the beneficiary to Spec-IP with the finite verb to C. The adverb marks the left edge of the VP (Vikner, 1995, 46–8), showing that the beneficiary is in a VP-internal position in (82). For simplicity, I assume that the finite auxiliary *er* ('is') is base-generated in I^0, rather than heading its own VP and moving from there to I^0.

(83) a. *Den ældste datter er retfærdigvis tilfaldet den største pengesum
      the oldest daughter is justly   to-fallen the biggest money-sum

   b. *[IP [Den ældste datter]$_i$ er [VP retfærdigvis [VP tilfaldet t$_i$ de største pengesum]]]

The reason, I suggest, is Case: the beneficiary argument is assigned inherent Case in its base position (cf. 2.2) and movement to Spec-IP results in double Case assignment in violation of the CASE constraint. The theme argument may be assigned structural Case by V as in (81a). However, structural Case assignment by V is optional, and movement to another Case position (Spec-IP) is possible, as in (82). The absence of a definiteness effect on the beneficiary argument is due to the impossiblity of moving this argument to Spec-IP: the non-expletive competitor in (84b) is ruled out by the CASE constraint, and the expletive candidate in (84a) emerges as optimal:[43]

(84)

	$<V(x,y)$, x=DP$_{def,ben}$, y=DP$_{wi,th}$ $>$	Subject	Case	*Su/Wi	*Expletive	*Su/Def
a.	☞ [IP EXPL [VP V DP$_{def,ben}$ DP$_{wi,th}$]]				*	
b.	[IP DP$_{def,ben}$ [VP V t DP$_{wi,th}$]]		*!			*
c.	☞ [IP DP$_{wi,th}$ [VP V DP$_{def,ben}$ t]]]			*		
d.	[IP [VP V DP$_{def,ben}$ DP$_{wi,th}$]]	*!				

The tie between *Su/WI and *EXPLETIVE yields candidate c (where the indefinite theme argument has moved to Spec-IP) as a second winner. This candidate is grammatical, but subject to the discourse factors discussed in 3.4 above.

    When both arguments are definite, the expletive candidate (85a) is ruled out by the candidate in (85c) where the theme argument has moved to subject position. This is due to the ranking of *EXPLETIVE over *SU/DEF, as the evaluation in (85) shows.

(85)

	$<V(x,y)$, x=DP$_{def,ben}$, y=DP$_{def,th}$ $>$	Subject	Case	*Expletive	*Su/Def
a.	[IP EXPL [VP V DP$_{def,ben}$ DP$_{def,th}$]]			*!	
b.	[IP DP$_{def,ben}$ [VP V t DP$_{def,th}$]]		*!		*
c.	☞ [IP DP$_{def,th}$ [VP V DP$_{def,ben}$ t]]]				*
d.	[IP [VP V DP$_{def,ben}$ DP$_{def,th}$]]	*!			

Topicalization repeats the pattern found with passive expletive constructions, so I only sketch the analysis (see 4.1.1 above for details). The beneficiary argument can be topicalized only when an expletive fills Spec-IP:

(86) a. Den ældste datter er **der** retfærdigvis tilfaldet en stor pengesum
      the oldest daughter is there justly   to-fallen a large money-sum

   b. [CP [Den ældste datter]$_i$ er$_j$ [IP **der** t$_j$ [VP retfærdigvis [VP tilfaldet t$_i$ en stor pengesum]]]]

(87) a. *Den ældste datter er retfærdigvis tilfaldet en stor pengesum
      the oldest daughter is justly   to-fallen a large money-sum

   b. [CP [Den ældste datter]$_i$ er$_j$ [IP **t**$_i$ t$_j$ [VP retfærdigvis [VP tilfaldet t$_i$ en stor pengesum]]]]

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[43]Thematic roles are subscripted on the DP arguments in the input (ben = beneficiary; th = theme).

