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Freezing effects and objects[1]

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This paper is an investigation of freezing effects, that is, cases where an element (e.g. an object or a subject, or an element within it) is unable to move from a certain structural position. An account of the most prominent properties of freezing in Norwegian is followed by a comparative study of primarily English and Norwegian indirect objects, with important consequences for the general approach to indirect objects. Although recent analyses capture central properties of indirect objects, they fall short of accounting for freezing properties, seen here in terms of agreement properties, most notably Case agreement. It is shown that both subjects and indirect objects disallow sub-extraction in both English and Norwegian; however, unlike English, Norwegian allows the indirect object to A-bar move. This relates to the question of whether Case is structural or inherent. As such, this paper offers a new argument in favor of Case as a central ingredient in deriving freezing effects.

1. Introduction

Since the 1960s, syntactic islands have occupied a central role within generative grammar. In recent years, some islands have been studied in terms of the freezing approach. This approach tries to elucidate the conditions which prohibit an element from taking part in any further syntactic operations after it has moved from its base position (see Wexler & Culicover 1980). Much attention has focused on the upper layers of the clause, in particular the TP–CP domain. However, in this paper I will take a closer look at the lower area of the clause, namely the area where arguments are externally merged. Specifically, I will, among other things, provide an account of the Norwegian contrasts shown in (1)–(3).[2]

[1] Parts of this paper have been presented at the NORMS Grand Meeting in Iceland in August 2007 and at the Syntax Brown Bag at New York University in December 2009, and I am grateful to the audiences for valuable comments. Thanks also to Željko Bošković, Noam Chomsky, Alex Drummond, Ángel Gallego, Elly van Gelderen, Marc Richards, Luigi Rizzi, Bridget Samuels, and two anonymous *JL* referees. Thanks are also due to Cedric Boeckx for his support and constructive suggestions, and especially to Caroline Heycock, Norbert Hornstein, Howard Lasnik and Juan Uriagereka for all their valuable comments and for ensuring that my writing is much clearer than it would otherwise have been.

[2] This is a construction similar to the *was für* construction in many Germanic languages.

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(1) *Extraction from/of subjects*

(a) [$_{CP}$ [Hva for en fyr]$_i$ gav [$_{IP}$ t_i barna pakker til bursdagen]]?
what for a guy gav children.DEF gifts for birthday.DEF
'Which guy gave children gifts for their birthday?'

(b) *[$_{CP}$ Hva$_i$ gav [$_{IP}$ [t_i for en fyr] barna pakker til bursdagen]]?
what gave for a guy children.DEF gifts for birthday.DEF

(c) [$_{CP}$ Hvem$_i$ gav [$_{IP}$ t_i barna pakker til bursdagen]]?
who gave children.DEF gifts for birthday.DEF
'Who gave the children gifts for their birthday?'

(2) *Extraction from/of indirect objects*

(a) [$_{CP}$ [Hva for en fyr]$_i$ gav [$_{IP}$ du [$_{vP}$ t_i pakker til bursdagen]]]?
what for a guy gave you gifts for birthday.DEF
'Which guy did you give gifts for their birthday?'

(b) *[$_{CP}$ Hva$_i$ gav [$_{IP}$ du [$_{vP}$ [t_i for en fyr] pakker til bursdagen]]]?
what gave you for a guy gifts for birthday.DEF

(c) [$_{CP}$ Hvem$_i$ gav [$_{IP}$ du [$_{vP}$ t_i pakker til bursdagen]]]?
who gave you gifts for birthday.DEF
'Who did you give gifts for their birthday?'

(3) *Extraction from/of direct objects*[3]

(a) [$_{CP}$ [Hva for noe]$_i$ gav [$_{IP}$ du [$_{vP}$ barna t_i til bursdagen]]]?
what for something gave you children.DEF for birthday.DEF
'What (kind of thing(s)) did you give the children for their birthday?'

(b) [$_{CP}$ Hva$_i$ gav [$_{IP}$ du [$_{vP}$ barna [t_i for noe] til bursdagen]]]?
what gave you children.DEF for something for birthday.DEF

[3] It should be noted that in Norwegian one can also extract *hvem* out of a direct object, as shown in (i).

(i) Hvem kjente han [t for noen]?
who knew he for someone
'Who did he know?'

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(c) [$_{CP}$ Hva$_i$ gav [$_{IP}$ du [$_{vP}$ barna t_i til bursdagen]]]?
what gave you children.DEF for birthday.DEF
'What did you give the children for their birthday?'

Examples (1b) and (2b) show that sub-extraction is impossible from subjects and indirect objects, whereas extraction of the entire constituent is possible ((1a, c)–(2a, c)). However, this difference is not found with direct objects, in (3).

The goal of the present paper is to show how to derive these data by adopting and developing the theory of locality proposed in Boeckx (2008c). We will see that as it currently stands the theory covers quite a range of data, but we need to make modifications in order to deal with some problematic examples and to account for a wide array of sub-extraction facts. The theory provides no unified account of why sub-extraction is bad – at least three different accounts will be shown to be necessary, which suggests that the theory does not provide a satisfactory explanation of sub-extraction. This issue will recur throughout the paper.

It will also be shown that there is a crucial difference between Norwegian and English manifested by the fact that English does not have direct counterparts of the Norwegian (2a, c). An entire section will be devoted to indirect objects and A-bar properties concerning such structures, as it turns out that this is a poorly studied area. A comparative study of such closely related languages as English and Norwegian appears to be particularly well-suited to getting a better understanding of what enables and what prevents indirect objects from A-bar moving since English and Norwegian constitute a minimal pair in this regard. Despite this difference, English and Norwegian passives are similar in that both allow the passive version of (2b). For the active cases, I will suggest that there is a difference between inherent and structural Case, where the latter makes it impossible for any syntactic object to move further after Case is checked in a particular checking domain. This does not hold when an indirect object bears inherent Case only since inherent Case does not require a checking domain. Passives require additional assumptions that I will turn to at the end of the paper.

This paper is structured as follows. Section 2 presents the background and reviews examples of extraction and sub-extraction from subjects based on Boeckx (2008c). It also deals with a problem for the theory related to movement of subjects out of finite clauses, which has not been discussed before, and carries a discussion of what to do about local subject questions. The core theoretical assumptions adopted in this paper will also be presented in the course of this section. Section 3 shows how the analysis developed in Section 2 can be extended and modified so that it can deal with direct and indirect objects, and it also discusses object shift and scrambling. Section 4 is a comparative study of English and Norwegian indirect objects and their A and A-bar properties (such as extraction from active and passive sentences,

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and sub-extraction from indirect objects). Section 5 discusses some general issues before Section 6 concludes the paper.

2. Subjects and extraction

In this section I will present various data involving extractions related to subjects. This will mainly be as a background to the main body of the paper, which centers on the properties of freezing related to direct and indirect objects. First I will look at sub-extraction from subjects, and then briefly at extraction of subjects related to *that*-trace effects. Here I will also address an empirical problem for the approach adopted in this paper that has not been addressed earlier. Finally, data on local subject questions are discussed.

2.1 *Sub-extraction from subjects*

Let us first look at English. Sub-extraction from the canonical subject position (labeled SpecTP in this paper) is impossible in English, as shown by the examples in (4).

(4) (a) *$[_{CP}$ [Which Marx brother]$_i$ did $[_{IP}$ she say $[_{CP}$ $[_{IP}$ [a biography of t_i] is going to be published/will appear this year]]]]?
(b) *$[_{CP}$ [Which Marx brother]$_i$ did $[_{IP}$ she say $[_{CP}$ that $[_{IP}$ [a biographer of t_i] interviewed her/worked for her]]]]?
(Lasnik & Park 2003: 650)

This fact has commonly been derived from Huang's (1982) Condition on Extraction Domains, and more specifically, the Subject Condition (Chomsky 1973), which says that extraction from the canonical subject position is prohibited.[4] This is further confirmed by the data in (5), where extraction is possible from a position below the canonical subject position.

(5) (a) $[_{CP}$ [Which candidate]$_i$ were $[_{IP}$ there [posters of t_i] all over the town]]?
(b) *$[_{CP}$ [Which candidate]$_i$ were $[_{IP}$ [posters of t_i] all over the town]]?
(Lasnik & Park 2003: 651)

A number of authors have argued that the canonical subject position is generally a freezing position (see Ormazabal, Uriagereka & Uribe-Etxebarria 1994; Takahashi 1994; Stepanov 2001; Boeckx 2003, 2008c: Chapter 5; Lasnik & Park 2003; Rizzi 2006; Rizzi & Shlonsky 2007).[5] There

[4] See Müller (2010) for a discussion of how to capture the CED generally within a phase-based framework. Uriagereka (1999b, to appear) pursues a different Multiple Spell-Out approach.

[5] However, Chomsky (2008) presents a radical reanalysis of the data. He argues that the determining property is the underlying base position and that the verb's argument structure

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is much cross-linguistic evidence for this view: (6) shows this for Spanish, (7) for Norwegian, (8) for Icelandic, (9) for Danish, and (10) for Swedish.[6]

(6) [$_{CP}$ [De qué conferenciantes]$_i$ te parece [$_{CP}$ que …
of what speakers CL.to.you seem.3.SG that
(Spanish)

(a) [$_{IP}$ me van a impresionar [las propuestas t_i]]]]?
CL.to.me go.3.SG to to.impress the proposals
(b) *[$_{IP}$ [las propuestas t_i] me van a impresionar]]]?
the proposals CL.to.me go.3.SG to to.impress
'Which speakers does it seem to you that the proposals by will impress me?'
(Uriagereka 1988: 118)

(7) *[$_{CP}$ Hvem$_i$ tror du [$_{CP}$ at [$_{IP}$ [brev fra t_i] kommer i morgen]]]?
who think you that letters from come in tomorrow
(Norwegian)
'Who do you think that letters from come tomorrow?'

