

# Deconstructing subjecthood

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October 2016

This paper argues that subjecthood properties manifest on a DP in accordance with an implicational hierarchy, which is paralleled in how high the DP raises in the functional sequence. The empirical motivation comes from a crosslinguistic study of quirky (nonnominative) subjects, which discovers that the crosslinguistic variation in the subjecthood properties exhibited by quirky subjects is constrained by a set of ordered entailments. I propose that subjecthood properties are distributed across different functional heads such that a DP must raise to that position to bear the associated property. The implicational hierarchy results from the requirement that a DP move cyclically through these subjecthood positions. Quirky subjects differ from canonical nominative subjects in that their final landing site may be an intermediate subjecthood position, thereby yielding variation in which subjecthood properties they bear. The empirical and theoretical contributions made in this paper support the view that subjecthood reduces to a purely structural phenomenon.

**Keywords:** subjecthood · quirky subjects · grammatical functions · case

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## 1 Introduction

We inherit notions like “subject” and “object” from traditional grammarians, but most generative linguists at least tacitly believe that, however useful as descriptive labels, grammatical functions are not and should not be theoretical primitives. This line of thinking can be traced back as far as [Chomsky’s \(1965\) \*Aspects\*](#). However, there is the pesky problem that those DPs traditionally called subjects appear *prima facie* to be afforded a special status in the grammar. Consider the pair of sentences in (1), where the boldfaced DP would traditionally be called a “subject” and the italicised DP an “object” or an “oblique”.

- (1) a. **Mary** saw *Susan*.  
 b. **Mary** was seen by *Susan*.

(2) shows a classic subject–nonsubject asymmetry: the boldfaced DPs from (1) can be PRO when the clause has been embedded as the nonfinite complement of a control verb (2a, b), but the italicised DPs cannot (2c, d).

- (2) a. Mary<sub>1</sub> wants [ **PRO**<sub>1</sub> to see Susan ].  
 b. Mary<sub>1</sub> wants [ **PRO**<sub>1</sub> to be seen by Susan ].  
 c. \*Mary<sub>1</sub> wants [ Susan to see **PRO**<sub>1</sub> ].  
 d. \*Mary<sub>1</sub> wants [ Susan to be seen by **PRO**<sub>1</sub> ].

Subject–nonsubject asymmetries like those in (2) force us to accept that DPs traditionally called “subjects” possess an array of properties that are unique to them and thus do in fact enjoy a special status in the grammar, whatever that might be. For the sake of convenience, let us refer to these DPs as **SUBJECTS**, these properties as **SUBJECTHOOD PROPERTIES**, and the special status of these DPs as **SUBJECTHOOD**. A theory of subjecthood is therefore a theory about the *distribution* of subjecthood properties. Why do subjects but no other arguments possess these properties? Moreover, at the outset, the fact that subjects in both active and passive clauses behave identically discredits defining subjecthood in terms of meaning, e.g. agentivity, or function, e.g. topichood. Whatever subjecthood is, it is a phenomenon within the grammar, at some level of abstraction.

There are two broad approaches to subjecthood. The predominant approach argues that subjecthood is epiphenomenal of the particular syntactic position that a subject occupies, namely [Spec, IP] or [Spec, TP] (e.g. [Chomsky 1981, 1982](#)). This is the view adopted in Government and Binding Theory and its successors. Crucially, this approach allows one to maintain that subjecthood is not a theoretical primitive. Instead, subjecthood is a reflex of the unique syntactic derivation of a subject, which follows from independent principles, such as the locality of A-movement. The alternative approach denies the premise that grammatical functions are not theoretical primitives and asserts the opposite, that they are in fact primitives (e.g. [Kaplan and Bresnan 1982](#)). This is the view adopted in Lexical Functional Grammar and Relational Grammar, which have dedicated representations for encoding grammatical functions. Let us refer to the first approach as subjecthood-as-structural (SS) and the second approach as subjecthood-as-a-primitive (SP).

Although these two approaches fundamentally differ, they both consider subjecthood to be a *unitary* property. Crucially, this predicts that subjecthood properties should cluster together. While this prediction is true of canonical nominative subjects, it is not true of QUIRKY SUBJECTS. Quirky subjects are DPs that have subjecthood properties and occupy the canonical subject position, but, unlike nominative subjects, are lexically case-marked and typically do not control verb agreement (Andrews 1976; Þráinsson 1979; Zaenen et al. 1985, amongst many others). What is special about quirky subjects is that, in many languages, they exhibit a *proper subset* of the subjecthood properties exhibited by canonical nominative subjects. To illustrate, compare quirky subjects in Icelandic and Hindi-Urdu (henceforth Hindi). In Icelandic, quirky subjects can bind subject-oriented anaphora (3a) and be PRO (3b).<sup>1</sup>

(3) *Icelandic*

- a. Henni<sub>1</sub> þykir [bróðir sinn<sub>1/\*2</sub>] leiðinlegur  
 she.DAT thinks brother.NOM SELF.POSS boring  
 ‘She<sub>1</sub> thinks her<sub>1/\*2</sub> brother boring’ [Zaenen et al. 1985:450]
- b. Ég<sub>1</sub> vonast til [PRO<sub>1</sub> að vanta ekki peninga]  
 I.NOM hope for PRO.ACC to lack not money.ACC  
 ‘I hope not to lack money’ [Zaenen et al. 1985:454]

In Hindi, quirky subjects can also bind subject-oriented anaphora (4a), like their Icelandic counterparts, but they are unable to be PRO (4b).

(4) *Hindi*

- a. Ram-ko<sub>1</sub> [apni<sub>1/\*2</sub> bahin] dikh-ii  
 Ram-DAT SELF.POSS sister.NOM appear-PFV  
 ‘Ram<sub>1</sub> saw his<sub>1/\*2</sub> sister’
- b. \*Ravi<sub>1</sub> [PRO<sub>1</sub> Rina pasand aa-naa] nahī caah-taa  
 Ravi.NOM PRO.DAT Rina.NOM like come-INF NEG want-HAB  
*Intended:* ‘Ravi doesn’t want to like Rina’

The contrast between Icelandic and Hindi quirky subjects shows that the distribution of subjecthood properties is more nuanced than nominative subjects would lead one to believe. Crucially, quirky subjects reveal that subjecthood properties do *not* cluster together, a fact that is suppressed if one only looks at nominative subjects. One of the central contributions of this paper, as will be discussed below, is expounding on this more nuanced distribution. Nevertheless, any nonclustered distribution is inherently problematic for theories of subjecthood that treat it as a unitary property, namely both SS and SP taken at face value.

The SS literature has not addressed the problem raised by quirky subjects, most likely because it is not straightforward how one would extend the structural approach to them. There are, though,

<sup>1</sup> Unless indicated otherwise, judgments are due to my informants. Transcription and glossing conventions have been unified across sources.

a handful of responses, e.g. [McFadden \(2004\)](#); [Sigurðsson \(2004\)](#); [Preminger \(2014\)](#). The defining assumption underlying these responses is that quirky subjects in languages like Icelandic are “true subjects”, while quirky subjects in languages like Hindi are not, because the former, but not the latter possess, more or less, all of the possible subjecthood properties of nominative subjects. Quirky subjects in languages like Hindi hence do not factor into the theory of subjecthood because they are not subjects. This analysis allows one to maintain that subjecthood is epiphenomenal of the particular syntactic position of a subject. However, it fails to account for why quirky subjects in languages like Hindi have any subjecthood properties at all. They are relegated to the status of an indirect object, an assumption that is never justified nor supported by the data. On the other hand, the SP literature has embraced the problem raised by quirky subjects. The response has been to divide up the subjecthood primitive. Each subjecthood property is its own primitive, and subjects possess at least one of these primitives (e.g. [Mohanani 1994](#); [Eyþórsson and Barðdal 2005](#); [Falk 2006](#)). The idea behind this analysis is that subjecthood is on a continuum: Hindi quirky subjects are less subject-like than Icelandic quirky subjects because they possess fewer subjecthood properties. Crucially, this view predicts a *genuinely gradient* distribution of subjecthood properties, namely that we should find DPs exhibiting every logically possible combination. We will see that this prediction does not hold up typologically. Against the backdrop of the varied behaviour of quirky subjects crosslinguistically, the existing theories of subjecthood are unsatisfactory because they either force one to abandon the premise that grammatical functions are not theoretical primitives (SP) or to leave a large amount of data unaccounted for (SS).

This paper develops a theory of subjecthood that accounts for the varied behaviour of quirky subjects crosslinguistically, while preserving the SS enterprise of reducing subjecthood to a purely structural phenomenon. As a result, there is no such thing as a subject in the eyes of the grammar. This paper divides into two parts. The first part lays out the empirical foundation of the theory. It presents the novel discovery that the distribution of subjecthood properties obeys the implicational hierarchy in (5), which I term the QUIRKY SUBJECT HIERARCHY (QSH).

(5) **QUIRKY SUBJECT HIERARCHY (QSH)**

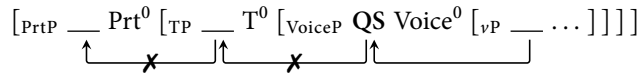
binding  $\ll$  PRO  $\ll$  reduced relatives

(where  $x \ll y = y \rightarrow x$ )

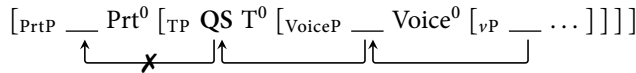
The empirical motivation for the QSH comes from a crosslinguistic study of quirky subjects. Quirky subjects are the window into the distribution of subjecthood properties because they can exhibit a proper subset of the subjecthood properties and this set can vary across languages. Quirky subjects in Hindi, German, Basque, Icelandic, and Laz were submitted to three subjecthood diagnostics: (i) binding subject-oriented anaphora, (ii) being PRO, and (iii) undergoing relativisation in reduced relatives. The QSH reflects two implications discovered in the study: (i) if a DP can undergo relativisation in reduced relatives, it can also be PRO and bind subject-oriented anaphora and (ii) if a DP can be PRO, it can also bind subject-oriented anaphora. Crucially, the existing SS and SP approaches to subjecthood cannot straightforwardly account for the QSH in their current forms because the typologies that they predict either overgenerate or undergenerate. What the QSH reveals is that even though subjecthood properties do not cluster together, they are also not genuinely gradient. This requires a new approach to subjecthood.