This is because movement of the beneficiary argument through Spec-IP, as in (87), violates the CASE constraint. In contrast, topicalization of the theme argument does not allow an expletive:

(88)   a.   *Den store pengesum er **der** retfærdigvis tilfaldet den ældste datter
            the big moneysum is there justly   to-fallen the oldest daughter

        b.   *[$_{CP}$ [Den store pengesum]$_i$ er$_j$ [$_{IP}$ **der** t$_j$ [$_{VP}$ retfærdigvis [$_{VP}$ tilfaldet den ældste datter t$_i$]]]]

(89)   a.   Den store pengesum er retfærdigvis tilfaldet den ældste datter
            the big moneysum is justly   to-fallen the oldest daughter

        b.   [$_{CP}$ [Den store pengesum]$_i$ er$_j$ [$_{IP}$ **t**$_i$ t$_j$ [$_{VP}$ retfærdigvis [$_{VP}$ tilfaldet den ældste datter t$_i$]]]]

The expletive is needed in (86) to avoid a violation of CASE (see the tableau in (72)). The expletive is excluded in (88) due to *EXPLETIVE outranking *SU/DEF (the tableau in (75)).

Passive ditransitives   There is another expletive construction with two post-verbal DP arguments which involves the passive form of ditransitive verbs like *skænke* 'give'. Like the active double object constructions examined above, these allow a definite beneficiary, while the theme argument must be indefinite:

(90)   a.   Der blev skænket biblioteket en større samling sjældne bøger
            there became given library.DEF a larger collection rare books
            'The library was given a rather large collection of rare books'

        b.   *Der blev skænket biblioteket den større samling sjældne bøger
            there became given library.DEF the larger collection rare books

Under the analysis laid out above we predict that the beneficiary cannot move to subject position, accounting for the lack of definiteness effects in the corresponding expletive construction. However, it is in fact possible to move this argument to subject position, as shown in (91).

(91)   Biblioteket blev skænket en større samling sjældne bøger
       library.DEF became given a larger collection rare books
       'The library was given a collection of rare books'

The fact that both (91) and the corresponding expletive construction in (90a) are grammatical presents a problem for the analysis. At present I have no solution to this problem.

5   Preposed Locative Constructions

Danish has another construction that exhibits definiteness effects. In this construction a locative PP occurs clause-initially and the argument DP follows the main verb. The post-verbal DP can be indefinite, but not definite as shown below:

(92)   a.   I døren kan åbnes **en** lille luge
            in door.DEF can open.PASS a little hatch
            'In the door there is a little hatch that can be opened'

        b.   *I døren kan åbnes **den** lille luge
            in door.DEF can open.PASS the little hatch

(93)   a.   I skoven har boet **mange trolde**
            in forest.DEF has lived many trolls
            In the forest (there) have lived many trolls'

        b.   *I skoven har boet **alle troldene**
            in forest.DEF has lived all trolls.DEF

I argue that these constructions and the associated definiteness effect on the post-verbal argument, can also be understood as a strategy for avoiding weak indefinite subjects. Instead of inserting an expletive in subject position, a locative PP is pressed into service as subject, and the indefinite DP appears in its base-generated position, as in (92a) and (93a). When the internal argument DP is definite there is nothing to force the PP into subject position. Rather the DP itself moves into Spec-IP, excluding preposed locative constructions with a definite DP argument, as in (92b) and (93b).

In section 5.1, I propose a syntactic structure for preposed locative constructions. Following Bresnan's (1994) analysis of locative inversion in English, I argue that the preposed locative PP is a topic, and as such forced to move to Spec-CP by the TOPIC constraint. In 5.2, I analyze definiteness effects in preposed locative constructions, employing a constraint against locative PPs in subject position. In 5.3, I show that this constraint can be violated to avoid a weak indefinite subject, yielding a preposed locative construction. I further show how this construction alternates with an expletive construction, and propose an analysis that allows both. Section 5.4 discusses the restrictions on the preposed PP, and suggests how to extend the OT analysis to account for these. Finally, 5.5 considers locative inversion in English, which differs from the preposed locative construction in not exhibiting definiteness effects, and suggest that this difference is due to a structural difference between the two constructions.