(8) *[$_{CP}$ Hverjum$_i$ telur Jens [$_{CP}$ að [$_{IP}$ [mynd af t_i]
who believes Jens that photograph of
hangi á skrifstofu Willochs]]]?
hangs on office Willoch's
'Who does Jens believe that a photograph of hangs in Willoch's office?'

---

determines whether extraction is licit (due to properties of his phase analysis). I will not discuss this analysis, as several authors have illustrated that it does not work cross-linguistically (Broekhuis 2005, Gallego 2007, Gallego & Uriagereka 2007, Lohndal 2007a, Mayr 2007). Furthermore, Starke (2001) and Abels (2008) report examples from various languages where extraction from SpecTP is possible. Consider (i) from French and (ii) from German.

(i) [$_{CP}$ [De quel film] est-ce que [$_{IP}$ tu crois [$_{CP}$ que [$_{IP}$ [la première parte t]
of which film is-it that you think that the first part
va créer un
goes create a scandal
'Which movie do you think that the first part of would create a scandal?'
(Starke 2001: 36)

(ii) [$_{CP}$ [Von diesem Film] hat [$_{IP}$ [der erste Teil t] doch letztes Jahr einen großen
of this film has the first part PRT last year a big
Skandal ausgelöst]]. (German)
scandal caused
'The first part of this film caused a bit scandal last year.' (Abels 2008: 76)

(i) shows *wh*-extraction from SpecTP whereas (ii) shows topicalization from SpecTP. Interestingly, both of these are impossible in Norwegian, and the counterpart of (i) in English has often also been reported to be unacceptable. A more comprehensive discussion of these cases seems to be required, but it is beyond the scope of the present paper.

[6] Thanks to my informants Ken Ramshøj Christensen (Danish), and Kjartan Ottosson and Halldór Ármann Sigurðsson (Icelandic).

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(9) *[$_{CP}$ [Hvilken forfatter]$_i$ blev [$_{IP}$ [bøgerne af t_i] hurtig
which author were books.DEF of soon
udsolgt]]? (Danish)
sold.out
'Which author were books by soon sold out?'

(10) *[$_{CP}$ [Vilken kung]$_i$ hänger [$_{IP}$ [många porträtt av t_i]
which king hang many portraits of
på Gripsholm]]? (Swedish)
at Gripsholm
'Which king hang many portraits of at Gripsholm?'
(Engdahl 1982: 164)

The Spanish examples in (6) are especially revealing as the contrast shows that extraction is possible from Spec*v*P, (6a), but not from SpecTP, (6b), assuming that in Spanish post-verbal subjects stay in Spec*v*P (see e.g. Gallego 2007). This is not a peculiar feature of Spanish, however; we have already seen in (5) that this is allowed in English ((5a) is repeated in (11) for convenience):[7]

(11) [$_{CP}$ [Which candidate]$_i$ were [$_{IP}$ there [posters of t_i] all over the town]]?

So far I have illustrated that SpecTP is a freezing position. The question is why this is the case. Here I will rely on the theory put forward in Boeckx (2008c: Chapter 5). By way of introducing his theory, I will focus on (pure) extraction and then return to sub-extraction once we have an understanding of how extraction works.

Crucial to Boeckx' approach is the understanding of Case. He follows Pesetsky & Torrego (2001: 361), who define nominative Case as follows:

(12) *Nominative Case*
Nominative case is *u*T on D.

*u*T stands for an uninterpretable [T(ense)]-feature, and 'on D' means that it is present on a nominal phrase (i.e., a DP). Based on this, Boeckx (2008c: 172) formulates the domain of nominative Case as in (13). That is, (13) is the position where nominative Case is licensed.

(13) [Fin$^\circ$ $_{[+T]}$ [__ T$^\circ$ $_{[-\varphi]}$]]

[7] The same data obtains for Norwegian, as seen in (i).

(i) [$_{CP}$ [Hvilken kandidat] var [$_{IP}$ det [plakater av t] over hele byen]]?
which candidate were there posters of over whole city.DEF
'Which candidate were there posters of all over the town?'

However, as argued by Lødrup (1999), the constituent *plakater av t* is arguably a direct object in Norwegian. See his paper for arguments.

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The structure in (13) incorporates Chomsky's (2007, 2008) claim that assignment of nominative Case is dependent on a finite C, and assumes Rizzi's (1997: 288) cartography of the CP:

(14) ForceP … (TopicP) … (FocusP) … FinP TP

The φ-feature bundle on the functional head in (13) is present to indicate the presence of a Probe–Goal relation between the functional head and a DP (Boeckx 2008c: 172). Phi-features are unvalued (hence the 'minus' sign) and they get valued through subject–verb agreement. Fin° comes with a [+T]-feature from the numeration, just like T° does (not shown in (13)). Here Boeckx follows Chomsky's (2007, 2008) claim that Fin° is the relevant Case licenser and not T°.[8]

An assumption significant from the present point of view, which will become clearer as we go along, is that an item is frozen when it has checked a feature in a special position.[9] This follows from what Boeckx (2003) calls the Principle of Unambiguous Chain (PUC; see also N. Richards 2001, Rizzi 2006). The PUC says that a chain can contain at most one 'strong' position/occurrence; that is, an item can only move to one strong position. A strong position/occurrence is defined in terms of checking of a feature associated with an EPP property (Boeckx 2008c: 165). Put slightly differently, movement to the canonical subject position is movement to a strong position. Obviously, there might be other positions that bear an EPP property, and the idea is that each such position counts as a strong position.[10] If an item moves to such a position, it cannot move any further. Richards (2001) has suggested a quite similar idea. He first suggests that the EPP property of an element α gives a signal to PF that α should be pronounced in the relevant context, and then formulates a condition on what constitutes a legitimate chain at the interface. In short, Richards argues that PF must receive unambiguous instructions about which part of a chain to pronounce. The EPP property is by hypothesis one such signal that gives an unambiguous instruction to the interfaces. In summary, we see that for both Boeckx and Richards, there can only be one strong position/EPP-position per chain, and this is central to our understanding of freezing effects. However, it should be pointed out that it is not clear that the system has to be organized exactly like this: The claim about there being only one strong position per chain is obviously axiomatic.

[8] See also Bošković (2007) for a different theory where Case also is the ultimate ingredient. See Lasnik (2008), Legate (2008) and Sigurðsson (2008) for much discussion on general properties of Case and case (I use capital C to differentiate abstract and morphological case).

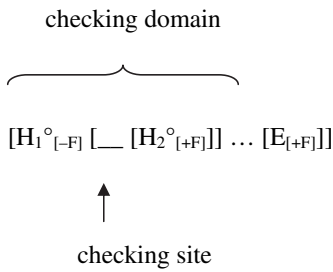
[9] This does not make the item itself an island, though Boeckx (2008c) basically claims that it does. I will return to this below.

[10] This encompasses a view of successive cyclic movement which says that successive cyclic movement is not driven directly by feature checking, as in Boeckx (2007) and Bošković (2007).

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The picture is slightly more complicated than we have seen so far, though. The present theory suggests that an element can only move to a single feature-checking site, that is, remerge once (Boeckx 2008c: 167; see also Boeckx 2003 & Bošković 2007; Ormazabal et al. 1994 contains an earlier and quite similar proposal). How does one define this single feature-checking site? On the assumption that a chain is defined by two domains, one associated with the External first-Merge position, the other with the Internal Merge position, Boeckx suggests the following characterization of what he calls a 'checking domain' (the diagram in (15) is adapted from Boeckx 2008c: 171):[11]

(15)



Here we have two functional heads, H_1° and H_2°, and there is a specifier, marked '__', where an item can undergo checking for the feature F. The original position of the element E that will remerge is also included. Crucially, this element will have to move into '__'. Unless the element E is externally merged in the '__' position in (15), movement to this position is required for E to establish a Probe–Goal relation with H_1°. If movement does not happen, a relativized minimality violation will occur: H_1, H_2 and E all share a feature and they stand in an asymmetric c-command relation. Boeckx assumes that H_1 is the Probe and that it has to probe E, and given the intervening H_2, we have a standard case of intervention or relativized minimality. The only way E can escape the minimality effect is to move above H_2, that is, to remerge in '__'; if no movement happens, the derivation crashes. Upon remerge, an unambiguous checking site, of which only one can be established per chain, has been established, as discussed above.

Although I have kept the discussion of checking domains fairly general, the reader will not fail to recognize that the configuration in (15) is similar to the canonical subject position. (16) shows a schema for the assignment of

[11] It should be noted that the curly bracket above the checking domain in (15) is non-trivial. The only worked-out definition of a checking domain in the literature is set-theoretic (Chomsky 1995), suggesting that there is something missing in the characterization in the text since the characterization in (15) is not set-theoretic. See also Nunes & Thompson (1998) for discussion.

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nominative Case, where Fin° is assumed to be the bearer of nominative Case in English (Boeckx 2008c, Chomsky 2008, Lohndal 2009).[12]

(16) (a) $[\text{Fin}^{\circ}_{[+\text{T},\ -\varphi]}\ [__\ [\text{T}^{\circ}_{[+\text{T},\ -\varphi]}]] \ldots [\text{E}_{[-\text{T},\ +\varphi]}]]$ *before valuation*
(b) $[\text{Fin}^{\circ}_{[+\text{T},\ -\varphi]}\ [[\text{E}_{[-\text{T},\ +\varphi]}]\ [\text{T}^{\circ}_{[+\text{T},\ -\varphi]}]] \ldots [\text{E}]]$ *movement of E*
(c) $[\text{Fin}^{\circ}_{[+\text{T},\ +\varphi]}\ [[\text{E}_{[+\text{T},\ +\varphi]}]\ [\text{T}^{\circ}_{[+\text{T},\ +\varphi]}]] \ldots [\text{E}]]$ *valuation*

Boeckx (2008c) assumes that Fin° values nominative Case on the relevant DP (E in the structures above) without saying explicitly how Fin° actually qualifies as a Probe. Here I will interpret this to mean that Fin° also needs to have unvalued φ-features in order to be a Probe (see also Fortuny 2008: Chapter 2 for extensive discussion of the link between Fin° and T°).[13] This is supported by complementizer agreement facts of the sort we find in West Flemish (Haegeman 1992); see also M. Richards (2007) and Chomsky (2008) for a more abstract version of this idea that generalizes to all languages.[14] $\text{E}_{[-\text{F}]}$ moves to SpecTP and then the unvalued Case feature on E is valued. Since the elements Fin°, T° and E share a [T]-feature, movement is required. If there is no movement, the φ-features on Fin° will not get valued since the unvalued φ-features on T° will create a defective intervention effect. This means that (16) is an instance of a checking domain as defined, which means that the subject is frozen in the canonical subject position.