The second part presents a movement theory of subjecthood. I argue that the QSH mirrors how high a DP has raised in the functional sequence (also called the clausal spine). Subjecthood properties are distributed across heads in the functional sequence, mirroring the order of the QSH. To possess a subjecthood property, a DP must raise to the specifier position of the associated head. In particular, I propose that Voice<sup>0</sup> and T<sup>0</sup> are associated with binding subject-oriented anaphora and being PRO respectively, while reduced-relative formation is associated with the special head Prt<sup>0</sup> that is projected above T<sup>0</sup> in a reduced relative. The QSH derives from the requirement that a DP move cyclically through these subjecthood positions. Quirky subjects differ from nominative subjects in that their final landing site may be an intermediate subjecthood position, yielding a proper subset of the subjecthood properties. Crosslinguistically, quirky subjects vary in how high they raise in the functional sequence. This point of variation yields three types of quirky subjects: Hindi-type (6), Icelandic-type (7), and Laz-type (8).

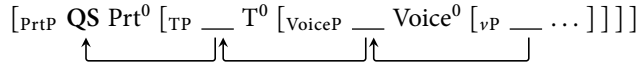
(6) *Hindi-type quirky subjects*



(7) *Icelandic-type quirky subjects*



(8) *Laz-type quirky subjects*



Hindi-type quirky subjects (6) can only raise as high as [Spec, VoiceP]; therefore, their only subjecthood property is being able to bind subject-oriented anaphora. Icelandic-type quirky subjects (7), on the other hand, can raise to [Spec, TP] through [Spec, VoiceP]; therefore, they can both bind subject-oriented anaphora and be PRO. Finally, Laz-type quirky subjects (8) also raise to [Spec, TP] through [Spec, VoiceP], but, in addition, they can raise to [Spec, PrtP]—when it is projected—to form a reduced relative. Nominative subjects can undergo all three movement steps and thus always possess the complete set of subjecthood properties.

According to the movement theory of subjecthood developed in this paper, quirky subjects are not so quirky, but partially derived variants of ordinary nominative subjects. This theory both captures the diverse behaviour of quirky subjects across languages and yet maintains that subjecthood is a purely structural phenomenon. Therefore, there is no such thing as a subject in the eyes of the grammar. Crucially, this theory of subjecthood is only possible in light of the QSH. The QSH reveals that subjecthood properties are distributed hierarchically, a distribution that is amenable to an analysis in terms of syntactic structure.

The argumentation proceeds as follows: Section 2 introduces the properties of canonical nominative subjects crosslinguistically, which are used as diagnostics to investigate quirky subjects. The three types of quirky subjects that the diagnostics identify are presented in section 3. The empirical generalisation to emerge from this study is the Quirky Subject Hierarchy (QSH), discussed in section 4. To account for the QSH, section 5 develops a movement theory of subjecthood where

the QSH mirrors how high a DP has raised in the functional sequence. Section 6 discusses the ramifications of the QSH for the nature of subjecthood more broadly. Section 7 concludes.

## 2 Subjecthood properties

This section identifies three special properties of canonical nominative subjects: binding subject-oriented anaphora, being PRO, and undergoing relativisation in reduced relative clauses. To facilitate discussion in the next section, I cast these properties as SUBJECTHOOD DIAGNOSTICS. In this sense, the first two properties as subjecthood diagnostics originate in Zaenen et al. (1985), while the third is novel as a diagnostic. Following convention, I assume that bearing nominative case and controlling verb agreement are not intrinsic properties of subjects (see Zaenen et al. 1985). At the end of the section, I discuss two salient questions: (i) whether there are other crosslinguistic subjecthood properties and (ii) what is the role of language-specific subjecthood properties.

### 2.1 Binding subject-oriented anaphora

Many languages have a special class of anaphora whose antecedent must be the subject, which are called SUBJECT-ORIENTED ANAPHORA (SOAs). The best method to determine whether a given anaphor is subject-oriented is to test its binding possibilities in the theme position of a ditransitive. If the anaphor can only be bound by the subject, it is subject-oriented; otherwise, namely if it can be bound by the goal, it is not subject-oriented. For example, the Hindi possessive anaphor *apnaa* must be bound by the subject and cannot be bound by the goal (9). Thus, Hindi *apnaa* is a SOA.

(9) *Hindi*

*Ram-ne<sub>1</sub> Mohan-ko<sub>2</sub> [apni<sub>1/\*2/\*3</sub> kitaab ] di-i*  
*Ram-ERG Mohan-DAT SELF book.NOM give-PFV*  
 ‘Ram<sub>1</sub> gave Mohan<sub>2</sub> his<sub>1/\*2/\*3</sub> book’

Compare Hindi *apnaa* with English *herself/himself*. It can take either the subject or the goal as an antecedent (10). As a result, English *herself/himself* is not a SOA.

- (10) a. *Mary<sub>1</sub> assigned Sue<sub>2</sub> herself<sub>1/2/\*3</sub>.*  
 b. *John<sub>1</sub> assigned Bill<sub>2</sub> himself<sub>1/2/\*3</sub>.*

Therefore, the ability to bind a SOA is a subjecthood property. We can exploit this property as a diagnostic for subjecthood, resulting in the BINDING DIAGNOSTIC (11).

(11) **BINDING DIAGNOSTIC**

If XP can bind subject-oriented anaphora, XP is a subject.

There is one noteworthy instance where the Binding Diagnostic has the potential to produce a false negative result. In many languages, the distribution of anaphora is restricted by the Anaphor

Agreement Effect (AAE): anaphors do not occur in syntactic positions construed with agreement (Rizzi 1990; Woolford 1999). This restriction has the effect of prohibiting nominative anaphors because the syntactic position receiving nominative case is typically also a position construed with agreement. Therefore, when the subject is a quirky subject, the AAE might independently prevent a SOA from occurring as a nominative object. However, there are two ways to obviate the AAE when applying the Binding Diagnostic. First, one can use possessive SOAs, if the language has them. Second, the SOA can be embedded within a noun phrase, e.g. *a picture of herself*. Although these so-called *picture*-NPs may introduce their own complicating factors (e.g. Pollard and Sag 1992; Reinhart and Reuland 1993), they remain the only means of circumventing the AAE in many languages. Notwithstanding, we will be able to establish the core empirical generalisations in this paper without appealing to *picture*-NPs.

## 2.2 Being PRO

It is well-known that, in control structures, it is always the subject position that is controlled. PRO must be the subject and can never be an object or other argument.<sup>2</sup> This property of PRO holds regardless of whether it is subject-controlled (12), object-controlled (13), or arbitrary (14).

### (12) Subject-controlled

- a. *Susan*<sub>1</sub> wanted [ *PRO*<sub>1</sub> to hug Mary ].
- b. \**Susan*<sub>1</sub> wanted [ (Mary) to hug *PRO*<sub>1</sub> ].

### (13) Object-controlled

- a. Fernanda told *Susan*<sub>1</sub> [ *PRO*<sub>1</sub>to hug Mary ].
- b. \*Fernanda told *Susan*<sub>1</sub> [ (Mary) to hug *PRO*<sub>1</sub> ].

<sup>2</sup> There are two classic purported counterexamples to the generalisation that PRO must be a subject, both of which have been dispelled in more recent research. The first comes from the Philippine languages. Like most Austronesian languages, Philippine languages have a voice system that alters the case marking and linear order of the arguments in the clause. In a nonfinite clause, only the *thematic agent* can be PRO. Given the voice system, this argument is not necessarily nominative. Under the classic assumption that nominative case and being the subject covary, this would appear to constitute a counterexample to the generalisation that PRO must be a subject (Kroeger 1993). However, this counterexample is only valid insofar as nominative case and subjecthood covary, an assumption that has since been abandoned following Zaenen et al. (1985). For recent work on Austronesian voice systems where case and subjecthood do not covary, see Richards (2000) and Aldridge (2004, *et seq.*). The second purported counterexample comes from Dyirbal, which has been claimed to exhibit syntactic ergativity in control constructions (Anderson 1976; Levin 1983). Thus, when a transitive predicate is embedded in a nonfinite clause, the object but not the subject can be PRO. Legate (2008, 2009) revisits the original data from Dixon (1972, 1994) and argues that the purported control structures (i) are actually instances of topic drop, a well-attested process in Dyirbal, and (ii) do not exhibit the hallmark characteristics of control. Therefore, there is no support for analysing the relevant structures as involving control. To my knowledge, no other language has been reported to exhibit syntactic ergativity in control constructions. Consequently, I do not consider these two phenomena as counterexamples to the generalisation that PRO must be a subject.

(14) *Arbitrary PRO*

- a. [  $\text{PRO}_{\text{ARB}}$  to hug Mary ] is fantastic.
- b. \* [ (Mary) to hug  $\text{PRO}_{\text{ARB}}$  ] is fantastic.