5.1 The syntactic structure of preposed locative constructions

I propose that that the preposed locative construction has the structure in (94), where the locative PP is base-generated in Spec-IP, but undergoes topic movement to Spec-CP:

(94)
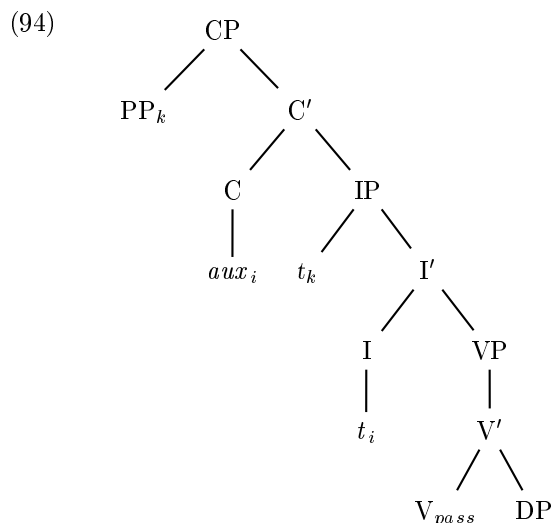
The finite auxiliary moves from I^0 to C^0, yielding the characteristic verb second order (Vikner, 1995, 42). As in expletive constructions, the internal argument DP is base-generated in the direct object position (sister-of-V). Evidence that the locative PP must topicalize comes from the impossibility of inversion with a finite verb in polar questions (cf. the analysis of polar questions in (8) above):

(95)   a. *Kan [**i døren**] åbnes   en lille luge?
            can in door.DEF open.PASS a   little hatch

       b. *[CP OP kan$_i$ [IP i døren t$_i$ [VP åbnes en lille luge?]]]

If the locative PP were allowed to stay in Spec-IP we would expect (95) to be grammatical, cf. the grammatical inversion with an expletive subject in (96).

(96)   a. Kan **der** åbnes   en lille luge?
            can there open.PASS a   little hatch

       b. [CP OP kan$_i$ [IP der t$_i$ [VP åbnes en lille luge?]]]

Bresnan (1994, 106–8) makes a similar argument for locative inversion structures in English, which also do not allow the locative to surface in second position:[44]

(97)   *Was among the ruins found a skeleton   [= Bresnan's ex. (99b)]

As discussed in 5.5 below, the two constructions differ in the position of the post-verbal DP. In the English construction, the post-verbal DP is adjoined to VP. In the Danish construction it is in the direct object position.

5.2   Definiteness effects in preposed locative constructions

Following the general logic of the OT analysis, the ungrammaticality of a preposed locative constructions with a definite post-verbal DP – as in (98) – is due to the possibility of moving this DP to subject position, as shown in (99).

(98)   a. *I døren   kan åbnes   den lille luge
             In door.DEF can open.PASS the little hatch

         b. *[$_{CP}$ [I døren]$_j$ kan$_i$ [$_{IP}$ t$_j$ t$_i$ [$_{VP}$ åbnes den lille luge]]]

(99)   a.   I døren   kan den lille luge åbnes
             In door.DEF can the little hatch open.PASS

         b.   [$_{CP}$ [I døren] kan$_i$ [$_{IP}$ [den lille luge]$_j$ t$_i$ [$_{VP}$ åbnes t$_j$]]]

The grammatical structure in (99) violates the constraint against definite subjects, *SU/DEF. The ungrammatical structure in (98) must thus violate some other constraint that outranks *SU/DEF. I suggest that the relevant constraint is a markedness constraint against locative PPs in subject position, as defined in (100).

(100)   *SU/LOC: the maximal constituent in Spec-IP is not a locative PP [45]

This constraint is decisive in the evaluation in (101), where the input contains a passive verb with a definite DP argument and a topic-marked locative PP.

(101)

	$<V_{passive}(x)$, x=DP$_{def}$, PP$_{loc,top}$ $>$	SUBJECT	TOPIC	*SU/LOC	*SU/DEF
a.	[$_{IP}$ PP$_{loc,top}$ v [$_{VP}$ V DP$_{def}$]]		*!	*	
b.	[$_{CP}$ PP$_{loc,top}$ v$_j$ [$_{IP}$ t$_j$ [$_{VP}$ V DP$_{def}$]]]	*!			
c.	[$_{CP}$ PP$_{loc,top,i}$ v$_j$ [$_{IP}$ t$_i$ t$_j$ [$_{VP}$ V DP$_{def}$]]]			*!	
d.	☞ [$_{CP}$ PP$_{loc,top}$ v$_j$ [$_{IP}$ DP$_{def,k}$ t$_j$ [$_{VP}$ V t$_k$]]]				*