Interestingly, this theory also predicts that there should be no freezing effects when direct objects get their case checked (in a Pesetsky & Torrego 2001, 2004 way). Direct objects are externally first-merged in their checking configuration as a complement to V°, where v° bears the relevant Case feature, on standard assumptions. (17) shows the relevant parts of the structure, though I will return to this in greater detail in Section 3.1.[15]

(17) $[v^{\circ}_{[+\text{T}]}\ [\text{V}^{\circ}\ [\text{DP}_{[-\text{T}]}]]]$

[12] I assume that this is not an instance of feature inheritance in the technical sense of M. Richards (2007) and Chomsky (2008). Feature inheritance assumes that the inheriting element (which would be T°) is merged without the relevant feature and then it inherits the feature so that the originator of the feature (which would be Fin°) presumably loses the feature. Here T° already has the relevant [T]-feature and the feature is valued. Thus, it is hard to see exactly how feature valuation would work here for a [T]-feature, which in turns raises issues about what feature inheritance ultimately is. Since I am not saying anything about phases in this paper, I set this issue aside. See also Haegeman & van Koppen (2009) for further complications for feature inheritance.

[13] Boeckx (2008c: 174) adopts this solution for A-bar chains, but seemingly not for A-chains.

[14] Whether the φ-features on Fin° are actually inherited by T° upon probing (Richards 2007, Chomsky 2008) is an issue I will not go into here since I am not adopting a phase-based framework. If feature inheritance occurs, that means that there should not be φ-features on T° when T° enters the derivation.

[15] See footnote 12 for a discussion of feature inheritance that is also relevant to the present case.

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Although direct objects are externally merged, they of course enter into checking, but not in a configuration of the kind given in (15). The latter assumption is motivated by the fact that raising of objects do not seem to be required in overt syntax in English (Lasnik 1999, 2003). Within Boeckx' theory, direct objects are eligible to move further. Below we will see that this fits with the data. However, note that the present account encompasses a disjunction: DPs can check Case in two different ways – via External first-Merge as in the case of direct objects and via Internal Merge in the case of subjects moving to SpecTP. Below we will see that direct objects can in fact also be checked in a derived position, in which case a freezing effect occurs. At the moment, I have no good reason for why there is a disjunction when it comes to checking positions for direct objects, so it remains a stipulation, as in most other theories.

This line of thought can be extended to the sub-extraction cases discussed above. Boeckx (2008c: 196) says that 'in the illicit cases, the point of origin is a complete chain … that cannot be extended further'. It is not clear exactly what this means since it is not clear that there actually is a chain inside the entire constituent. However, what I think Boeckx is trying to say is that when the entire constituent has been checked in a checking domain, none of its internal parts can be extracted. This requires that what happens to the big constituent (e.g. Case checking) also happens to the constituent's internal parts. There exist sophisticated theoretical ways of achieving this; see Boeckx (2008c) for one suggestion.[16] Basically he suggests that when sub-extraction fails, the point of origin for sub-extraction is a complete chain that cannot be extended further. That is, since the constituent has already moved into a checking domain, we would get an ambiguous chain if parts of the moved constituent moved further since these parts would eventually have to reach another checking domain. This accounts for why sub-extraction out of in-situ subjects is better than sub-extraction out of displaced subjects, as we have seen illustrated above (see e.g. example (5)).[17] Thus we see that Boeckx assumes that the accounts of extraction and sub-extraction are very similar. This is not a logical necessity in his framework, but it is an assumption that he adopts. However, when we look at various data below, we will see that there are clear differences between the two types of extraction, and that more theoretical power is required to prevent sub-extraction than to prevent extraction. In particular, I will argue that Case is required in understanding why sub-extraction is more restricted than extraction if we want to treat

[16] I will not discuss the specific details as it requires an extensive discussion of issues that are not necessary for the remainder of the paper. Instead I urge the reader to consult Boeckx's (2008c) original work for a detailed discussion.

[17] Sub-extraction from adjuncts is universally bad regardless of where it occurs. I do not deal with adjuncts in this paper, but see Boeckx (2008c) for ideas on how to analyze adjuncts within the present framework.

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extraction and sub-extraction in similar ways, as Boeckx does. This will lead me to address the difference between extraction and sub-extraction more extensively, which I will do in Section 4. The upshot of the discussion will be that the theory in Boeckx (2008c) does not offer a satisfactory explanation of why sub-extraction is prohibited given that it makes use of at least three ways to rule out the bad cases.

2.2 *Extraction of subjects*

Sub-extraction from subjects was shown to relate to the assumption that the subject moves into a checking domain, i.e. an unambiguous feature-checking site. We expect the same to be true of subjects being extracted, but a complication enters the picture at this point. It is a well-established fact that languages are subject to variation when it comes to subject extraction, and this is commonly related to *that*-trace effects (see Lohndal 2009 for discussion). In this section, I will briefly show how the theory in Boeckx (2008c) and Lohndal (2009) derives *that*-trace effects, though I will discuss some examples that motivate changing some of the assumptions that Boeckx and Lohndal made. Since the main purpose of this section is to introduce the details of the framework, I will only focus on English; see Lohndal (2009) for an extensive discussion of how to accommodate the variation we find across dialects and languages.

The standard case of *that*-trace effects from English is given in (18).[18]

(18) (a) *What do you think that is in the file?
(b) What do you think is in the file?[19]

Boeckx (2008c: 178) suggests that movement is allowed out of the embedded finite clause in (18b) because [T]-feature on Fin° is deactivated. When Fin° no longer has a valued [T]-feature, it cannot value the Case feature of the subject DP. That is, we have two configurations, as shown in (19).

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[18] It is well-known that topics ameliorate the *that*-trace effect, as in (i) (Bresnan 1977, Culicover 1992).

(i) John met the man Mary said that for all intents and purposes was the president of the university.

See Boeckx (2008c) and Lohndal (2009) for an analysis of these data that is compatible with the present paper.

[19] A case like (i), which is different from (18b) in that the subject has not moved out of the embedded clause, is accounted for by assuming that a silent complementizer can either have a Case feature or not have a Case feature, or that there are two different null complementizers. As far as I can tell, there are no real differences between these two approaches.

(i) I think he left.

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(19) (a) [Fin°$_{[+T]}$ [__ T°$_{[-\varphi]}$]] *subject extraction disallowed*
(b) [Fin°$_{[T]}$ [__ T°$_{[-\varphi]}$]] *subject extraction allowed*

The Standard English *that*-trace effect illustrated in (18a) above exhibits the configuration in (19a). When *that* is missing, as in (18b), Fin° does not have a valued [T]-feature, as is shown in (19b). Thus the DP does not receive Case, and can freely move to the main clause, where its Case feature is valued. I adopt the standard assumption that the subject moves through SpecTP even if there is no checking in this position, as long as the subject still needs to check some feature (see Boeckx 2007 & Bošković 2007 for a defense of the latter claim). However, Boeckx (2008c) does not tell us where the Case feature of *what* is valued. One answer is provided by Lohndal (2009), who argues that *what* receives Case from the matrix Fin°. Unfortunately, this solution predicts (20) to be grammatical, contrary to fact.

(20) *Who was it expected t to kiss Mary?

Since the theory in Lohndal (2009) cannot account for this case, in this paper I argue that *who* actually receives Case from the matrix verb *expected*, similarly to Kayne (1980), who argued that a matrix verb can assign Case to an element in COMP. On this assumption, I return to cases like (18b), here using the example in (21a). The relevant parts of a derivation where there is no *that*-trace effect are shown in (21b–e), where I ignore any other feature checking except Case.

(21) (a) Who do you think left?
(b) [Fin°$_{[+T]}$ do [TP [vP you$_{[-\mathbf{T}]}$ [v°$_{[+\mathbf{T}]}$ think [FinP$_{[T]}$ [TP who$_{[-\mathbf{T}]}$ left]]]]]]
(c) [Fin°$_{[+T]}$ do [TP you$_{[+\mathbf{T}]}$ [vP ~~you~~ [v°$_{[+\mathbf{T}]}$ think [FinP who$_{[-\mathbf{T}]}$ [FinP$_{[T]}$ who$_{[-\mathbf{T}]}$ [TP left]]]]]]]
(d) [Fin°$_{[+T]}$ do [TP you$_{[+\mathbf{T}]}$ [vP ~~you~~ [v°$_{[+\mathbf{T}]}$ think [FinP who$_{[+\mathbf{T}]}$ [FinP$_{[T]}$ ~~who~~ [TP left]]]]]]]
(e) [FinP who$_{[+\mathbf{T}]}$ [Fin° do [TP you$_{[+T]}$ [vP ~~you~~ [v°$_{[+\mathbf{T}]}$ think [FinP ~~who~~$_{[+\mathbf{T}]}$ [FinP$_{[T]}$ ~~who~~ [TP left]]]]]]]]

The derivation stages (21b–c) show how the main-clause subject *you* gets Case whereas (21d–e) show how the moved embedded subject *who* gets Case. The embedded SpecTP is not a checking domain because the [T]-feature on Fin° is deactiviated, thus the relevant relativized minimality situation will not emerge.[20] This means that *who* is allowed to move further, potentially triggered by an EPP-feature. Note that this gives us a way to analyze (20) as well: On the standard assumption that accusative Case is absorbed in passives, there will be no Case checker for *who* if *it* is merged as the subject. Thus the sentence is predicted to be unacceptable.