Therefore, the ability to be PRO is a subjecthood property. We can exploit the distribution of PRO as a diagnostic for subjecthood, resulting in the PRO DIAGNOSTIC (15).<sup>3,4</sup>

(15) **PRO DIAGNOSTIC**

If XP can be PRO, XP is a subject.

It is worth highlighting that the PRO Diagnostic is the gold standard in the literature for whether a quirky subject is a “true” subject. I do not attach so much significance to any single diagnostic; see section 4 for discussion.

2.3 **Reduced relatives**

In reduced relative clauses, the relativised element can only occur in the subject position (16a). It is impossible to relativise on any other position, such as the goal (16b) or the theme (16c).

- (16) a. the *Basque*<sub>1</sub> [ \_\_\_\_<sub>1</sub> giving Stefan the rutabaga ]
- b. \*the *German*<sub>1</sub> [ Jon Ander giving \_\_\_\_<sub>1</sub> the rutabaga ]
- c. \*the *rutabaga*<sub>1</sub> [ Jon Ander giving Stefan \_\_\_\_<sub>1</sub> ]

Therefore, the ability to be relativised on in a reduced relative is a subjecthood property. We can exploit this property as a diagnostic for subjecthood, resulting in the REDUCED RELATIVE DIAGNOSTIC (17).<sup>5</sup>

(17) **REDUCED RELATIVE DIAGNOSTIC**

If XP can be relativised on in reduced relatives, XP is a subject.

To my knowledge, this test has not been previously used as a subjecthood diagnostic, and the distributional properties of reduced relatives have overall received little attention in the literature (see Bhatt 2006).

<sup>3</sup> A potential objection to the PRO Diagnostic is the relatively common assumption that nonfinite clauses cannot license nominative case. If this were true, it would independently prevent dative–nominative structures from occurring in nonfinite clauses, not because the quirky subject could not be PRO, but because the nominative object would be unlicensed. However, as we will see in section 3, there are in fact languages that allow quirky subjects to be PRO even in the presence of a nominative object, which should quell this potential objection.

<sup>4</sup> The ability to *control* PRO is not a subjecthood property. This is a common mistake made in various papers. It is well-known that objects can control PRO, as shown in (13).

<sup>5</sup> The Reduced Relative Diagnostic faces the same type of potential objection mentioned in fn. 3 for the PRO Diagnostic: reduced relatives may not be able to license nominative case, which would independently prevent dative–nominative structures from occurring in reduced relatives. However, as we will see in section 3, there are in fact languages that allow dative–nominative structures in reduced relative, which should quell this potential objection.



## 2.4 Are there other subjecthood properties?

The previous subsections identified three subjecthood properties. But are there other subjecthood properties? This question divides into two separate questions: (i) Are there other *crosslinguistic* subjecthood properties? (ii) What is the role of language-specific subjecthood properties? Below, I address each of these questions in turn under the pretense of considering the other subjecthood diagnostics employed in [Zaenen et al. \(1985\)](#). First, however, it is important to foreshadow the role that the subjecthood properties identified above will play in this paper. Section 4 will show that entailment relations hold *amongst* the three different subjecthood properties. Therefore, the question of whether there are other subjecthood properties should be asked against the backdrop of what relationships might these other potential subjecthood properties bear to the three identified above. For reasons that will be elaborated on below, this paper does not assume any subjecthood properties other than the three identified above. However, the theory of subjecthood developed in this paper is compatible with the existence of other subjecthood properties. Situating these other subjecthood properties amongst the three identified above would require empirical work beyond the scope of this paper.

[Zaenen et al.](#) employ two other subjecthood diagnostics that are potentially applicable crosslinguistically: raising and conjunction reduction. For raising, they only employ subject-to-object raising, but subject-to-subject raising and passive raising are equally relevant. Raising can only target the highest accessible DP, which allows it to target subjects but not objects. Under this conception, the ability to undergo raising is a subjecthood property. This is reinforced by the fact that nothing *a priori* precludes additional restriction on whether the highest DP is eligible to be a *successful* target (see [Chomsky's \(2000\)](#) defective intervention). [Zaenen et al.](#) show that, in Icelandic, both nominative subjects and quirky subjects can undergo raising. Thus, they pattern together to the exclusion of objects. The complication with raising as a subjecthood diagnostic is that many—perhaps most—languages with quirky subjects are SOV languages. In SOV languages, it is difficult to diagnose raising, if not impossible. First, it would have no effect on linear order.<sup>6</sup> Second, the semantic effects of raising, e.g. binding and scope, are unreliable given the availability of A-scrambling in many of these languages. A-scrambling is not restricted to subjects and can typically achieve the same semantic effects as raising. Crucial for [Zaenen et al.](#), Icelandic is an SVO languages without scrambling (modulo object shift), which makes raising easy to diagnose and a suitable subjecthood diagnostic for Icelandic. In summary, the ability to undergo raising may be a crosslinguistic subjecthood property, but the result is inconclusive in many language, rendering it difficult to establish how raising fits amongst the other three properties identified above.

Conjunction reduction is when the subject of a coordinated clause can be omitted under identity with the subject of the preceding conjunct, e.g. *John visited Minnesota and ~~John~~ saw a loon.*<sup>7</sup> As conjunction reduction cannot target objects, it can be viewed as a subjecthood property. The relevant points of interest are (i) whether a quirky subject can be omitted under identity with a nominative subject (18a) and (ii) whether a quirky subject can itself antecede an omitted nominative

<sup>6</sup> SOV languages also tend to lack the rigid adverb placement common of SVO languages.

<sup>7</sup> I set aside the issue of whether conjunction reduction is an elliptical process or the coordination of VPs. However, this issue further highlights how conjunction reduction is not a reliable subjecthood diagnostic.

subject (18b).

- (18) a. [ **NOM-SUBJ** [VP ... ] ] and [ **QS** [VP ... ] ]  
 b. [ **QS** [VP ... ] ] and [ **NOM-SUBJ** [VP ... ] ]

Zaenen et al. show that both (18a) and (18b) are possible in Icelandic. The complication with conjunction reduction as a subjecthood diagnostic is that some languages impose a morphological matching constraint wherein both subjects must match in case for the second to be omitted. For example, in Hindi, it is possible to omit a quirky subject under identity with another quirky subject (19a), but not with a nominative subject (19b).

(19) *Hindi*

- a. [ **mujhe** Rina pasand he ] aur [ **mujhe** Mina naapasand he ]  
 I.DAT Rina.NOM like be.PRS and I.DAT Mina.NOM dislike be.PRS  
 ‘I like Rina and I do not like Mina’
- b. \*[ **Ravi** Billu-ko daant-egaa ] lekin [ **Ravi-ko** Billu pasand he ]  
 Ravi.NOM Billu-DOM scold-FUT but Ravi.DAT Billu.NOM like be.PRS  
*Intended:* ‘Ravi will scold Billu but he likes Billu’

What is unclear is whether data like (18) and (19) reveal something about subjecthood or something about how coordination works in a given language. Consequently, conjunction reduction is not a reliable crosslinguistic diagnostic for subjecthood.

Most existing research on quirky subjects has focused on quirky subjects in a *particular* language, often in comparison to Icelandic quirky subjects. As such, they employ subjecthood diagnostics that are specific to that language. For example, Zaenen et al. employ three diagnostics to differentiate subjects and V2-topics in Icelandic. These diagnostics are important in the context of Icelandic because they show that quirky subjects are not just fronted V2-topics. However, these diagnostics are only applicable to Icelandic (and perhaps Faroese), not even other V2-languages like German. Unlike the previous research on quirky subjects, this paper is foremost interested in quirky subjects *crosslinguistically*. Although language-specific subjecthood diagnostics are useful for mitigating language-internal factors, e.g. Icelandic subject vs. topic, they do not factor into the typology of quirky subjects simply because they are not applicable crosslinguistically. In an ideal world, a language-specific subjecthood diagnostic would tract with one of the crosslinguistic diagnostics such that they would test the same underlying property, e.g. whether the DP has moved to a particular syntactic position. However, such a deduction is often difficult to draw.<sup>8</sup>

<sup>8</sup> One way to push this idea a little farther would be to investigate a language where different types of quirky subjects behave differently from each other. This investigation might allow language-specific diagnostics for that language to be situated with respect to the crosslinguistic subjecthood diagnostics and thus more reliably tied to one of them.

### 3 Types of quirky subjects

The subjecthood diagnostics from section 2 were applied to quirky subjects in Hindi, German, Basque, Icelandic, and Laz. This study discovered that quirky subjects divide into three types: Hindi-type, Icelandic-type, and Laz-type. For the sake of exposition, two simplifications are made in the presentation of the data. First, in this section, I only include the data from Hindi, Icelandic, and Laz themselves. German and Basque are included in the [appendix](#), along with the results of a literature-based survey of eleven additional languages. Second, the quirky subjects used in the main body of this paper are primarily experiencer subjects.<sup>9</sup> These occur in dative–nominative structures where the experiencer is dative and the theme is nominative.<sup>10</sup> In the [appendix](#), there is discussion of ergative subjects in Hindi, Laz, and Basque. The other types of quirky subjects in these languages are not included in this paper.

#### 3.1 Hindi-type

Hindi-type quirky subjects can bind SOAs (20), but cannot be PRO (21) or undergo relativisation in reduced relatives (22).