The first two candidates are ruled out by the two top-ranking constraints. In (101a) the PP is base-generated in Spec-IP, satisfying SUBJECT, but has failed to move to Spec-CP in violation of TOPIC. In (101b) the PP is base-generated in Spec-CP, satisfying TOPIC, but Spec-IP is left empty, incurring a fatal violation of SUBJECT. The last two candidates both satisfy SUBJECT and TOPIC. In (101c) the PP is base-generated in Spec-IP, but moves to Spec-CP to satisfy the TOPIC constraint. SUBJECT is satisfied by the trace in Spec-IP. However, the PP-trace violates *SU/LOC (see fn. 45), ruling out this candidate in favor of the candidate in (101d), where the definite DP has moved to Spec-IP, and the PP is base-generated in Spec-CP. The definiteness effect found

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[44]Bresnan's analysis is formalized in LFG. At f-structure the locative PP is identified as having the grammatical function SUBJECT and the discourse function TOPIC. At c-structure the PP is adjoined to the S node, which is the topic position (p. 105).

[45]I use this formulation to allow Spec-IP to contain a DP with a locative PP complement or modifier without violating the *SU/LOC constraint. I assume that traces inherit the categorical properties of the moved element, so *SU/LOC is violated by a trace of a locative PP in Spec-IP.

in preposed locative constructions is thus the result of the constraint against locative PP subjects (*Su/Loc) outranking the constraint against definite (DP) subjects.

In the previous section we saw that definite DPs are possible in expletive constructions when prevented from moving to subject position by the Case constraint. This pattern is also found in preposed locative constructions, which allow a definite post-verbal DP when embedded inside a prepositional phrase. Observe the contrast in (102).

(102)   a. *I døren   kan åbnes   den lille luge
            In door.DEF can open.PASS the little hatch

        b. I døren   kan åbnes   **for** den lille luge
            In door.DEF can open.PASS for the little hatch

This indicates that the CASE constraint outranks *Su/Loc, favoring (102b) over (102a). Further support for this ranking comes from double object constructions with a preposed locative. As shown in (103), this construction exhibits definiteness effects on the theme argument, while allowing a definite beneficiary argument, as predicted by the Case analysis.

(103)   a. *I mørket   ventede **den** lille pige **den** slemme overrakselse
            In dark.DEF awaited the little girl the bad   surprise

        b. I mørket   ventede **den** lille pige **en** slem overrakselse
            In dark.DEF awaited the little girl a   bad surprise

Thus preposed locative constructions behave like expletive constructions with respect to definite DP arguments. In the next section I examine preposed locative constructions with a weak indefinite DP argument.

5.3   Weak indefinites in the preposed locative construction

When the DP argument is a weak indefinite the situation is more complex. There are three ways of realizing a structure with a topic-marked locative PP and a weak indefinite DP argument. One option is a preposed locative construction, as in (104).

(104)   a. I døren   kan åbnes   en lille luge
            In door.DEF can open.PASS a little hatch

        b. [$_{CP}$ [I døren]$_j$ kan$_i$ [$_{IP}$ t$_j$ t$_i$ [$_{VP}$ åbnes en lille luge]]]

Here the PP is base-generated in Spec-IP and moves to Spec-CP. Alternatively, the PP can be base-generated in Spec-CP, and an expletive inserted in Spec-IP:

(105)   a. I døren   kan der åbnes   en lille luge
            in door.DEF can there open.PASS a little hatch

        b. [$_{CP}$ [I døren] kan$_i$ [$_{IP}$ der t$_i$ [$_{VP}$ åbnes en lille luge]]]

Finally, the weak indefinite DP can move to Spec-IP, and the PP be base-generated in Spec-CP:

(106)   a. I døren   kan en lille luge åbnes
            in door.DEF can a   little hatch open.PASS

        b. [$_{CP}$ [I døren] kan$_i$ [$_{IP}$ [en lille luge]$_j$ t$_i$ [$_{VP}$ åbnes t$_j$]]]