[20] Boeckx (2008c: 174) would disallow such a solution because '[a]n element can only move to a single Tense checking site or Force checking site'.

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Regarding dialects of English that do not exhibit *that*-trace effects (Sobin 1987, 2002), these show that the only possible configuration is (19b). Subject extraction is possible regardless of whether the complementizer is present or not. I am assuming that *who* in (22a) gets Case in the same way as in (21) above (pace Lohndal 2009):

(22) (a) Who do you think that left?
(b) [$_{\text{Fin}^\circ[+\text{T}]}$ do [$_{\text{TP}[-\varphi]}$ [$_{v\text{P}}$ you$_{[-\text{T}]}$ [$_{v^\circ[+\text{T}]}$ think [$_{\text{Fin}^\circ\,[\text{T}]}$ that [$_{\text{TP}}$ who$_{[-\text{T}]}$ left]]]]]]
(c) [$_{\text{Fin}^\circ[+\text{T}]}$ do [$_{\text{TP}[-\varphi]}$ you$_{[+\text{T}]}$ [$_{v\text{P}}$ ~~you~~ [$_{v^\circ[+\text{T}]}$ think [$_{\text{FinP}}$ who$_{[-\text{T}]}$ [$_{\text{Fin}^\circ[\text{T}]}$ that [$_{\text{TP}}$ who$_{[-\text{T}]}$ [$_{\text{TP}}$ left]]]]]]]
(d) [$_{\text{Fin}^\circ[+\text{T}]}$ do [$_{\text{TP}}$ you$_{[+\text{T}]}$ [$_{v\text{P}}$ ~~you~~ [$_{v^\circ[+\text{T}]}$ think [$_{\text{FinP}}$ who$_{[+\text{T}]}$ [$_{\text{Fin}^\circ[\text{T}]}$ that [$_{\text{TP}}$ ~~who~~ [$_{\text{TP}}$ left]]]]]]]
(e) [$_{\text{FinP}}$ who$_{[+\text{T}]}$ [$_{\text{Fin}^\circ[+\text{T}]}$ do [$_{\text{TP}}$ you$_{[+\text{T}]}$ [$_{v\text{P}}$ ~~you~~ [$_{v^\circ[+\text{T}]}$ think [$_{\text{FinP}}$ ~~who~~ [$_{\text{Fin}^\circ[\text{T}]}$ that [$_{\text{TP}}$ ~~who~~ [$_{\text{TP}}$ left]]]]]]]]

As we see, the only difference between the English derivations is whether the [T]-feature on Fin° is activated or not.[21] This crucially determines whether subject extraction is possible.[22]

Before moving on, we need to pause to look at a different case, namely (23), brought to my attention by Howard Lasnik (p.c.).[23]

(23) (a) I know who to say [t solved the problem].
(b) It is unclear who to say [t solved the problem].

In (23), there does not seem to be a Case assigner for *who*, which seems to be a problem for the theory I have adopted here. However, the solution I offered for the cases where *who* is allowed to move out of an embedded finite clause seems to work for (23) as well. That is, I argue that *say* assigns Case to *who* in SpecCP in the examples in (23).[24] Specifically, I assume that *say* has a valued [T]-feature that can check the unvalued [T]-feature on *who*. Since the C head

[21] There are languages, like West Flemish, that have a full agreement paradigm and no *that*-trace effect (Haegeman 1992), but they are not problematic from the present point of view. Since the ability to move a displaced subject is crucially related to whether Fin° has a valued [T]-feature, a complementizer without an agreeing [T]-feature can nevertheless agree in φ-features. I will not discuss the specific technical implementation of this in this paper.

[22] The present proposal also accounts for (i).

(i) Who do you believe [t that Mary said [t [t left early]]]?

This example is good because there is not *that* in the lowest clause, which means that *who* can move out of the embedded clause and into the left periphery of the next embedded clause, where Case is checked, as suggested in the main text. Lastly, *who* moves to the left periphery of the matrix clause.

[23] Thanks to Richard Kayne, Howard Lasnik and Juan Uriagereka for useful discussions of these data.

[24] Independent support for this claim may come from Basque, where the comparable relative pronoun gets absolutive case, as shown in (i).

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of the CP that *say* embeds has a deactiviated [T]-feature, we do not have a checking domain in the sense of (15). Hence *who* can move further. One may wonder why *who* cannot remain in this lower position (**I know to say who solved the problem*); this is presumably due to the fact that the matrix predicate selects for a *wh*-complement.[25]

This account does not derive the unacceptability of (24a), though the latter seems to be ruled out on independent grounds given that (24b) is also bad.

(24) (a) *I know who to say to solve the problem.
(b) *I know why to say to solve the problem.

Note, however, that this account does handle the following data accurately:

(25) (a) *I don't know who to tell Bill to solve the problem.
(b) I don't know why to tell Bill to solve the problem.
(c) I don't know who to tell Bill to have t solve the problem.

In (25c), *who* has its Case checked by *know*. (25b) should be good since it involves an adjunct that does not need to be checked for Case, and (25a) should be bad because *who* has not moved and hence there is no trace. Since there is no trace, there is no meaningful interpretation.

The claim that *say* can assign Case to *who* in (23) may be complicated by the following data:

(26) I know who to say very clearly [t solved the problem].

(i) Badakit nor esan konpondu zuela arazoa.
know.I who.ABS to.say solved has.COMP problem.the.ABS
'I know who to say solved the problem.' (Ricardo Etxepare, p.c.)

In (i), *nor* 'who.ABS' would normally have been *nork* 'who.ERG', since it is the underlying subject of *konpondu* 'solved'. For Basque, it is not straightforward to argue that *badakit* 'know' is what is assigning the Case since this is a verb that takes two arguments, and the lower argument is the entire clause. How exactly Case 'transmission' works here is not trivial, though see San Martin & Uriagereka (2002) and Uriagereka (2008) for some suggestions. Thanks to Juan Uriagereka for clarifying the Basque data.

[25] The issue is somewhat more complicated, as witnessed by the following data:

(i) (a) I know who left.
(b) I know that John left.

(ii) (a) I said who left.
(b) I said that John left.

These data show that both *know* and *say* can take both *wh*-complements and non-*wh*-complements. Interestingly, the following case is good according to most speakers:

(iii) I know who it was said t solved the problem.

This aligns well with the discussion in the text.

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Here the adjunct *very clearly* intervenes such that there is no adjacency between the verb and *who*. However, we know that adjacency matters in other cases, as is shown in (27a–c).

(27) (a) I sincerely believe John.
(b) *I believe sincerely John.
(c) *I believe very sincerely [John to be smart].
(d) Who do you believe very sincerely [t to be smart]?

As Chomsky & Lasnik (1977) pointed out, sentences like (27c) improve if the subject is an extracted *wh*-element, as in (27d), which lends support to the analysis above. The generalization seems to be that adjacency matters for licensing elements in situ and ECM cases, but not when a constituent is in the specifier of CP. I do not have a good answer to why adjacency does not matter in the latter case and have to set that aside for future research.

There is a lot of empirical evidence in favor of this approach to *that*-trace effects and Comp-trace effects more generally. For instance, Lohndal (2007b, 2009) argues that this approach can derive the variation among the Scandinavian languages when it comes to *that*-trace effects, and that it can also deal with relative clauses and extraction out of these. For reasons of space, I have to refer the reader to Boeckx (2008c) and in particular Lohndal (2007b, 2009) for details. In the next section, I discuss local subject questions.

2.3 *Local subject questions*

So far I have discussed extraction from embedded questions and briefly touched on sub-extraction from subjects. I will now argue that this approach can also account for local subject questions like (28).

(28) Who told the story?

There is a lot of discussion in the literature as to whether the subject in (28) is in SpecCP or in SpecTP (see, among others, Travis 1984, Vikner 1995, Zwart 1997). Rizzi & Shlonsky (2007) discuss this question thoroughly, and conclude that it does reside in SpecCP. They advance an argument in favor of this position based on languages with overt question morphemes, like Imbabura Quechua:

(29) pi-taj shamu-rka
who-Q left-AGR
'Who left?'

Rizzi & Shlonsky (2007) argue that there is a covert expletive (called THERE below) directly merged in SpecTP, making it possible for the *wh*-phrase to circumvent being frozen in SpecTP. The theory I have adopted so far is neutral on whether the subject is in its Case position or in an A-bar position (Boeckx 2008c: 193). I will follow Rizzi & Shlonsky's proposal and assume

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that there is a silent THERE in SpecTP. According to Koopman (2006), there is evidence for a silent THERE in other languages (see also Rizzi & Shlonsky 2007), so (28) and (29) may be other such cases. What would falsify my claim is a case where the sequence 'who THERE V' is bad, as it would show that there cannot be a silent THERE in a matrix clause with *wh*-movement across the board in English. Bearing this point in mind, I need to clarify how the *wh*-phrase will get Case in an example like (30a). The relevant parts of the derivation are given in (30b–e).

(30) (a) Who left?
(b) $[_{\text{Fin}^\circ[+\text{T}]}\ [_{\text{TP}[-\varphi]}\ \text{THERE}_{[-\text{T}]}\ [_{v\text{P}}\ \text{who}_{[-\text{T}]}\ \text{left}]]]$
(c) $[_{\text{Fin}^\circ[+\text{T}]}\ [_{\text{TP}[-\varphi]}\ \text{THERE}_{[+\text{T}]}\ [_{v\text{P}}\ \text{who}_{[-\text{T}]}\ \text{left}]]]$
(d) $[_{\text{FinP}}\ \text{who}_{[-\text{T}]}\ [_{\text{Fin}^\circ[+\text{T}]}\ [_{\text{TP}[-\varphi]}\ \text{THERE}_{[+\text{T}]}\ [_{v\text{P}}\ \sout{\text{who}}\ \text{left}]]]]$
(e) $[_{\text{FinP}}\ \text{who}_{[+\text{T}]}\ [_{\text{Fin}^\circ[+\text{T}]}\ [_{\text{TP}[-\varphi]}\ \text{THERE}_{[+\text{T}]}\ [_{v\text{P}}\ \sout{\text{who}}\ \text{left}]]]]$

I assume that there is no intervention effect here because Case checking of THERE happens prior to A-bar movement of *who*, which may also be required to prevent a Multiple Agree configuration if the arguments in Haegeman & Lohndal (2010) extend to the present case. As for the details of the derivation, I assume that the *wh*-phrase bears a [−T]-feature, commands Fin° and is in a possible Agree configuration. Fin° is therefore responsible for valuing the Case feature on both the expletive and the *wh*-phrase. This account is fully in line with the overall theory of the present paper, namely that extraction/further movement is only possible when an item does not enter into a checking domain. For local subject questions, the silent expletive ensures that the first checking domain that the *wh*-phrase is able to enter is in SpecFinP.