(20) *Binding Diagnostic*

Ram-ko<sub>1</sub> [apnii<sub>1/\*2</sub> bahin ] dikh-ii  
 Ram-DAT SELF.POSS sister.NOM appear-PFV  
 ‘Ram<sub>1</sub> saw his<sub>1/\*2</sub> sister’

(21) *PRO Diagnostic*

\*Ravi<sub>1</sub> [PRO<sub>1</sub> Rina pasand aa-naa ] nahī caah-taa  
 Ravi.NOM PRO.DAT Rina.NOM like come-INF NEG want-HAB  
*Intended:* ‘Ravi doesn’t want to like Rina’

(22) *Reduced Relative Diagnostic*

\*[ \_\_\_\_<sub>1</sub> coṭ lag-aa ] laṛkaa<sub>1</sub> ...  
 \_\_\_\_<sub>1</sub>.DAT hurt.NOM contact-PFV boy.NOM  
*Intended:* ‘the hurt boy ...’

As shown previously in (9), Hindi *apnaa* is subject-oriented because, in a ditransitive, it must be bound by the subject and cannot be bound by the goal.

Other languages with Hindi-type quirky subjects include German and Basque, in addition to Gujarati, Hungarian, Kannada, Korean, Malayalam, Russian, and Spanish; see the [appendix](#).

<sup>9</sup> In Hindi and Icelandic, I use other types of quirky subjects for the Reduced Relative Diagnostic because experiencer predicates are stative and stative predicates independently form poor reduced relatives in these languages.

<sup>10</sup> In Icelandic, experiencer subjects may bear lexical cases other than dative. I do not attach any significance to the particular case, only that it is lexical (or inherent, in the sense of Woolford (2006)—I do not draw a distinction).

### 3.2 Icelandic-type

Icelandic-type quirky subjects can bind SOAs (23) and be PRO (24), but cannot undergo relativisation in reduced relatives (25).

(23) *Binding Diagnostic*

Henni<sub>1</sub> þykir [bróðir {sinn<sub>1/\*2</sub> / hennar<sub>\*1/2</sub>}] leiðinlegur  
 she.DAT thinks brother.NOM SELF.POSS PRON.POSS boring  
 ‘She<sub>1</sub> thinks {her<sub>1/\*2</sub> / her<sub>\*1/2</sub>} brother boring’ [Zaenen et al. 1985:450]

(24) *PRO Diagnostic*

Ég<sub>1</sub> vonast til [PRO<sub>1</sub> að vanta ekki peninga ]  
 I.NOM hope for PRO.ACC to lack not money.ACC  
 ‘I hope not to lack money’ [Zaenen et al. 1985:454]

(25) *Reduced Relative Diagnostic*

\*[ \_\_\_\_<sub>1</sub> ekni ] billinn<sub>1</sub> ...  
 \_\_\_\_<sub>1</sub>.DAT driven car.the.NOM  
 Intended: ‘the driven car ...’ [Einar Freyr Sigurðsson, p.c.]

The subject-orientation of *sinn* is circumstantial. For most Icelandic speakers, subject antecedence of *sinn* is preferred, but object antecedence is possible (Bráinsson 1979; Maling 1986). However, what is not possible is a pronominal possessor that is coreferent with the subject (26).

(26) Jón<sub>1</sub> rétti Haraldi<sub>2</sub> [fötin {sin<sub>1/2/\*3</sub> / hans<sub>\*1/2/3</sub>}]  
 Jón.NOM handed Harald.DAT clothes.the.ACC SELF.POSS PRON.POSS  
 ‘Jón<sub>1</sub> handed Harold<sub>2</sub> {his<sub>1/2/\*3</sub> / his<sub>\*1/2/3</sub>} clothes’ [Bráinsson 1979:291]

Therefore, the subject-orientation of *sinn* is that for the subject, its use is obligatory, rather than optional. This property holds for Icelandic quirky subjects, as shown above in (23).

Icelandic quirky subjects have been widely discussed in the literature (Andrews 1976; Bráinsson 1979; Zaenen et al. 1985; Sigurðsson 1989, 2004; amongst others); see Bráinsson (2007) for an overview. They are often touted as possessing all of the subjecthood properties of canonical nominative subjects. However, the Reduced Relative Diagnostic shows that this characterisation does not hold. To further emphasise this point, there is a minimal pair with (25) that is grammatical. Icelandic has two verbs that mean ‘to drive’: *aka* which takes a dative object (27a) and *keyra* which takes an ordinary accusative object (27b).

- (27) a. Ég ók bílnum  
 I.NOM drove car.the.DAT  
 ‘I drove the car’  
 b. Ég keyrði bílinn  
 I.NOM drove car.the.ACC  
 ‘I drove the car’

[Einar Freyr Sigurðsson, p.c.]

1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.

1.  $\frac{1}{2}$  2.  $\frac{1}{2}$  3.  $\frac{1}{2}$  4.  $\frac{1}{2}$  5.  $\frac{1}{2}$  6.  $\frac{1}{2}$  7.  $\frac{1}{2}$  8.  $\frac{1}{2}$  9.  $\frac{1}{2}$  10.  $\frac{1}{2}$  11.  $\frac{1}{2}$  12.  $\frac{1}{2}$  13.  $\frac{1}{2}$  14.  $\frac{1}{2}$  15.  $\frac{1}{2}$  16.  $\frac{1}{2}$  17.  $\frac{1}{2}$  18.  $\frac{1}{2}$  19.  $\frac{1}{2}$  20.  $\frac{1}{2}$  21.  $\frac{1}{2}$  22.  $\frac{1}{2}$  23.  $\frac{1}{2}$  24.  $\frac{1}{2}$  25.  $\frac{1}{2}$  26.  $\frac{1}{2}$  27.  $\frac{1}{2}$  28.  $\frac{1}{2}$  29.  $\frac{1}{2}$  30.  $\frac{1}{2}$  31.  $\frac{1}{2}$  32.  $\frac{1}{2}$  33.  $\frac{1}{2}$  34.  $\frac{1}{2}$  35.  $\frac{1}{2}$  36.  $\frac{1}{2}$  37.  $\frac{1}{2}$  38.  $\frac{1}{2}$  39.  $\frac{1}{2}$  40.  $\frac{1}{2}$  41.  $\frac{1}{2}$  42.  $\frac{1}{2}$  43.  $\frac{1}{2}$  44.  $\frac{1}{2}$  45.  $\frac{1}{2}$  46.  $\frac{1}{2}$  47.  $\frac{1}{2}$  48.  $\frac{1}{2}$  49.  $\frac{1}{2}$  50.  $\frac{1}{2}$  51.  $\frac{1}{2}$  52.  $\frac{1}{2}$  53.  $\frac{1}{2}$  54.  $\frac{1}{2}$  55.  $\frac{1}{2}$  56.  $\frac{1}{2}$  57.  $\frac{1}{2}$  58.  $\frac{1}{2}$  59.  $\frac{1}{2}$  60.  $\frac{1}{2}$  61.  $\frac{1}{2}$  62.  $\frac{1}{2}$  63.  $\frac{1}{2}$  64.  $\frac{1}{2}$  65.  $\frac{1}{2}$  66.  $\frac{1}{2}$  67.  $\frac{1}{2}$  68.  $\frac{1}{2}$  69.  $\frac{1}{2}$  70.  $\frac{1}{2}$  71.  $\frac{1}{2}$  72.  $\frac{1}{2}$  73.  $\frac{1}{2}$  74.  $\frac{1}{2}$  75.  $\frac{1}{2}$  76.  $\frac{1}{2}$  77.  $\frac{1}{2}$  78.  $\frac{1}{2}$  79.  $\frac{1}{2}$  80.  $\frac{1}{2}$  81.  $\frac{1}{2}$  82.  $\frac{1}{2}$  83.  $\frac{1}{2}$  84.  $\frac{1}{2}$  85.  $\frac{1}{2}$  86.  $\frac{1}{2}$  87.  $\frac{1}{2}$  88.  $\frac{1}{2}$  89.  $\frac{1}{2}$  90.  $\frac{1}{2}$  91.  $\frac{1}{2}$  92.  $\frac{1}{2}$  93.  $\frac{1}{2}$  94.  $\frac{1}{2}$  95.  $\frac{1}{2}$  96.  $\frac{1}{2}$  97.  $\frac{1}{2}$  98.  $\frac{1}{2}$  99.  $\frac{1}{2}$  100.  $\frac{1}{2}$

## 4 Quirky Subject Hierarchy

The existence of different types of quirky subjects shows that **there is not a unitary property of subjecthood** (see also McCloskey 1997). Otherwise, if there were, the results of the diagnostics would be undifferentiated. A DP would either pass every diagnostic or fail every diagnostic because each diagnostic would be testing for the same underlying property. Thus, we would only expect to find Laz-type quirky subjects, which pass every diagnostic. Crucially, we would not expect to find any DPs that pass *some* diagnostics, but fail others—as Hindi-type and Icelandic-type quirky subjects do. The findings in section 3 reveal that each subjecthood diagnostic identifies a *unique* property, one that we canonically associate with subjecthood.

However, a generalisation does emerge from the data. It is not the case that the subjecthood properties exhibited by quirky subjects are distributed at random. Rather, they obey an *implicational hierarchy*. For a set of properties  $x_1 \ll x_2 \ll \dots \ll x_n$ , a quirky subject has property  $x_{i+1}$  iff it has property  $x_i$ . I call this implicational hierarchy the QUIRKY SUBJECT HIERARCHY (QSH) (33).

- (33) QUIRKY SUBJECT HIERARCHY  
 binding  $\ll$  PRO  $\ll$  reduced relatives (where  $x \ll y = y \rightarrow x$ )

The QSH captures two empirical generalisations: (i) If a DP can undergo relativisation in reduced relatives, it can also be PRO and bind SOAs. (ii) If a DP can be PRO, it can also bind SOAs. Crucially, the QSH typologically predicts *all and only* the three types of quirky subjects that were identified in section 3: (i) Hindi-type quirky subjects that can only bind SOAs; (ii) Icelandic-type quirky subjects that can bind SOAs and be PRO, but not undergo relativisation in reduced relatives; and (iii) Laz-type quirky subjects that can do all three. This typology is schematised in (34).