The alternation between (105) and (106) is predicted by the tie between *EXPLETIVE and *Su/WI established in section 3.4. The fact that (104) is also possible indicates a three-way tie between *Su/Loc, *EXPLETIVE, and *Su/WI:

(107)

$<V_{passive}(x), x=DP_{wi}, y=PP_{loc,top}>$		Subj	Topic	*Su/Loc	*Expletive	*Su/WI
a.	[IP PP$_{loc,top}$ v [VP V DP$_{wi}$]]		*!	*		
b.	[CP PP$_{loc,top}$ v$_j$ [IP t$_j$ [VP V DP$_{wi}$]]]	*!				
c.	☞ [CP PP$_{loc,top}$ v$_j$ [IP t t$_j$ [VP V DP$_{wi}$]]]			*		
d.	☞ [CP PP$_{loc,top}$ v$_j$ [IP EXPL t$_j$ [VP V DP$_{wi}$]]]				*	
e.	☞ [CP PP$_{loc,top}$ v$_j$ [IP DP$_{wi,k}$ t$_j$ [VP V t$_k$]]]					*

The first two candidates are ruled out by TOPIC and SUBJECT, respectively (see the discussion of the evaluation in (101) above). The last three candidates correspond to the structures in (104) though (106). They all satisfy SUBJECT and TOPIC, and each is optimal under some resolution of the tie between the three lower-ranked constraint. With three tied constraints there are six ranking resolutions:

1. *EXPLETIVE ≫ *Su/WI ≫ *Su/Loc

2. *Su/WI ≫ *EXPLETIVE ≫ *Su/Loc

3. *Su/Loc ≫ *Su/WI ≫ *EXPLETIVE

4. *Su/WI ≫ *Su/Loc ≫ *EXPLETIVE

5. *Su/Loc ≫ *EXPLETIVE ≫ *Su/WI

6. *EXPLETIVE ≫ *Su/Loc ≫ *Su/WI

Candidate (107c) – the preposed locative candidate – is optimal under the resolutions in 1 and 2. Candidate (107d) – the expletive candidate – is optimal under the resolutions in 3 and 4, and candidate (107e) – with a weak indefinite in subject position – is optimal under resolutions 5 and 6.

5.4 Restrictions on the preposed PP

So far I have dealt with the definiteness restrictions on the post-verbal DP, extending the analysis of expletive constructions to the preposed locative construction. There are also restrictions on the preposed PP. In particular, it must be locative and it must be topic marked. I discuss these in turn below, and suggest how they can be accounted for under the OT analysis.

5.4.1 Locative PPs only

In the construction without an expletive, the preposed PP must be locative in meaning. In particular, PPs expressing manner or reason are excluded, as shown in (109) and (110).[46]

(108) a. **I døren** kan åbnes en lille luge
          in door.DEF can open.PASS a little hatch

      b. [CP [i døren]$_k$ kan$_j$ [IP t$_k$ t$_j$ [VP åbnes en lille luge]]]

(109) a. ***På den måde** kan åbnes en lille luge
          in that way   can open.PASS a little hatch

      b. *[CP [på den måde]$_k$ kan$_j$ [IP t$_k$ t$_j$ [VP åbnes en lille luge]]]

---

[46]It is possible that some temporal PPs may prepose, though I have not found attested examples of this in the corpus.

(110)   a.   ***Af den grund** kan åbnes   en lille   luge
                  for that reason can open.PASS a   little hatch

           b.   [$_{CP}$ [af den grund]$_k$ kan$_j$ [$_{IP}$ t$_k$ t$_j$ [$_{VP}$ åbnes en lille luge]]]

However, manner and reason PPs can be preposed when an expletive fills the subject position:

(111)   a.   **I døren**   kan **der**   åbnes   en lille   luge
                  in door.DEF can there open.PASS a   little hatch

           b.   [$_{CP}$ [i døren] kan$_j$ [$_{IP}$ der t$_j$ [$_{VP}$ åbnes en lille luge]]]

(112)   a.   **På den måde** kan **der**   åbnes   en lille   luge
                  in   that way   can there open.PASS a   little hatch

           b.   [$_{CP}$ [på den måde] kan$_j$ [$_{IP}$ der t$_j$ [$_{VP}$ åbnes en lille luge]]]