The reader may at this point wonder how I would analyze V2 languages like Norwegian, given that most theories assume that the subject is in the A-bar domain in declarative sentences like (31).

(31) Han fortalte historien.
he told story.DEF
'He told the story.'

Here I will have to assume that the Case feature [+T] is on the Force head in declarative main clauses (irrespective of whether there is a *that*-trace effect or not; see the variation in the Scandinavian languages discussed in Lohndal 2009), which will then trigger movement to the C-domain. V2 is arguably the cue responsible for this fact since V2 generally only holds in main clauses. In V2 languages, the verb has been argued to target a position higher than Fin° in the left periphery (Westergaard & Vangsnes 2005, Bentzen 2007, Julien 2007), and it is thus reasonable to assume that V2 activates an articulated C-area (it ensures that Fin° and Force° are split, cf. Rizzi 1997). Notice that this split ensures that the subject has to move into the C-domain. This movement is required for Case reasons, and made possible since SpecTP is

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no longer a checking domain due to the lack of a Case feature. This account also fits with the established fact that most Norwegian dialects do not have embedded V2 (though see Bentzen 2007 for complications and some dialectal variation), which means that we do not expect subjects in embedded clauses to move to the C-area since there is no V2 that may trigger this movement.

In this section we have seen how local subject questions can be analyzed. In the next section I turn my attention to objects and some extraction phenomena from a comparative perspective.

3. Objects and extraction

The previous section discussed subjects and some properties related to extraction. This section will show that direct objects and indirect objects fit the theory, which crucially relies on the notion of a checking domain. Section 3.1 discusses direct objects and notes a peculiar asymmetry found in Basque. This asymmetry is important for what follows in Section 3.2, were I propose a way to analyze indirect objects. Section 3.3 shows how the present theory receives further support from object shift and scrambling.

3.1 *Direct objects*

In Section 2 I argued that there is a special freezing position for subjects, namely SpecTP. According to Rizzi (2006: 124), there is no corresponding freezing position for objects. The goal of this section is to show how this can be implemented to account for the Norwegian data in (32)–(33).

(32) (a) Hva tror du Peter vet t?
what think you Peter knows
'What do you think Peter knows?'
(b) Hva tror du Peter maler et bilde av t?[26]
what think you Peter draws a painting of
'What do you think Peter draws a painting of?'

(33) (a) Hva gav du barna t for noe til bursdagen?
what gave you children.DEF for something to birthday.DEF
(b) Hva gav du barna t til bursdagen?
what gave you children.DEF to birthday.DEF
'What did you give the children for their birthday?'

[26] There is an interesting definiteness issue at work here. The following sentence, where the direct object is a definite noun phrase, is not acceptable,:

(i) *Hva tror du Peter maler [bildet av t]?
what think you Peter paints picture.DEF of

I will not attempt to analyze this fact in this paper as it requires an extensive treatment of definiteness effects. Thanks to Norbert Hornstein (p.c.) for raising this question.

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As these data show, there are no freezing effects related to direct objects. This follows straightforwardly from the theory advocated for here as direct objects do not check their case in a checking domain (see also Section 2) but normally get their Case checked in situ. The Case of the direct object will be assigned by v° as in (34). I am assuming that the direct object is merged as a complement to V° and, following Pesetsky & Torrego (2004) and Boeckx (2008c), I take it that the abstract representation of accusative Case is a [+T]-feature, and that the feature is morphologically realized either as nominative or accusative depending on the environment in which it occurs.

(34) $[v^\circ_{[+T]}\,[V^\circ\,[DP_{[-T]}]]]$

The structure in (34) is an ambiguous checking site; the direct object DP is externally first-merged in its position (see also the discussion above related to (15)). Thus this checking site does not prevent the object from moving further since it is not a checking domain as defined above. Nor does it prevent sub-extraction from the object. As (27) and (28) show, this account gives us the correct facts.

Interestingly, there is a peculiar asymmetry in the data discussed so far. We have seen that sub-extraction from subjects is generally banned, but that both sub-extraction from an argument and subject extraction are possible in a post-verbal position, as in the Spanish and English examples in (6) and (4) above. A prediction seems to be that we do not expect the same to hold true of direct objects since they do not enter into a checking domain (I will discuss object shift in Section 3.3). However, this prediction fails. Consider Basque, where sub-extraction from direct objects is banned but extraction of the entire direct object is grammatical. This is illustrated in (35).

(35) (a) *Nori$_i$ buruzko sortu zituzten aurreko asteko istiluek
who about.of create AUX last week scandals
[zurrumurruak t_i]?
rumors
'Who$_1$ have last week's scandals caused [rumors about t_1]?'
(Uriagereka 1998: 395)

(b) Zer$_1$ egiten duzu zuk t_1 hemen?
what do AUX you.ERG here
'What are you doing here?' (Etxepare & de Urbina 2003: 464)

We see here that in Basque sub-extraction from direct objects is impossible, while as we have seen both Norwegian and English allow such sub-extraction. The question is how we are to account for this in terms of the framework we are developing. Following Laka & Uriagereka (1987), Uriagereka (1999a) and Boeckx (2003, 2008a, b, c), I will argue that this extraction fact is related to properties of Basque agreement. Basque shows object φ-feature agreement with the verb, contrary to languages like English

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and Norwegian, and it is reasonable that this agreement makes it impossible to sub-extract from the object in Basque. This account is supported by a vast number of examples where the absence of agreement makes extraction possible (see in particular Boeckx 2003, 2008a, b, c; Baker & Collins 2006; see also the analysis of *that*-trace effects above). Verb–direct-object agreement yields the same effect as moving to a checking domain does, namely that sub-extraction becomes impossible. Boeckx (2003: 104) argues that the target for sub-extraction would be φ-complete, in which case sub-extraction is not licit. For this to be true in the present case, it would mean that verb–direct-object agreement somehow makes the entire direct object φ-complete. It is not entirely clear how this can be done technically and I leave the implementation of this for future research. For our purposes, it suffices to note the strong correlation between agreement and lack of sub-extraction. Notice, though, that since the direct object itself has not entered a checking domain, movement of the entire object is still possible. Thus there are now two ways in which sub-extraction of a DP becomes impossible: either by entering a checking domain (the case of subjects), or if there is agreement (in φ-features) between a verb and the DP (the case of objects).

We now have an asymmetry between extraction and sub-extraction. Extraction is ruled out whenever a constituent enters a checking domain. Sub-extraction is either ruled out by a constituent entering a checking domain OR by φ-feature agreement. This already suggests that sub-extraction is more restricted than extraction since the environment where full extraction is impossible is a subset of the environments where sub-extraction is impossible. This is something that the theory in Boeckx (2008c) cannot capture as it stands. I have argued that a disjunction is necessary in order to capture the data, which suggests that Boeckx' theory does not offer an explanation of why sub-extraction is prohibited even if it looks like we are roughly dealing with the same type of structure each time sub-extraction is bad (that is, extraction out of a complex phrase). In the next section I will argue that this conclusion is strengthened by the fact that in order to account for indirect objects in Norwegian, we need yet a third mechanism to rule out sub-extraction.

3.2 *Indirect objects*

The data that this section seeks to account for are provided in (36).

(36) (a) *Hva gav du [t for en fyr] pakker til bursdagen?
what gave you for a guy gifts for birthday.DEF
(b) Hvem gav du t pakker til bursdagen?
who gave you gifts for birthday.DEF
'Who did you give gifts for their birthday?'

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The example in (36a) shows that it is impossible to sub-extract from an indirect object, whereas (36b) shows that it is possible to move the entire indirect object. As we have seen, Basque shows the same contrast with direct objects, but this section argues that the two cases are to be accounted for differently.

We know that indirect objects are special. They are claimed to be inherently theta-marked (and thus linked to theta-selection, see Chomsky 1986), and often get dative case across languages. My account of the observed contrasts found with indirect objects is that the inherent Case assigned to them makes them opaque, thus sub-extraction is impossible (cf. Řezáč 2008 on Basque and other languages, though see Uriagereka 2008: 157–158 for complicating factors for Basque). This holds because the Probe would not be able to locate any element within the indirect object that it could extract. In other words, inherent Case acts like a 'shield', preventing any probing into its inner structure. This shield might plausibly be a PP shell, as suggested by Kayne (1984), Bittner & Hale (1996) and more recently Řezáč (2008), although admittedly this in itself does not guarantee non-probing; however, see Řezáč for a specific proposal using phase theory. Indirect objects are therefore moveable as units, but it is impossible to sub-extract from them. Arguably, the reason they are movable as units is that they do not enter a checking domain, thus they can freely move to the left periphery of the clause. However, in Section 4 we will see that this picture is cross-linguistically more complicated in interesting and non-trivial ways.

Before we move on to briefly discuss object shift and scrambling, we should pause to reflect on what it means that we have three different factors that prevent sub-extraction: entering a checking domain, triggering agreement or being assigned inherent Case. These three factors make it clear that we should be well-prepared to deal with the empirical generalization that sub-extraction is more restricted than full extraction, though it also means that we are either missing a generalization or that we cannot really explain sub-extraction. This paper will suggest that the latter is more likely the case. Intuitively, it also makes sense that we need more factors to rule out a quite diverse set of environments where sub-extraction is banned, compared to the rather homogeneous environments where extraction is banned (the latter being by and large confined to checking domains, if Boeckx 2008c and the present paper are correct). This is non-trivial from a theoretical perspective since it can be taken to mean that the prospects for developing a theory of sub-extraction are scant.