- (34) *Typology of (quirky) subjects*
- |   |  |
|---|--|
| binding $\ll$ PRO $\ll$ reduced relatives |  |
| └──────────┘                              |  |
| Hindi-type                                |  |
| └──────────┘                              |  |
| Icelandic-type                            |  |
| └──────────┘                              |  |
| Laz-type, Nominative subjects             |  |

Even though the QSH is based on an investigation of quirky subjects, it applies to all DPs. This follows from the fact that a DP possessing none or all of the subjecthood properties vacuously obeys the QSH because the entailments are not violated. Nominative subjects sit on the highest end of the QSH because they possess all of the properties. Objects sit on the lowest end of the QSH because they possess none of the properties. Quirky subjects are unique because they sit somewhere in the middle, the exact position depending on the type of quirky subject and the language. This variation provides a window through which to probe for these kinds of entailments, hence making quirky subjects the interesting empirical domain of inquiry.

Typologically, the QSH also rules out DPs that skip around on the hierarchy, e.g. can be PRO but not bind SOAs. This excludes all other logically possible types of subjects. These predictions are listed in (35).

(35) *Types of (quirky) subjects predicted **not** to exist*

- a. Can be relativised on reduced relatives, but not be PRO.  
 \*binding << PRO << reduced relatives  
 \* binding << PRO << reduced relatives
- b. Can be relativised on reduced relatives, but not bind subject-oriented anaphora.  
 \*binding << PRO << reduced relatives  
 \*binding << PRO << reduced relatives
- c. Can be PRO, but not bind subject-oriented anaphora.  
 \*binding << PRO << reduced relatives  
 \*binding << PRO << reduced relatives

The typological predictions in (34) and (35) have been confirmed against a survey of the existing literature on quirky subjects in languages other than those investigated in this paper. The results are summarised in the [appendix](#). Insofar as the data are available, quirky subjects in these languages conform to the QSH. Although this typological survey is far from a complete picture of the world's languages, it is the most extensive survey of its kind. Furthermore, the QSH outlines a programme under which to study quirky subjects in future research: apply the subjecthood diagnostics from section 2 to a language's quirky subjects and see whether they conform to the QSH.

There are two final points worth mentioning about the QSH: First, the existing SS and SP approaches cannot straightforwardly account for the QSH in their current forms. The typologies that they predict either overgenerate or undergenerate. This issue is discussed in section 6. Second, the QSH eliminates the possibility of a (unitary) theoretical primitive for subjects, but it does not define what we should call a “subject”. This is an uninteresting question, but one that has been posed to me many times in response to this research. This question is uninteresting because the answer would be arbitrary.<sup>11</sup> We could say that the ability to bind SOAs is necessary and sufficient to be a “subject”. We could also just as easily say that binding SOAs is not enough and the ability to be PRO is necessary as well. The choice is inconsequential because—to echo a point made in the introduction—a theory of subjecthood is a theory about the *distribution of subjecthood properties*. Regardless of what we call a “subject”, the QSH needs explained, and this need will take up the next section. For the sake of convenience, I will continue to refer to every DP with at least one subjecthood property as a “subject”, but I emphasise that this choice is arbitrary, yet convenient.

<sup>11</sup> Sigurðsson (2002) makes a similar point. Moreover, Barðdal (2006) observes that the criteria for being considered a “subject” differ from researcher to researcher based partly on their own theoretical purposes. For example, in the Icelandic literature, nominative case has never been considered a condition for being a “subject” because the aim is to investigate the subject-like properties of quirky subjects. However, in the German literature, nominative case has generally been considered a condition for being a “subject”, a priori precluding quirky subjects from the label. These biases exemplify the arbitrariness in what is called a “subject”.

## 5 Movement theory of subjecthood

This section develops a movement theory of subjecthood that accounts for the QSH, while preserving the SS enterprise of reducing subjecthood to a purely structural phenomenon. Section 5.1 introduces the proposal that a DP obtains subjecthood properties by cyclically moving through a series of subjecthood positions. In section 5.2, I propose that these positions are [Spec, VoiceP], [Spec, TP], and [Spec, PrtP], for binding subject-oriented anaphora, being PRO, and reduced relatives respectively. In section 5.3, I argue that the crosslinguistic variation of quirky subjects is the result of quirky subjects differing across languages in how high they raise in the clause. Section 5.4 discusses reversible dative–nominative structures in Hindi, which further support the role of movement in subjecthood.

### 5.1 Proposal

While the QSH encodes the entailments that hold between the subjecthood properties, it is agnostic about *how* these entailments are enforced. To account for the QSH, I propose that a subject cyclically moves through a series of SUBJECTHOOD POSITIONS. Each subjecthood position is associated with one subjecthood property. The order of these positions in the functional sequence (also called the clausal spine) mirrors the order of the QSH. Moving higher in the clause translates to exhibiting more subjecthood properties, while remaining lower translates to exhibiting fewer subjecthood properties. Therefore, the set of subjecthood properties that a DP exhibits is a function of how high the DP raises in the functional sequence. This proposal is formalised in the SUBJECT MOVEMENT CONJECTURE (SMC) in (36).<sup>12</sup>

#### (36) SUBJECT MOVEMENT CONJECTURE (SMC)

- a. Let  $fseq$  be the functional sequence  $\langle X_n > X_{n-1} > \dots > X_2 > X_1 \rangle$  such that  $X_i$  takes  $X_{i-1}$  as its complement.
- b. Let  $\mu$  be the mapping from functional heads to properties  $\{\langle X_1, p_1 \rangle, \langle X_2, p_2 \rangle, \dots, \langle X_n, p_n \rangle\}$  such that  $p_1 \ll p_2 \ll \dots \ll p_n$ .
- c. Given  $fseq$  and  $\mu$ , a DP base-merged in [Spec,  $X_k P$ ] bears  $p_i$  only if it moves to [Spec,  $X_i P$ ] through [Spec,  $X_j P$ ] for all  $j$  such that  $k < j < i$ .
- d. A DP must be (re)merged in [Spec,  $X_n P$ ] to bear  $p_n$ .

The intuition behind the SMC (36) is to map an implicational hierarchy onto the syntactic structure and derive the entailments via cyclic movement. In section 5.3, the crosslinguistic variation of quirky subjects will be derived by quirky subjects differing across languages in how high they raise in the functional sequence.

<sup>12</sup> There are similarities between the SMC and the proposal in McCloskey (1997), which I discuss only briefly in the interest of space. McCloskey argues that, given a standard set of assumptions, the only way to derive subjecthood is derivationally, a stance that this paper shares. He observes that the historical trend has been to continually decompose subjecthood into more and more pieces. He then bolsters this claim by examining the linear position of the canonical subject across languages, arguing that the data necessitate multiple subjecthood positions. This paper reaches the same conclusion based on quirky subjects, though the execution differs as this paper is not concerned with thematic roles.



To illustrate (36), let  $fseq$  be  $\langle X > Y > Z > \dots \rangle$  and  $\mu$  be  $\{\langle X, x \rangle, \langle Y, y \rangle, \langle Z, z \rangle, \dots\}$ . Consider Language A and Language B where a DP  $\alpha$  is based merged in [Spec, ZP]. In Language A,  $\alpha$  raises to [Spec, XP], proceeding through [Spec, YP] given (36c), as illustrated in (37). In Language B,  $\alpha$  only raises to [Spec, YP], as illustrated in (38).

(37) *Language A*

$[_{XP} \alpha X^0 [_{YP} \langle \alpha \rangle Y^0 [_{ZP} \langle \alpha \rangle Z^0 \dots ]]] \rightsquigarrow$  DP  $\alpha$  has properties  $x$ ,  $y$ , and  $z$

(38) *Language B*

$[_{XP} X^0 [_{YP} \alpha Y^0 [_{ZP} \langle \alpha \rangle Z^0 \dots ]]] \rightsquigarrow$  DP  $\alpha$  has properties  $y$  and  $z$ , but not  $x$

In Language A (37),  $\alpha$  raises from [Spec, ZP] to [Spec, XP] through [Spec, YP] such that it receives all three properties:  $x$ ,  $y$ , and  $z$ . In Language B (38),  $\alpha$  only raises from [Spec, ZP] to [Spec, YP] such that it receives properties  $y$  and  $z$ , but not  $x$ .

The SMC stipulates that a DP must move cyclically through subjecthood positions. I propose that this cyclicity is enforced by the uniform nature of the probes involved in subjecthood movement such that one probe searching past another would violate locality. In particular, I propose that all subjecthood movement is triggered by  $\phi$ -probes, which are only satisfied by moving the target to the specifier position of the head bearing the probe. To distinguish movement-driving probes, I make use of “bullet” and “star” notation for features (Heck and Müller 2007). Bullet features are structure-building features which trigger MERGE upon AGREE, akin to Chomsky’s (2001) strong EPP features; they are notated as  $[\bullet F \bullet]$ . Star features are pure-agreement features which are satisfied by AGREE alone and do not invoke movement; they are notated as  $[\star F \star]$ . Crucially, given the uniform type of probes involved in subjecthood movement, i.e. they are all  $\phi$ -probes, one subjecthood position probing past another would violate locality, namely Relativised Minimality, as schematised in (39). Solid lines represent movement, and dashed lines represent AGREE.