(113)   a.   **Af den grund** kan **der**   åbnes   en lille   luge
                  for that reason can there open.PASS a   little hatch

           b.   [$_{CP}$ [af den grund] kan$_j$ [$_{IP}$ der t$_j$ [$_{VP}$ åbnes en lille luge]]]

A similar distinction between expression of location vs. manner and reason is observable in *wh*-questions in some dialects of Spanish. In these dialects, locative *wh*-phrases require subject-verb inversion, whereas *wh*-phrases expressing manner or reason do not, see (Baković, 1998, 36–40) and Gutiérrez-Bravo (2000, 19ff). These authors argue that locative phrases are more argument-like than phrases expressing reason and manner, and thus more likely to occupy an argument position, specifically Spec-IP. Following Gutiérrez-Bravo (2000) I propose an alignment analysis where the scale on grammatical relations (Subject > Non-Subject) aligns with the scale on semantic roles (Agent > Theme > Loc(ative) > Manner > Reason) to yield the constraint hierachy in (114).[47]

(114)   *S$_U$/Reason ≫ *S$_U$/Manner ≫ *S$_U$/Loc

In Danish the cut-off point is right above *S$_U$/Loc, allowing locative PPs to participate in the preposed PP construction, but not PPs expressing manner and reason. In terms of the present analysis, the constraint hierarchy in (114) is interpolated into the existing constraint ranking, as in (115).[48]

(115)   Topic   Case   Subject   *S$_U$/Reason
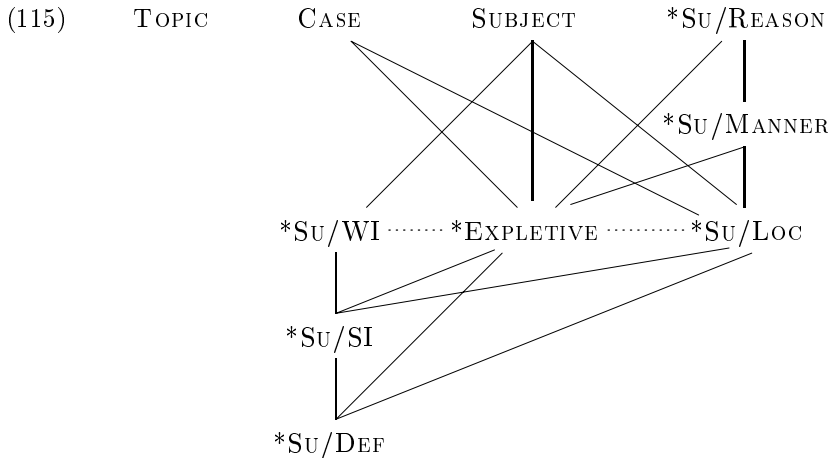
The ranking of *S$_U$/Reason and *S$_U$/Manner over *Expletive guarantees that a topicalized PP expressing reason or manner occurs with an expletive when the pivot DP stays in sister of V, (compare (109) and (110) to (112) and (113) above).

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[47] I simplify the semantic role scale to include only the categories relevant for the present analysis.

[48] For readability, I present the constraint ranking in the style of a Hasse diagram. Solid lines indicate strict domination, whereas tied constraints are connected by dotted lines. Constraints that are unranked with respect to each other are at the same horizontal level, but not connected.

5.4.2   Topic-marked PPs only

The second restriction is that locatives only get to be subjects when they are topicalized. This is what guarantees that a locative subject obligatorily moves to Spec-CP, accounting for the lack of inversion with the finite verb, cf. 5.1 above. The issue is how to prevent a non-topic locative PP from appearing in Spec-IP. One possible solution is to conjoin the constraint against locative subjects (*Su/Loc) with a constraint against subjects that are not topic-marked (*Su/Non-Topic), as in (116).

(116)   *Su/Loc &$_{XP}$ *Su/Non-Topic: locative PP subjects are topic-marked

Though this constraint might look like little more than a restatement of the facts it is not unreasonable to think that each of the component constraints exists (on *Su/Loc see above, on the connection between subject and topic, see e.g. Li and Thompson (1976) and Chafe (1976)). Together with the Topic constraint, the conjoined constraint in (116) accounts for the necessary movement of locative subjects to Spec-CP.