3.3 *Some remarks on object shift and scrambling*

The theory of Boeckx (2008c) makes an interesting prediction, which I have indirectly touched on already: when we have scrambling or object shift, the internal parts of the moved constituent should be frozen or immovable if the

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moved constituent enters a checking domain (earlier versions of this prediction are the Frozen Structure Constraint (Ross 1967/1986: 173), the Freezing Principle (Wexler & Culicover 1980: 179) and the Revised Extraction Constraint (Diesing 1992: 128). This prediction follows because a shifted object would have its Case checked in a checking domain. I am assuming that in cases of object shift and scrambling, Case is not checked until the shifted position is reached because the absence of checking in the base position is what makes object shift and scrambling possible in the first place. An abstract derivation is shown in (37), where the starting point looks something like (37a).

(37) (a) $[_{Agr^\circ[+T]}\,[\mathrm{DP}_{\text{subject}}\ v^\circ_{[T]}\,[\mathrm{V}^\circ\ \mathrm{DP}_{[-T]}]]]$
(b) $[_{Agr^\circ[+T]}\,\mathrm{DP}_{[-T]}\,[\mathrm{DP}_{\text{subject}}\,[v^\circ_{[T]}\,[\mathrm{V}^\circ\ \sout{\mathrm{DP}}]]]]$
(c) $[_{Agr^\circ[+T]}\,\mathrm{DP}_{[+T]}\,[\mathrm{DP}_{\text{subject}}\,[v^\circ_{[T]}\,[\mathrm{V}^\circ\ \sout{\mathrm{DP}}]]]]$

What happens here is that the v° is deactivated and the Case feature is on a higher head, (37b), say Agr°, to use a familiar label (although the label should not be taken to have any theoretical significance). The deactivation is of the familiar sort that we saw in cases of subject extraction from finite embedded clauses without a complementizer (recall, for example, the analysis of English sentences without *that* as in (18b)). The object has to move in this case because otherwise the defective [T]-feature on v° will create an intervention effect which will block Case assignment. We can test that the derivation in (37) gives the right empirical results by looking at data related to these phenomena. I will use Icelandic and German data for illustration.

Icelandic does not have a general ban on floating quantifiers, as shown in (38).

(38) (a) Hún þekkir ekki [öll börnin].
she knows not all children.DEF
'She doesn't know all the children,'
(b) ?Börnin$_i$ þekkir hún ekki [öll t$_i$].
children.DEF knows she not all (Halldór Á. Sigurðsson, p.c.)

It is, however, impossible to strand a quantifier in a shifted position:

(39) *Börnin$_i$ þekkir hún [öll t$_i$] ekki.
children.DEF knows she all not (Halldór Á. Sigurðsson, p.c.)

These data seem to confirm our prediction: Shifted objects do not allow sub-extraction. However, this claim is somewhat complicated by the standard treatment of quantifier floating as in Sportiche (1988), where it is assumed that quantifiers can be floated in shifted positions. The data from Icelandic suggest that one cannot trivially equate quantifier float and sub-extraction, but that in this language, the lack of quantifier float in shifted positions may follow from conditions on sub-extraction.

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Scrambling data from German provide the same picture as Icelandic, though without the additional complication. (40)–(41) illustrate that scrambled objects do not allow sub-extraction (for some complications, see Fanselow 2001).

(40) (a) Was hat Otto immer [t für Romane] gelesen?
what has Otto always for novels read
'What kind of novels has Otto always read?'
(b) *Was hat Otto [t für Romane] immer gelesen?
what has Otto for novels always read
'What kind of novels has Otto always read?' (Diesing 1992: 129)

(41) (a) Über wen hat der Fritz letztes Jahr [ein Buch t]
about whom has the Fritz last year a book
geschrieben?
written
'Who did Fritz write a book about last year?'
(b) *Über wen hat der Fritz [ein Buch t] letztes Jahr
about whom has the Fritz a book last year
geschrieben?
written
'Who did Fritz write a book about last year?' (Müller 1998: 125)

(40a) and (41a) show that sub-extraction from the base position is entirely licit, whereas (40b) and (41b) show that sub-extraction from the scrambled position is banned. This is in line with our prediction.

English provides further support. Here I draw on the observation in Lasnik (2001) that an object is only an island for extraction when it has raised overtly; the contrast between (42a) and (42b) illustrates that. (See discussion of whether or not English has object shift in a series of papers in Lasnik 1999, 2003.)

(42) (a) Who_i did Mary call up [friends of t_i]?
(b) ?*Who_i did Mary call [friends of t_i] up? (Lasnik 2001: 111)

In (42b) we have exactly the configuration shown in (37) above. The Case feature is on what I have labeled the Agr head in (42b), whereas it is on the *v* head in (42a). Thus the data from object shift and scrambling can be accounted for by the present theory. In the next section, I will look at cross-linguistic differences regarding indirect objects and their freezing properties.

4. Variation in indirect objects: English and Norwegian compared

In this section I will provide a quite extensive study of variation in indirect objects between English and Norwegian. I will show that Case is a central

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ingredient in deriving the differences. Before I can turn to that, it is necessary to briefly discuss recent studies on indirect objects.[27]

This section is structured as follows. First I mention the English data that show that indirect objects cannot A-bar move, in contrast to the Norwegian data we saw in Section 2. The analysis will be an extension of the account I have developed so far based on freezing, and we will see that sub-extraction again continues to demand 'special' solutions in order for us to account for the differences between English and Norwegian. I will argue that English indirect objects have to check a structural Case feature whereas Norwegian indirect objects only have an inherent Case feature. This will be argued to derive the differences between the two languages. Lastly I turn to passives and give a short analysis of some differences between English and Norwegian. Passives will not be discussed in great detail, but I hope to show how the framework adopted in this paper can be used to analyze passive as well as active sentences.

Although Norwegian allows both the direct object and the indirect object to A-bar move (see (32a) and (36b) above), this, as (43c) shows, is not true for English. The fact was first discussed by Chomsky (1955/1975: 492–493) and subsequently by Fillmore (1965), Jackendoff & Culicover (1971) and Oehrle (1976).

(43) (a) Joanie gave a bouquet of flowers to who.
(b) Joanie gave who a bouquet of flowers.
(c) *Who did Joanie give a bouquet of flowers?[28] (Whitney 1982: 307)

[27] Throughout this paper, I use the term 'indirect object' rather than 'applicative', except in cases where I refer to literature that explicitly uses 'applicative'. This is an extension of the term applicative used to refer to a construction where a verb bears a special morpheme which licenses an oblique or non-core argument (see Marantz 1993). In the extended usage, all indirect-object constructions are called applicatives (see McGinnis 2001, Pylkkänen 2002/2008, Jeong 2007). Given this terminology, (ia) is an applicative and (ib) is not.

(i) (a) I read John a letter.
(b) I read a letter to John.

Since I discuss both constructions in (i), 'indirect object' is a better term.

Another distinction that I will take for granted is the distinction between low and high indirect objects/applicatives (McGinnis 2001, Pylkkänen 2002). The basic idea idea is that cross-linguistically double object constructions are divided into two types: high and low phrases within the argument domain. Whether an indirect object is 'high' or 'low' is correlated with semantic distinctions. A high indirect object (merged above the VP) denotes a relation between an individual and an event whereas a low indirect object (a complement to the V head) denotes a relation between two individuals. In the latter case, this relation is a relation of possession between the indirect object and the direct object.

[28] Interestingly, Baltin (2001: 251–252, fn. 2) points out that this picture is more complicated. He shows that verbs like *teach* and *feed* do allow for what he takes to be an indirect object to A-bar move:

(i) (a) John taught Sally (French).
(b) Who did John teach?

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These examples have traditionally been taken to show that it is possible to move a dative once, as in (43b), but not twice, as in (43c). However, Oehrle (1976) was the first to argue that there is no movement and that both (43a) and (43b) are base-generated. I will not discuss issues related to whether sentences like (43a) and (43b) are derived from one common structure (Czepluch 1982; Whitney 1982; Baker 1988, 1996, 1997; Marantz 1993; den Dikken 1995; Pesetsky 1995) or have different base structures (Oehrle 1976; Harley 1995, 2002) (see Rappaport Hovav & Levin 2008 for a critical discussion of the latter position regarding the semantics). The consensus in recent years has clearly been to assume two basic structures and that is what I will assume here too (see McGinnis 2001, Pylkkänen 2002/2008 and Jeong 2007; McGinnis 2008 provides a good overview).

All recent studies are by and large confined to A-movements, and in particular passives. However, it seems worthwhile to try to unify the research on various types of indirect objects and their behavior under A-bar movements. The main goal of this section is to do that and at the same time briefly look at passives to make sure that the theory can handle the basic facts.[29]

As we have seen, one fact in need of an explanation is why (43c) is bad. (44) gives a different example, where the difference in judgment means that speakers vary a bit on how bad they find these examples.

(44) ?*Who did Mary give a book?

As we have seen in detail above, Boeckx' (2008c) theory says that when an item enters a checking domain, it becomes frozen. Thus it is natural to conclude that the indirect object in (44) is frozen and is not able to A-bar move. Jeong (2007) argues that Case is a crucial ingredient in deriving various properties of high and low applicatives/indirect objects, and I would like to follow this insight. A natural way to account for the data in (44) is to argue that English indirect objects need to check a structural Case feature. This is in effect the suggestion made by Baker (1997), and it has also been adopted in

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(ii) (a) John fed Sally (steak).
(b) Who did John feed?

Baltin does not offer a solution to this puzzle. The puzzle is even more serious because of (iii).

(iii) (a) Who did John teach French?
(b) Who did John feed steak?