(39)  $[_{XP} DP_1 X^0 [_{\bullet \phi \bullet} [_{YP} DP_1 Y^0 [_{\bullet \phi \bullet} [_{ZP} DP_1 Z^0 \dots ]]]]$

Therefore, the combination of the probes being  $\phi$ -probes and the locality enforced by Relativised Minimality forces movement through subjecthood positions to proceed cyclically. This proposal has an additional desirable consequence as well. Because all DPs in principle have  $\phi$ -features, subjecthood movement must target the highest accessible DP, which, under ordinary circumstances, is the highest thematic argument. These are the kinds of thematic arguments traditionally considered “subjects”. In section 5.3, I will propose that even though the highest DP is the only *accessible* target, the case of this DP constrains whether it is an *eligible* goal for the probe; in other words, subjecthood movement is CASE DISCRIMINATING.

The question to arise from this proposal is what is the evidence for movement, in particular multiple movement steps, being involved in a DP acquiring subjecthood properties. First, it is worth highlighting that in GB and its successors, the standard analysis of subjecthood already

associates subjecthood properties with *movement* to [Spec, TP]. Moreover, the standard analysis also bifurcates the “syntactic” and “semantic” properties traditionally ascribed to nominative agentive subjects between [Spec, TP] and [Spec, *v*P] respectively. This bifurcation was (partially) in response to the realisation that agentivity and subjecthood are not one and the same (see discussion in McCloskey 1997). In this light, the SMC can be seen as an extension of the standard analysis of subjecthood in GB and its successors—a further furcation of what has become associated with [Spec, TP]. Nevertheless, there is a more direct line of reasoning that movement is involved in subjecthood, based on the derivation of reduced relatives.

Finite and reduced relative clauses differ in the range of positions that relativisation is able to target. In a finite relative clause, relativisation can target virtually any nominal constituent (40). As mentioned in section 2.3, in a reduced relative clause, relativisation can only target the highest thematic position, i.e. the subject; relativising on any other position is prohibited (41).

(40) *Finite relative clauses*

- a. the *Basque*<sub>1</sub> [ who \_\_\_\_<sub>1</sub> gave Stefan the rutabaga ]
- b. the *German*<sub>1</sub> [ who Jon Ander gave \_\_\_\_<sub>1</sub> the rutabaga ]
- c. the *rutabaga*<sub>1</sub> [ that Jon Ander gave Stefan \_\_\_\_<sub>1</sub> ]

(41) *Reduced relative clauses*

(=16)

- a. the *Basque*<sub>1</sub> [ \_\_\_\_<sub>1</sub> giving Stefan the rutabaga ]
- b. \*the *German*<sub>1</sub> [ Jon Ander giving \_\_\_\_<sub>1</sub> the rutabaga ]
- c. \*the *rutabaga*<sub>1</sub> [ Jon Ander giving Stefan \_\_\_\_<sub>1</sub> ]

To form a relative clause, the relativised element must move to the edge of the clause (e.g. Bhatt 2002, 2006). Therefore, the fundamental difference between finite and reduced relative clauses is the availability of  $\bar{A}$ -movement, which I assume tracks whether a CP layer is projected. A finite relative clause is a CP; thus,  $\bar{A}$ -movement is available to bring elements to the clause edge (42).

(42) *Derivation of the finite relative clause in (40a)*

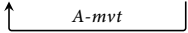
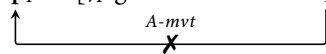
the *Basque* [CP **Op**<sub>1</sub> who [TP *t*<sub>1</sub> gave Stefan the rutabaga ] ]

A reduced relative clause is a TP (or smaller); thus,  $\bar{A}$ -movement is unavailable. Instead, the relativised element must reach the clause edge via other means, namely A-movement (43). Crucially, A-movement targets the highest accessible DP, correctly predicting (41a) to be grammatical and (41b) and (41c) to be ungrammatical.

(43) *Derivation of the reduced relative clause in (41a)*

the *Basque* [TP **Op**<sub>1</sub> T<sup>0</sup> [*v*P *t*<sub>1</sub> giving Stefan the rutabaga ] ]

However, there are in principle *two* plausible options for reaching the clause edge in a reduced relative clause. The first option is A-movement, which was assumed in (43). The second option is base-generation: a reduced relative is fairly small, e.g. a  $\nu$ P, such that the highest thematic argument is already at the clause edge in its base-generated position. Reduced relatives formed on progressive participles, like in (41), do not allow us to decide between the two options. However, reduced relatives formed on passives participles show that A-movement is indeed involved in bringing the relativised element to the clause edge. In (44a), passive A-movement raises the goal to the clause edge; its base-generated position would be too low. But, in (44b), because passive A-movement cannot target the theme in a ditransitive, the relativised element cannot reach the clause edge, relativisation cannot take place, and the structure is ungrammatical.

- (44) a. the German  $[_{TP} \text{Op}_1 T^0 [_{\nu P} \text{given } t_1 \text{ the rutabaga } ] ]$   
  
 b. \*the rutabaga  $[_{TP} \text{Op}_1 T^0 [_{\nu P} \text{given the German } t_1 ] ]$   


What this foray into reduced relatives shows is that movement, namely A-movement, is involved in a DP acquiring subjecthood properties. Otherwise, how the relativised element reaches the clause edge in (44a) would be unexplained. Thus far, reduced relatives only show that there is some kind of movement step involved in subjecthood, but it does not necessarily show that there are multiple movement steps. This aspect of the proposal is more or less a stipulation (though see above about [Spec, TP] and [Spec,  $\nu$ P]), but section 5.3 will show that its merit comes from straightforwardly deriving the QSH. Finally, there is more to say about the derivation of a reduced relative, which will be addressed in the next section.

According to the SMC, each subjecthood property is associated with a particular functional head. In the next section, I lay out a proposal for what these heads are and show how they derive the respective properties. With these pieces in place, section 5.3 proposes that the QSH results from subjecthood movement being case discriminating. Finally, section 5.4 discusses reversible dative–nominative structures, which further support the role of movement in subjecthood.

## 5.2 Voice<sup>0</sup>, T<sup>0</sup>, and Prt<sup>0</sup>

Section 2 identified three subjecthood properties: binding subject-oriented anaphora, being PRO, and undergoing relativisation in reduced relatives. According to the SMC, a distinct functional head is responsible for each of these properties. In this subsection, I propose that these functional heads are Voice<sup>0</sup>, T<sup>0</sup>, and Prt<sup>0</sup> respectively. Crosslinguistically, T<sup>0</sup> projects above Voice<sup>0</sup> in the functional sequence, and Prt<sup>0</sup> projects above T<sup>0</sup> in a reduced relative. Under this proposal, (45a) is the functional sequence, and (45b) is the head-property mapping.

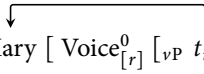
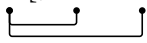
### (45) SUBJECTHOOD PROPERTIES

Let *b* be the property of binding SOAs, *c* be the property of being PRO, and *r* be the property of being able to be relativised on in a reduced relative.

- a.  $fseq = \langle (\text{Prt} >)T > \text{Voice} > v > V \rangle$   
 b.  $m(x) = \{ \langle \text{Prt}, r \rangle, \langle T, c \rangle, \langle \text{Voice}, b \rangle \}$

Crucially, the order of these heads mirrors the order of the subjecthood properties in the QSH. The analytical idea that will be pursued to account for the QSH is that different DPs in different languages differ in how high they raise in the functional sequence. This variation yields different sets of subjecthood properties that are constrained by the cyclic movement imposed by the SMC, thus obeying the QSH. Therefore, what is important is not the precise identity of the three functional heads—though  $T^0$ ,  $\text{Voice}^0$ , and  $\text{Prt}^0$  are logical choices—, but rather *their order* in the functional sequence, since this order will serve to derive the QSH. However, before delving into this account, it is first necessary to show how these three heads are responsible for their respective properties.

*Voice*<sup>0</sup> · Although the primary function of *Voice*<sup>0</sup> is to encode grammatical voice, under this proposal, it also facilitates the binding relationship between a SOA and its antecedent. Following [Kratzer \(2009\)](#), this facilitation comprises two processes: (i) binding a variable in the position of the anaphor and (ii) transmitting the  $\varphi$ -features of the antecedent, in  $[\text{Spec}, \text{VoiceP}]$ , to the anaphor. In the interest of space, I focus only on the former, though it is worth noting that the latter is what drives the need for a functional head to handle the binding.<sup>13</sup> *Voice*<sup>0</sup> is able to bear an INDEX FEATURE. This feature is interpreted as a  $\lambda$ -abstraction over that index at LF, which scopes below the functional head bearing it. A simplified derivation of *Mary likes herself* under [Kratzer's](#) analysis is given in (46).

- (46)   
 $[\text{VoiceP Mary } [ \text{Voice}_{[r]}^0 [{}_{vP} t_r \text{ like herself}_r ] ] ]$   
 a. LF:  $[\text{VoiceP Mary } [ \text{Voice}^0 \lambda r [{}_{vP} r \text{ like } r ] ] ]$   
  
 b.  $[{}_{vP}]^g = \lambda e . \text{AGENT}(g(r))(e) \wedge \text{LIKE}(g(r))(e)$   
 c.  $[\lambda r . {}_{vP}]^g = \lambda r \lambda e . \text{AGENT}(r)(e) \wedge \text{LIKE}(r)(e)$   
 d.  $[\text{VoiceP}]^g = \lambda e . \text{AGENT}(\text{Mary})(e) \wedge \text{LIKE}(\text{Mary})(e)$

The derivation in (46) proceeds as follows: First, the index feature is interpreted as a  $\lambda$ -abstraction over the index  $r$  (46c). This step creates a reflexive predicate of individuals who like themselves. Second, the  $\lambda$ -abstraction created by the index feature is saturated by *Mary*, the result of which denotes the set of events of *Mary* liking *Mary* (i.e. herself) (46d). The derivation in (46) makes the simplifying assumption that *Voice*<sup>0</sup> does not contribute any truth-conditional meaning, but of course nothing hinges on this expository choice.