The obligatory topic status of the preposed PP might also shed some light on the fact that there is a strong preference for the DP inside the preposed PP to be definite, as in (117a), or a strong indefinite, e.g. a partitive DP as in (117b).

(117)   a.   I **døren**   kan åbnes   en lille   luge
                in door.DEF can open.PASS a   little hatch

         b.   I **en af dørene**   kan åbnes   en lille   luge
                in one of doors.DEF can open.PASS a   little hatch

In contrast, a preposed PP with a weak indefinite DP complement is degraded:

(118)   ??I **en dør** kan åbnes   en lille   luge
               in a   door can open.PASS a   little hatch

Recall from the discussion of weak indefinite DP subjects in section 3.3 above that these are grammatical, but subject to various discourse factors. In contrast, weak indefinite preposed PPs seem to be systematically degraded. It is very difficult to imagine a context of utterance where (118) would be felicitous. I suggest that the degradedness of a weak indefinite PP subject, compared with a weak indefinite DP subject is due to the topic status of the PP. Topics typically "refer to objects whose existence is presupposed, i.e. they identify an object or set of objects whose existence the speaker assumes the hearer is already aware of" (Gundel, 1988, 146), and thus they are typically expressed in a definite form.[49] In all the examples with topicalized PPs that I found in the DK 87-90 corpus, the PP contained a definite or partitive DP complement. These include preposed locative constructions, as well as examples where Spec-IP is filled by an expletive or a contentful DP.

5.5   On the lack of definiteness effects in locative inversion

In contrast with the locative preposing construction, locative inversion constructions in English do not exhibit definiteness effects on the post–verbal argument:

(119)   Among the guests was sitting my friend Rose   (Bresnan, 1994, p. 75, ex. (2b))

(120)   Near the waterhole stood the giraffe   (Postal, 1977, p. 149, ex. (19a))

Bresnan (1994, 85–9, 106) argues that in the English construction the post-verbal DP is adjoined to VP at c-structure due to its discourse function (identified as FOCUS at f-structure). In the Danish construction the DP is in the sister-of-V position and shows definiteness effects. Under the present analysis the correlation between position and definiteness effects can be understood as follows: an adjoined position is an A-bar-position, and Spec-IP is an A-position. Movement from an adjoined position to Spec-IP is an instance of improper movement, since it is movement from an A-bar-position to an A-position. It is thus ruled out, leaving the locative inversion as optimal despite the definiteness of the post-verbal DP. Since sister-of-V is an A position, movement to Spec-IP from this position is unproblematic.

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[49]In the case of PP topics, definiteness is not marked on the PP itself, but on the DP complement of the preposition.

This idea extends to a long-noted fact about English expletive constructions. Aissen (1975) and Milsark (1979, 194–210, 248) observe that there are two different *there*–constructions in English: one in which the post-verbal DP is inside VP and exhibit definiteness effects, and one in which the DP is outside VP (right-adjoined to VP) and does not exhibit definiteness effects. The lack of definiteness effects when the DP is in an adjoined position falls under the improper movement account sketched for locative inversion structures above.

6   Conclusion

In this paper I have proposed a novel analysis of the definiteness effect, relating it directly to the cross-linguistic preference for definite DPs in subject position. The preference for definite over indefinite subjects was formalized using the operation of harmonic alignment, deriving a constraint hierarchy on subjects which penalizes indefinite subjects more severely than definite ones. These constraints interact with constraints familiar from the generative tradition, in particular the SUBJECT constraint that require Spec-IP to be filled. An expletive can be inserted in Spec-IP to avoid a weak indefinite DP in subject position, yielding an expletive construction. In Danish, another strategy for avoiding a weak indefinite subject is the preposed locative construction, where a locative PP is pressed into service as subject. Neither of these options are available when the DP argument is definite, since definite DPs are preferred in subject position, obviating the need for an expletive or locative to fill this position.