Both of the examples in (iii) are good. This seems to be idiosyncratic to the verbs *teach* and *feed*, which pattern more like Norwegian in this regard by allowing the indirect object to move. I will assume that this is a lexical idiosyncrasy in the sense that there is no AspP (see below) available for these verbs, which means that the structural Case feature can be checked either in situ or in SpecCP (by T's Case feature).

[29] A question that will not be dealt with here is why some languages, like French, do not allow the indirect object construction (Kayne 1984: 193) and why Latinate verbs like *donate* do not allow indirect objects (see Harley 2008 for a recent proposal).

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the literature subsequently. Baker suggests an AspP merged directly below *v*P, which is compatible with the theory advocated here.[30] Let us look more closely at the derivation of (44). Consider the structures in (45), where I follow Pylkkänen (2002/2008) and others in assuming that English has a low ApplP where both the indirect and the direct objects are merged.

(45) (a) [$_{vP}$ SU [$v^{\circ}_{[+T]}$ [$_{AspP}$ [$Asp^{\circ}_{[+T]}$ [$_{VP}$ [V° [$_{LApplP}$ $IO_{[-T]}$ [$_{LAppl^{\circ}}$ $DO_{[-T]}$]]]]]]]]

(b) [$_{vP}$ SU [$v^{\circ}_{[+T]}$ [$_{AspP}$ $IO_{[+T]}$ [$Asp^{\circ}_{[+T]}$ [$_{VP}$ [V° [$_{LApplP}$ ~~IO~~ [$_{LAppl^{\circ}}$ $DO_{[+T]}$]]]]]]]]

Here I am only focusing on the indirect object. I continue to simplify by marking the abstract Case feature as a [T]-feature. I assume that the Asp° head and the *v*° head both have a [+T]-feature, where the former licenses accusative Case on the direct object and the latter licenses dative Case on the indirect object.[31] Since *v*° needs to enter into a relation with the indirect object, the indirect object has to move to Spec*v*P in order to circumvent a potential relativized minimality effect due to the [+T]-feature on Asp°. The specifier of Asp° will then be a checking domain, thus nothing will be able to move further from this position. As with subjects, sub-extraction is also ruled out because the constituent has entered a checking domain. We thus see that indirect objects in English behave quite similarly to subjects as regards extraction and sub-extraction, with the exception that subject movement can be ameliorated in certain environments (*that*-trace effects).

Interestingly, the present account also accounts for why (46) is grammatical.

(46) Who did Mary send a present to?

[30] One might wonder whether this proposal rather speaks in favor of a transformational account of the dative alternation, since an 'extra' position is needed on my proposal as well. However, as Oehrle (1976) and Harley (1995, 2002) have argued, there are several important independent problems with assuming a transformational account where the indirect object originates in the complement of a preposition (which then becomes silent after movement). I am therefore assuming that there are two base structures, in line with the recent research on applicatives quoted above. In other words, AspP is independent of whether one assumes a transformational or a base-generation account. What is crucial is that we need a checking domain for the checking of the structural Case feature on (English) indirect objects.

[31] This [+T]-feature on *v*° may plausibly be inherited by V; see Richards (2007) and Chomsky (2008). This would circumvent a possible locality problem for Agree between *v*° and the direct object (since (the copy of) the indirect object intervenes; this assumes that the lower copy for some reason does not intervene), thus the argument in Citko (2009: 149) that such an Agree relation is not impossible may not apply here. Since I have not discussed a phase-based approach in the present paper, I set this detail aside.

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In (46) the dative is realized in a prepositional phrase, and the dative does not enter a checking domain, though it gets its Case in its base position. Since this is not a checking domain, no freezing occurs. The structure is shown in (47).

(47) (a) did Mary send a present [to$_{[+T]}$ who$_{[-T]}$]
(b) did Mary send a present [to$_{[+T]}$ who$_{[+T]}$]
(c) who$_{[+T]}$ did Mary send a present to ~~who~~

Again, a Case feature is realized as a [T]-feature, which Pesetsky & Torrego (2001) argue is the case also for prepositions. Case checking takes place in situ, which is not a checking domain. Thus we expect movement to be licit and, as (47c) shows, the dative can move freely to the left periphery of the clause. Essentially, the present proposal captures the same effects that Anagnostopoulou (2003: 146) does. She argues that both the PP and the DP are in the same minimal domain (the VP) so movement of either is grammatical. However, no assumption about elements being in the same minimal domain is necessary here, which arguably is a welcome consequence as it gives us a more restrictive theory of phrase structure since we do not have to assume the kind of parameter that Anagnostopoulou suggests (see Boeckx 2008c).

Crucially, the current theory also offers a way to account for why Norwegian allows the indirect object to A-bar move.

(48) [$_{CP}$ Hvem$_i$ gav [$_{IP}$ Marie [$_{vP}$ t$_i$ en bok]]]?
who gave Marie a book

In Norwegian, the shifted position is not a checking domain, which suggests that Norwegian indirect objects bear inherent Case, as suggested in Section 3.2.[32] Since there is no structural Case feature, indirect objects in Norwegian do not freeze if they move through SpecAspP since SpecAspP will not be a checking domain as no features on the indirect objects have to be checked. Thus indirect objects are able to move freely as units. I argued above (following e.g. Řezáč 2008) that inherent Case typically renders the internal structure of the item opaque. This accounts for why sub-extraction from indirect objects is not possible in Norwegian, as we saw in Section 3.2.

[32] Further support for this comes from Icelandic, on the assumption that dative case is inherent in both of these languages. Although it is commonly assumed that Norwegian indirect objects bear inherent Case, it is even clearer that Icelandic indirect objects do since they are morphologically marked. As (i) shows, Icelandic patterns with Norwegian in allowing indirect objects to A-bar move (cf. (48)).

(i) (a) Jón sendi Maríu bréf.
Jón sent Marie letter
'Jón sent Marie a letter.'
(b) Hverjum sendi Jón bréf?
who sent Jón letter (Halldór Á. Sigurðsson, p.c.)

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Interestingly, the same data as (36a) (noted in Culicover & Wexler 1973: 26) occur in English; see (49).

(49) (a) I sent a friend of Peter a book.
(b) *Who did you send a friend of a book?

The explanation for the ungrammaticality of (49b) cannot be the same as for sub-extraction from indirect objects in Norwegian. For Norwegian, I argued that sub-extraction is impossible because of inherent Case. As discussed in Section 3.2, Inherent Case renders the internal structure of an item opaque for sub-extraction, which means that a Probe–Goal relation cannot be established between a Probe and a Goal within the indirect object. For English, on the other hand, sub-extraction is ruled out because the indirect object moves to a checking domain. Again we see how two of the three ways to rule out sub-extraction come to play: inherent Case-marking and entering checking domains (the third being agreement, e.g. in the case of Basque). Thus there are differences between languages and between structures as to which option they chose. In other words, although the English and Norwegian data on sub-extraction from indirect objects are similar, I argue that they should be accounted for differently if we want to bring sub-extraction under the freezing fold as Boeckx (2008c) wants to. This seems to again show that it is necessary to rule out sub-extraction in more ways than extraction itself, a theoretical claim that we have seen a lot of empirical evidence in favor of. However, it also means that from a freezing perspective, there does not seem to be an explanation of why sub-extraction is bad. If there are three ways of deriving the ban on sub-extraction, we are either missing a generalization or there is no generalization to be obtained, despite the fact that the structures that are frozen in cases of sub-extraction seem to be very similar. Insofar as the present paper is on the right track, it suggests that the latter is true.

In sum, we see that Case provides a natural way to understand the differences between languages like English and Norwegian. The main difference is to do with whether indirect objects have a structural Case feature that they have to move into a checking domain to check or whether they are inherently Case-marked. Let me now discuss how we can also derive contrasts in passives from the present framework.

There are several things that we need to explain. First of all, we have to explain why indirect objects freely A-move in passives, whereas direct objects do not in (American) English. The relevant data are given in (50).

(50) (a) John was given a book by Mary.
(b) *A book was given John by Mary.[33]

[33] Oehrle (1976), Larson (1988: 364) and Anagnostopoulou (2003: 39) discuss an issue that shows that the picture is not as simple as I tacitly assume. Importantly, promotion of the

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I have already argued that English indirect objects have structural Case. This means that the Case feature has to be checked. From the perspective I have been defending in this paper, the natural way to account for (50) would be to argue that for some reason (to be discussed immediately below) the Case feature of the indirect object cannot be checked in the shifted position.

Anagnostopoulou (2003) suggests that the difference between the English examples in (50) can be accommodated through locality. Specifically, in passives, the goal blocks movement of the theme. However, if this were the case, it remains mysterious why Norwegian goals do not block this movement. I think the theory proposed by Boeckx (2008c) provides a better solution to this puzzle. Namely, in passives, there is by hypothesis no Case feature that can check the structural Case feature of indirect objects. I assume that part of what passivization does is to remove/absorb this structural Case feature on v°, on a par with transitive verbs that are passivized, as in (51c) (cf. the analysis in e.g. Jaeggli 1986, Baker, Johnson & Roberts 1989). This will allow (51b) as the passive counterpart of (51a). On this proposal, it follows that nothing will be able to check the structural Case feature on indirect objects, though it offers no explanation of why passive does exactly this, and not, say, remove the Case checker of accusative Case of the direct object.

(51) (a) John read a book.
(b) A book was read by John.
(c) *It was read a book.

As such, one may think that there is some sort of Case hierarchy here where the structural Case feature that is highest in the argument domain is removed. For ditransitivies, this will be the *v* head, and for transitives, it will be the *v* head as well since the *v* head bears the accusative Case feature in the latter case. Put differently, this could lead one to speculate that the Case feature on the *v* head is always the feature that is removed in passives. I leave this issue and the possible implications for future research.

The indirect object will not get its Case checked since there is nothing that can check the Case feature within the argument domain of the clause, and it therefore has to move to the subject position to get its Case checked. Interestingly, there is also another fact that seems to support this theory. Consider the contrast in (52).

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direct object improves slightly if the indirect object is a pronoun (i), but if it is a reduced pronoun, the sentence is fully acceptable (ii).