The functional sequence in (45a) assumes a separation of *Voice*<sup>0</sup> and  $v^0$ , where *Voice*<sup>0</sup> encodes grammatical voice and  $v^0$  introduces the external argument. These choices are relatively inconsequential, though see [Harley \(2013\)](#), [Merchant \(2013\)](#), and [Legate \(2014\)](#), amongst others, for

<sup>13</sup> The empirical motivation behind [Kratzer's \(2009\)](#) analysis is that bound-variable interpretations of first-person and second-person pronouns are only possible when the  $\varphi$ -features of the verb match those of the pronoun.

arguments in favour of such a separation and discussion of the precise division of labour. If the two were collapsed into  $v^0$  and  $v^0$  bore the index feature, this would predict that any external argument would be able to bind SOAs from its base-merged position. This is an open empirical question. Thus, I take the more conservative stance that all subjecthood positions are *derived* positions to which a DP must move.<sup>14</sup>

$T^0$  · A defining characteristic of control constructions is their *de se* interpretation (Morgan 1970; Chierchia 1989). Namely, PRO must refer to the individual in the possible world who the attitude holder identifies as herself. To illustrate, consider the pair of sentences in (47).

- (47) Context: Mary is an amnesiac. She is watching television and sees a woman campaigning for president. Unbeknownst to Mary, this woman is herself. Mary is impressed by how great an orator this woman on TV is. Mary utters, “This woman will become president”.
- a. Mary expected [ PRO to become president ].
  - b. Mary expected [ that she would become president ].

In the given scenario, the nonfinite control construction in (47a) is false, but there is a reading of its finite-clause counterpart in (47b) that is true. (47a) has an awareness condition that Mary must be aware that her expectation is about herself. In other words, (47a) necessarily describes a SELF-AScription. In the given scenario with mistaken identity, this awareness condition is not satisfied, thereby rendering the sentence false. No such awareness condition governs (47b) and thus the sentence is true under simple coreference between *Mary* and *she*. The obligatory self-ascription interpretation, like in (47a), is called a *de se* interpretation.

Crucially, the *de se* interpretation does not follow from simple coreference between PRO and its controller. Otherwise, (47a) would have a reading that is true in the given scenario, contrary to fact. Following Chierchia (1989), I assume that the *de se* interpretation of control constructions comprises two interconnected pieces: (i) quantification over world–individual pairs and (ii) the complements of control predicates denoting properties of individuals. Chierchia (1989) argues that attitude predicates quantify over world–individual pairs called CENTRED WORLDS. The individual in the pair refers to the individual that the attitude holder identifies as herself in that world. Thus, (47a) denotes the proposition in (48a).

- (48) a.  $\lambda w . \forall \langle w', y \rangle [ \langle w', y \rangle \in \text{EXPECT}_{\text{Mary}, w} \rightarrow y \text{ becomes president in } w' ]$   
 b.  $\text{EXPECT}_{x, w} = \{ \langle w', y \rangle : \text{it is compatible with what } x \text{ expects in } w \text{ for } x \text{ to be } y \text{ in } w' \}$

Quantification over centred worlds captures the awareness condition which characterises the *de se* interpretation. Additionally, it has the consequence of requiring that the complement of a control predicate be a property of individuals ( $\langle e, st \rangle$ ), not a proposition ( $st$ ). This allows the relevant control predicates to encode their *de se* interpretation. Thus, the semantic derivation of (47a) proceeds as in (49).

<sup>14</sup> Moreover, in the standard analysis of binding in Heim and Kratzer (1998), binding requires movement of the binder, although an appeal to Buring’s (2005)  $\beta$ -operator could be made too.

- (49) Mary<sub>1</sub> expected [ PRO<sub>1</sub> to become president ].
- a.  $\llbracket \text{expect} \rrbracket = \lambda P_{\langle e, st \rangle} \lambda x_e \lambda w_s . \forall \langle w', y \rangle [\langle w', y \rangle \in \text{EXPECT}_{x,w} \rightarrow P(y)(w')]$
  - b.  $\llbracket \text{PRO to become president} \rrbracket = \lambda x_e \lambda w_s . x \text{ becomes president in } w$
  - c.  $\llbracket \text{Mary expected [ PRO to to become president ]} \rrbracket =$   
 $\lambda w . \forall \langle w', y \rangle [\langle w', y \rangle \in \text{EXPECT}_{\text{Mary},w} \rightarrow y \text{ becomes president in } w']$

To derive a property of individuals from the complement of a control predicate, I adopt the proposal in [Pearson \(2013\)](#) that PRO is a special pronoun whose movement to the clause edge yields a property denotation. Her proposal is in turn based on [Percus and Sauerland \(2003\)](#), which I will thus discuss first. [Percus and Sauerland](#) focus on *de se* interpretations of finite complements of attitude predicates. They show that, like nonfinite control complements, finite clauses can also receive a *de se* interpretation—distinct from simple coreference—, when they are embedded under an attitude predicate, provided there is a pronoun in the embedded finite clause coreferring with the matrix subject. In the interest of space, I will not review the evidence for their conclusion. In congruence with [Chierchia's \(1989\)](#) analysis of nonfinite clauses, they assume that the *de se* interpretation of a finite clause involves it denoting a property of individuals. They propose that this property of individuals is derived via (covert) movement of the pronoun that corefers with the matrix subject to the edge of the embedded clause. This pronoun is itself uninterpreted, notated with an asterisk, but its movement creates a  $\lambda$ -abstraction over its trace. This analysis is schematised in (50), the crucial step of which is (50d) in which *she\** is uninterpreted at LF.<sup>15</sup>

- (50) Mary<sub>1</sub> dreamed [ she\*<sub>1</sub> (that) t<sub>1</sub> became president ].
- a. LF: Mary dreamed [ she\*  $\lambda x$  [ x became president ] ]
  - b.  $\llbracket \text{dream} \rrbracket = \lambda P_{\langle e, st \rangle} \lambda x_e \lambda w_s . \forall \langle w', y \rangle [\langle w', y \rangle \in \text{DREAM}_{x,w} \rightarrow P(y)(w')]$
  - c.  $\text{DREAM}_{x,w} = \{ \langle w', y \rangle : \text{it is compatible with what } x \text{ dreams in } w \text{ for } x \text{ to be } y \text{ in } w' \}$
  - d.  $\llbracket \text{she* } \lambda x [ x \text{ become president } ] \rrbracket = \lambda x_e \lambda w_s . x \text{ becomes president in } w$
  - e.  $\llbracket \text{Mary dreamed [ she* } \lambda x [ x \text{ become president } ] ] \rrbracket =$   
 $\lambda w . \forall \langle w', y \rangle [\langle w', y \rangle \in \text{DREAM}_{\text{Mary},w} \rightarrow y \text{ becomes president in } w']$

The result of moving the uninterpreted pronoun *she\** to the clause edge is a property of individuals (50d), which can combine with an attitude predicate in the same manner as (49) to yield a *de se* interpretation with quantification over centred worlds (50e). Failure to move *she\** would cause two problems. First, the predicate *become president* would be unsaturated. Second, the embedded finite clause would be of the wrong semantic type to combine with the *de se* version of *dream* in (50b).<sup>16</sup> In other words, *she\** must move to the clause edge if the LF is to be interpretable.

<sup>15</sup> It is worth noting that the semantic derivation of a *de se* LF in (50) is equivalent to the standard treatment of relative pronouns in [Heim and Kratzer \(1998\)](#).

<sup>16</sup> Appreciating the semantic-type mismatch induced by the failure to move *she\** requires remembering that between the position where the external argument is introduced and the clause edge comes tense, viewpoint aspect, etc., which presumably require their arguments to be propositions.

Pearson (2013) proposes that PRO is one of Percus and Sauerland's uninterpreted pronouns, i.e. PRO is in fact PRO\*. As a result, PRO cannot be interpreted in its base position and must move to the clause edge. This movement creates a  $\lambda$ -abstraction over its trace, the result of which is a property of individuals that can combine with an attitude predicate. I propose that the clause edge position to which PRO moves is [Spec, TP] and that the movement is A-movement, as schematised in (51). It is relatively uncontroversial that nonfinite clauses do not permit  $\bar{A}$ -movement to their edge, presumably because they are TPs and do not project a CP layer. Thus, it follows that the only way for PRO to reach the clause edge is A-moving to [Spec, TP].

$$(51) \quad [_{TP} \text{PRO}^* T^0 [_{VoiceP} t_1 \text{Voice}^0 \dots]] \rightsquigarrow \text{LF: } [\text{PRO}^* \lambda x [_{TP} T^0 [_{VoiceP} x \text{Voice}^0 \dots]]]$$

The diagram for (51) shows two upward arrows. The first arrow starts from  $t_1$  in the  $[_{VoiceP} t_1 \text{Voice}^0 \dots]$  block and points to  $\text{PRO}^*$  in the  $[_{TP} \text{PRO}^* T^0 \dots]$  block. The second arrow starts from  $x$  in the  $[_{VoiceP} x \text{Voice}^0 \dots]$  block and points to  $\lambda x$  in the  $[\text{PRO}^* \lambda x \dots]$  block.

If PRO fails to move to [Spec, TP], the embedded nonfinite clause will not denote a property and cannot compose with a control predicate, yielding a semantic-type mismatch and hence ungrammaticality. The consequence of these proposals is that  $T^0$  is the de facto locus of “licensing” PRO, though only indirectly by virtue of providing a clause edge (A-)position to create a *de se* LE.