There are, however, cases where the definiteness effect is absent, including expletive constructions where the pivot is inside a prepositional phrase. I argued that the lack of a definiteness effect in this construction is due to the fact that the preposition assigns Case to the DP. Unlike previous analyses (Safir (1987) and Belletti (1988)), the OT analysis relates the absence of a definiteness with prepositional pivots to the impossibility of pseudo passives: the CASE constraint blocks movement from sister of P to another Case position, leaving expletive insertion as the only way to satisfy the SUBJECT constraint.

This highlights a crucial property of the OT analysis, namely that expletive and non-expletive constructions compete as part of the same candidates set. Given the basic nature of constraint domination and evaluation in OT, this predicts complementarity between the two constructions: if the expletive candidate is optimal, the non-expletive candidate(s) is (are) non-optimal, and vice versa. With weak indefinite DPs, however, both constructions are grammatical (though not discourse equivalent). This syntactic optionality was analyzed in terms of a constraint tie, allowing both constructions to surface as optimal. There are, however, more challenging cases of non-complementarity, including the pattern found with definite beneficiary arguments of passive ditransitive verbs. Here the definite beneficiary can surface post-verbally in an expletive construction *or* move to subject position. This indicates that the connection between the possibility of moving the pivot DP to subject position, and the impossibility of inserting an expletive, is not as straightforward as predicted by the present analysis. More work is needed to establish what other factors might complicate this connection, and differentiate between expletive and non-expletive constructions.

Appendix: on the range of verbs in active intransitive expletive constructions in Danish

Most of the active intransitive expletive constructions cited in the literature involve unaccusative verbs, i.e. verbs not taking an external argument (Burzio (1986, 27–31), Levin and Hovav (1995)). It is a controversial issue whether unergative verbs (which do take an external argument) can also appear in this construction. Levin and Hovav (1995) suggest that in English they cannot. Others suggest that verbs that are typically considered unergatives, such as *arbejde* ('work') and *ringe* ('call'), are possible in expletive constructions, though they are then are then reinterpreted as unaccusatives, with the effect that the pivot DP is interpreted non-agentively (see e.g. Platzack (1983, 94) on Swedish and Hoekstra and Mulder (1990, 5–14) on Dutch). Finally, Sveen (1996, chapter 4) argues that in Norwegian all intransitive verbs can in principle occur in expletive constructions, without any reinterpretation or loss of agency, as long as certain semantic and pragmatic restrictions are met. I will not try to settle this question for Danish here, but for illustration I provide a list of active intransitive verbs found in (inside verbal) expletive constructions in the DK87-90 corpus.

ACTIVE INTRANSITIVE VERBS IN EXPLETIVE CONSTRUCTIONS

blive	'become'
blæse	'blow'
bo	'live (in a place)'
danne sig	'form'
danse	'dance'
dryppe	'drip'
dufte af	'smell (pleasantly) of '
eksisterer	'exist'
fare (forbi)	'rush (by)'
findes[50]	'exist'
foregå	'happen'
forekomme	'occur'
foreligge	'be available'
foresvæve	'be in the air'
fremkomme	'appear'
følge	'follow'
følge med	'accompany'
gælde	'be in force'
gro	'grow'
gå	'go/walk'
herske	'prevail'
holde parkeret	'be parked'
hænge	'hang'/'hover'
høre til	'go with/belong to'
indgå	'be included'
indkomme	'arrive'
indløbe	'arrive'
komme	'arrive'
komme ud (fra)	'come out (from)'
kravle	'crawl'
ligge	'lie'
lyde	'sound'

lugte af	'smell of'
mangle	'be missing'
opstå	'arise'
pible	'dribble'
ryge gennem	'come through (quickly)'
samle sig	'gather'
se ud til	'look like'
sidde	'sit'
sive	'trickle'
ske	'happen'
skinne	'shine'
skulle til	'be needed'
smutte	'sneak'
springe	'jump'/'spring'
strømme	'pour'
stå	'stand'
sænke sig	'descend'
trænge ned	'penetrate (downwards)'
trænge ud	'penetrate (outwards)'
udspille sig	'play out'
vanke	'await'
vente	'wait'
vokse	'grow'
være	'be'

[50]This verb has passive morphology (-*s*), but active syntax (and semantics) in modern Danish.

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