(i) ??A letter was given me by Mary.
(ii) A letter was given 'im/*HIM by Mary

This is an effect comparable to that of clitics in Greek. Anagnostopoulou (2003) discusses these cases in depth, and I refer to her study for details on this phenomenon.

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(52) (a) *A letter was sent Mary (by John).
(b) A letter was sent to Mary (by John).

I take the grammaticality of (52b) to show that movement of the direct object is not excluded per se in English. What is impossible is for the Case feature of the indirect object to be checked in passives, and this is what renders (50b) and (52a) ungrammatical.

The Norwegian data introduce some further complications. In Norwegian, an indirect object can remain in SpecAspP in passives (53a), but it can also move to the subject position (53b).

(53) (a) Boken_i ble gitt [$_{\text{AspP}}$ John [$_{v\text{P}}$ t_i av Knut]].
book.DEF was given John by Knut
(b) John_i ble gitt [$_{\text{AspP}}$ t_i [$_{v\text{P}}$ boken av Knut]].
John was given book.DEF by Knut

Again, indirect objects in Norwegian have inherent Case without a structural Case feature, so there will be no Case checking in a derived position.[34] Thus, on this approach, they can move freely to the left periphery of the clause.[35] Direct objects are eligible for movement since they do not enter any checking domain in their base position. Given the data in (53), one might wonder what happens with the accusative Case feature in (53a), since the direct object bears accusative Case in (53b). Åfarli (1992: 79), in part building on Baker (1988: 340f.) and Baker et al. (1989: 239f.), provides a solution to this as he argues that the passive morpheme in Norwegian can bear Case, but it does not have to. That is, it does not bear Case in (53b) but it does in (53a).[36] Here I adopt Åfarli's analysis; see his work for further details.

We have seen how Boeckx' (2008c) theory makes it possible to account for the various restrictions on both A-bar and A-movement. The main hypothesis is that whenever an element enters into a checking domain, it cannot move any further. This is particularly clear for subjects when they check their EPP-property, which is derived on Boeckx' (2008c) proposal, and I have suggested ways of extending this property to other cases of freezing. In

[34] Citko (in press) discusses some very interesting data from Polish (an asymmetric language as regards passivization), suggesting that Polish datives need to check a structural Case feature, and that this checking induces a freezing effect such that the dative indirect object cannot move to the subject position. Whereas this may be the right analysis for Polish, it is not clear how it derives the contrast between English and Norwegian.

[35] I assume that this analysis can be extended to British English as well. That is, Norwegian and British English seem to be very similar concerning passivization and extraction of the indirect object. If I am correct, this relates to whether or not there is a structural Case feature on the indirect object.

[36] Notably, Åfarli uses this analysis to give a comprehensive account of the differences between English and Norwegian personal and impersonal passives. To review this complex material would take this paper beyond all reasonable limits, so I will have to refer the interested reader to Åfarli's (1992) original work. See also Citko (2009) for a different analysis of these data where crucially all indirect objects have a structural Case feature.

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particular, I have argued that this approach gives us a way to analyze the differences between English and Norwegian indirect objects. The present proposal also lends support to Jeong's (2007) and Citko's (2009, in press) claim that Case is a major ingredient in deriving locality constraints for indirect objects. However, we have also seen that the theory is not able to explain sub-extraction. Agreement, inherent Case and structural checking domains all converge on the same effects. It is not clear that the principles that we use to achieve this are significantly different from the number of phenomena to be explained. In that regard, there is no explanation of sub-extraction. Rather, the fact that we need a disjunction in our theory to derive the data suggests that extraction and sub-extraction are different phenomena, pace Boeckx (2008c). Needless to say, further studies are needed to say something about other languages that might differ from English and Norwegian, but I also think that the extraction contrasts displayed by these two closely related languages offer a good window into the underlying processes related to movements of indirect objects within Universal Grammar. In the next section, I discuss some remaining issues before concluding the paper in Section 6.

5. Discussion

In this section, I will discuss some more general issues that arise based on the arguments that I have given in this paper. I will mainly look at possible problems and questions that the paper raises.

The theory of Boeckx (2008c), which I have adopted and extended, works well for pure extraction, where the notion of a checking domain is able to do a lot of work. However, in the course of the paper it became clear that the theory faces difficulties in accounting for the variation we find for sub-extraction. The paper ended up arguing that we need three different ways to preclude sub-extraction if we want to bring sub-extraction into the freezing fold. Thus there is no explanation of why sub-extraction is bad. This raises important questions about how a child would go about figuring out which language he or she is acquiring. The child does not have access to the cross-linguistic correlations, and by assumption the child does not have enough relevant input of sub-extraction cases. For subjects, the child would presumably get the ban on sub-extraction for free given that this is a case where the subject would be in a checking domain, which is something that the child has to know. For direct objects, presumably the explicit object–verb agreement marking in the case of Basque would be a cue, but then again it is not clear how this correlation gets implemented grammatically. For indirect objects, the issues are even less clear. Both English and Norwegian disallow sub-extraction out of indirect objects, but I have argued that the freezing story forces us to assume that this is for different reasons. For Norwegian, the lack of sub-extraction has been argued to relate to inherent Case whereas

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in English it follows from the claim that indirect objects move to a checking domain. Since there are no overt morphological differences between Norwegian and English, it is not clear what the child would rely on. Thus it is hard to see how the child would figure out exactly how to rule out sub-extraction. The acquisition argument is another argument that speaks against a theory that does not try to unify instances of illicit sub-extraction.

It is also worthwhile to consider some facts that the present paper predicts should not occur. It predicts that we should not find a language in which extraction out of in-situ elements that have structural Case is impossible. For example, direct objects that bear structural Case should always be extractable themselves. The theory also predicts that there should be no difference between sub-extraction from a subject in situ and sub-extraction from a direct object in situ, as long as both of these bear structural Case and there is otherwise no overt agreement as in Basque. Here it seems that the theory is challenged by the recent results in Jurka (2009), who shows that there is a difference in acceptability ratings depending on whether sub-extraction is from an in-situ subject or an in-situ object in a language like German. Presumably such differences in acceptability judgments make predictions about grammatical differences, though it is not clear how exactly to correlate acceptability judgments with grammatical differences. However, it is clear that the present theory as it stands cannot easily account for these facts. Furthermore, the theory predicts that an element can only move into one Case-checking domain. That is, an element cannot move into two Case positions as long as both of these are checking domains. Lastly, sub-extraction out of an inherently Case-marked element should never be possible.

Before concluding, it is worth considering whether the parameters that have been invoked in this paper are the best ones, or at least why they are better than other plausible parameters. Put differently, one wonders why Case should be such a central ingredient as opposed to φ-features, for example, an issue that Boeckx (2008c) does not discuss. I think that there are at least some empirical reasons for thinking that Case is a central mechanism in narrow syntax, and that it is more central than φ-features. One is that we find some instantiation of Case in all of the described world's languages. Even for languages like Mandarin Chinese it has been argued persuasively that abstract Case plays a crucial role even though there is no morphological marking of case (Li 1985, 1990). That is not the case for φ-features. They vary a lot both in their syntactic role and their morphological realization, and it is not clear that we want to say that they are universal, as in particular Fukui (2006) has argued convincingly (though see Sigurðsson 2004 for a different view). So even if there is verb–direct-object φ-feature agreement in Basque, that does not mean that English or Norwegian has such agreement. There are also differences between φ-features: some play a more privileged role than others. It has been argued, for example, that Person is special (Baker 2008, M. Richards 2008). It is not clear how this variation would go together

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with an approach that tries to get freezing effects to fall out from φ-feature agreement. However, it has been argued that agreement is responsible for why it is impossible to sub-extract from direct objects in Basque (see references in Section 3.1) and if that is on the right track, φ-features play some role. Their role, though, seems to be heavily dependent on overt morphological realization, i.e., that the features are externalized at PF (Fukui 2006). If Fukui and others are right, that is a strong argument against deriving freezing effects from φ-features. Instead, relying on Case seems like a better option given that its presence is more or less universally attested. Beyond Case and φ-features, there are hardly any other features that play a role throughout the clausal spine and that seem to approach some status of universality. Although this is a quite strong independent empirical argument, conceptually it is not clear that Case has to be privileged the way it is in the present story. If one instead argued that φ-features were privileged, or some other feature, that could just as well have turned out to be the right story, conceptually speaking. Case is not a priori the best parameter, but it seems to be one that is well supported empirically.

6. Conclusion

In this paper I have made an attempt to explore the theory of Boeckx (2008c) and to see to what extent it can account for freezing effects that subjects, direct objects and indirect objects exhibit. Boeckx argues that when an item is checked in a special checking domain, it is impossible for this item to move further or to sub-extract from the item. This makes it possible to account for the comparative variation in *that*-trace effects, some of which have been discussed here, and also for why sub-extraction from subjects is bad. Furthermore, it allows us to account for why direct objects commonly allow both extraction and sub-extraction, though I have also looked at a case from Basque where the latter is not allowed.

The paper also gave a comparative analysis of indirect objects in English and Norwegian, where the crucial contrast is that indirect objects can undergo A-bar movement in Norwegian but not in English. This difference was accounted for by arguing that English indirect objects have a structural Case feature whereas Norwegian indirect objects have an inherent Case feature. The structural Case feature needs to be checked in a checking domain, thus a freezing effect occurs. Norwegian indirect objects, on the other hand, do not have a structural Case feature, hence no checking in a checking domain and consequently no freezing effect. I have also discussed how this account can account for why indirect objects are able to passivize in both English and Norwegian by arguing that in passives, the structural Case feature that licenses indirect objects is absorbed.

Future work would have to address sub-extraction more extensively. The present paper suggests that a freezing approach does not offer a way to

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explain sub-extraction. Ideally we would like to be able to explain sub-extraction since it seems to involve similar complex structures. It would also be important to explain sub-extraction to address the acquisition concern raised in the previous section. However, despite this, the theory advocated in the present paper appears to be a fruitful tool for investigating a number of freezing phenomena across natural languages.

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