*Prt*<sup>0</sup> · As discussed in section 5.1, an essential ingredient in the formation of reduced relatives is A-movement of the relativised element to the edge of relative clause. I propose that the position that is targeted by reduced-relative formation is [Spec, *PrtP*], where *Prt*<sup>0</sup> is a special projection above  $T^0$  in a reduced relative (52). Movement to [Spec, *PrtP*] is A-movement, which appropriately restricts the class of elements on which a reduced relative can be formed.

$$(52) \quad [_{NP} NP_1 [_{PrtP} NP_1 \text{Prt}^0 [_{TP} t_1 \dots]]]$$

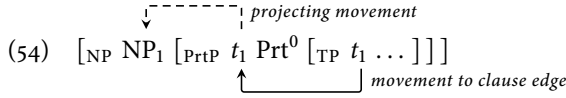
The diagram for (52) shows two upward arrows. The first arrow starts from  $t_1$  in the  $[_{TP} t_1 \dots]$  block and points to  $\text{Prt}^0$  in the  $[_{PrtP} NP_1 \text{Prt}^0 \dots]$  block. The second arrow starts from  $NP_1$  in the  $[_{PrtP} NP_1 \text{Prt}^0 \dots]$  block and points to  $NP_1$  in the  $[_{NP} NP_1 \dots]$  block. A dashed bracket above the second arrow is labeled 'relative clause formation'.

The literature on relative clauses has centred on two types of derivations (both of which may be independently required): matching and raising (see Sauerland 1998; Bhatt 2002, 2006; Hulsey and Sauerland 2006; and references therein). The two analyses both assume movement to the edge of the relative clause, but differ in the relationship between the internal gap position and the head of the relative clause. According to the matching analysis, the relative-clause head is generated both internally and externally. The internal head is then deleted under identity with the external head. This derivation is schematised in (53). Therefore, under the matching analysis, the relationship between the gap and the external head is indirect.

$$(53) \quad [_{NP} NP_1 [_{PrtP} \cancel{NP_1} \text{Prt}^0 [_{TP} t_1 \dots]]]$$

The diagram for (53) shows an upward arrow from  $t_1$  in the  $[_{TP} t_1 \dots]$  block to  $\text{Prt}^0$  in the  $[_{PrtP} \cancel{NP_1} \text{Prt}^0 \dots]$  block. A dashed bracket above the arrow is labeled 'matching→deletion'. The  $NP_1$  in the  $[_{PrtP}$  block is crossed out.

According to the raising analysis, the head of the relative clause is only generated internally. From the edge of the relative clause, it undergoes a short step of projecting movement, i.e. movement that creates its own landing site. This derivation is schematised in (54). Under the raising analysis, the relationship between the gap and the external head is direct because they are one and the same.



Either derivation is compatible with the proposal in (52) that reduced-relative formation targets [Spec, PrtP]. Irrespective of matching or raising, the process underlying the derivation of (reduced) relative clauses must be restricted in some manner, since neither matching nor projecting movement seem to be generally available processes. One way of implementing such a restriction is for relative-clause formation to be limited to targeting particular projections, one of which is PrtP. In sum, the precise mechanics behind reduced-relative formation are inconsequential for our purposes here. What is important is that it involves A-movement to the clause edge, as shown in section 5.1, which is captured in (52).

### 5.3 Deriving the Quirky Subject Hierarchy

According to the SMC, a DP obtains subjecthood properties by cyclically moving through a series of positions in the functional sequence. In section 5.2, I proposed that these positions are the specifier positions of Voice<sup>0</sup>, T<sup>0</sup>, and Prt<sup>0</sup>, mirroring the order of the QSH. These pieces together derive the entailments encoded in the QSH. However, they do not in and of themselves derive the varied behaviour of quirky subjects crosslinguistically. More specifically, they do not derive how a DP can have a proper subset of the subjecthood properties.

I propose that quirky subjects vary crosslinguistically in how high they raise in the functional sequence. Thus, while nominative subjects raise through all the subjecthood positions, thereby possessing all of the subjecthood properties, quirky subjects may have a final landing site that is an *intermediate* subjecthood position, yielding a proper subset of subjecthood properties. This single point of variation yields the three types of quirky subjects from section 3: Hindi-type (55), Icelandic-type (56), and Laz-type (57).

- (55) *Hindi-type quirky subjects*
- $$[_{PrtP} \text{---} Prt^0 [_{TP} \text{---} T^0 [_{VoiceP} \text{QS} Voice^0 [_{vP} \text{---} \dots ]]]]$$
- 
- (56) *Icelandic-type quirky subjects*
- $$[_{PrtP} \text{---} Prt^0 [_{TP} \text{QS} T^0 [_{VoiceP} \text{---} Voice^0 [_{vP} \text{---} \dots ]]]]$$
- 
- (57) *Laz-type quirky subjects*
- $$[_{PrtP} \text{QS} Prt^0 [_{TP} \text{---} T^0 [_{VoiceP} \text{---} Voice^0 [_{vP} \text{---} \dots ]]]]$$
- 

This crosslinguistic variation is rooted in the featural satisfaction conditions of the  $\phi$ -probes involved in subjecthood movement. In particular, I propose that these probes may be CASE DISCRIMINATING and that the particular discrimination setting is language-specific. A probe that is case discriminating targets the closest relevant goal, e.g. a *wh*-probe targets the closest *wh*-phrase, but it can only establish a successful AGREE relationship with that goal iff it is also



of a particular type of case (to be defined below). If a successful AGREE relationship cannot be established as a result of case discrimination, the operation AGREE fails gracefully and aborts its search (Preminger 2014).

The conception of case discrimination and featural satisfaction adopted in this paper comes from the implementation in Preminger (2014) of Bobaljik's (2008) argument that  $\phi$ -agreement is sensitive to morphological case. Bobaljik argues that the set of DPs targeted by  $\phi$ -agreement in a given language obeys the (revised) MORAVCSIK HIERARCHY (58).<sup>17,18</sup> Lexical and inherent cases are the nonstructural cases, e.g. idiosyncratic cases assigned by verbs and, importantly, the cases assigned to quirky subjects. Dependent case is a unified notion of ergative and accusative. Unmarked case is (in effect) nominative.

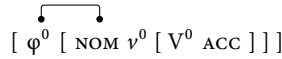
(58) (REVISED) MORAVCSIK HIERARCHY

unmarked case >> dependent case >> lexical/inherent case [Bobaljik 2008; Moravcsik 1974]

For example, according to (58), if  $\phi$ -agreement in a language can target dependent-case DPs, it can also target unmarked-case DPs. These types of universal implications are well attested crosslinguistically; see Woolford (2000), Bobaljik (2008), and Preminger (2014) and references cited therein for examples.

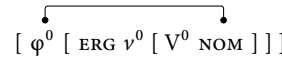
The Moravcsik Hierarchy in conjunction with locality correctly predicts the typological combinations of case-alignment and agreement-alignment: Relativising  $\phi$ -agreement to unmarked case yields a nominative–accusative agreement alignment for a nominative–accusative case alignment (59), e.g. English and Icelandic, and an ergative–absolutive agreement alignment for an ergative–absolutive case alignment (60), e.g. Hindi and Basque. Relativising  $\phi$ -agreement to dependent case yields a nominative–accusative agreement alignment for a nominative–accusative case alignment (61)—as locality will force agreement with the higher nominative subject over the lower accusative object—and a nominative–accusative agreement alignment for an ergative–absolutive case alignment (62), e.g. Walpiri.

(59) NOM–ACC case, NOM–ACC agreement unmarked >> dependent >> lexical



$$[ \phi^0 [ \text{NOM } v^0 [ V^0 \text{ ACC } ] ] ]$$

(60) ERG–ABS case, ERG–ABS agreement unmarked >> dependent >> lexical



$$[ \phi^0 [ \text{ERG } v^0 [ V^0 \text{ NOM } ] ] ]$$

<sup>17</sup> Bobaljik's (2008) revised version of the Moravcsik Hierarchy mirrors Marantz's (1991) Disjunctive Case Hierarchy. Though I am generally a proponent of so-called dependent case theories stemming from Marantz (1991), in the interest of space, I do not explicitly explore this connection here. Moreover, the status of ergative as an inherent or structural case is irrelevant for our present purposes; see the appendix for discussion of ergative subjects.

<sup>18</sup> This generalisation crucially only applies to languages where the verb only agrees with a single DP. Following the generalised case-discrimination system of Preminger (2014), if the verb hosts multiple agreement morphemes, each agreement morpheme (i.e. its corresponding  $\phi$ -probe) will independently obey the Moravcsik Hierarchy.

- (61) *NOM-ACC case, NOM-ACC agreement* unmarked >> dependent >> lexical  

$$\begin{array}{c} \bullet \quad \bullet \\ \diagdown \quad \diagup \\ [\varphi^0 \text{ [ NOM } v^0 \text{ [ V}^0 \text{ ACC ] } ]}] \end{array}$$
- (62) *ERG-ABS case, NOM-ACC agreement* unmarked >> dependent >> lexical  

$$\begin{array}{c} \bullet \quad \bullet \\ \diagdown \quad \diagup \\ [\varphi^0 \text{ [ ERG } v^0 \text{ [ V}^0 \text{ NOM ] } ]}] \end{array}$$

Crucially, under the Moravcsik Hierarchy, it is impossible for a language to have a nominative–accusative case alignment and an ergative–absolutive agreement alignment because locality will force  $\varphi$ -agreement to target the nominative subject over the accusative object.

Preminger (2014) implements Bobaljik’s analysis by proposing that case discrimination is a more general property of probes. For example, a  $\varphi$ -probe [ $\ast\varphi\ast$ ] can be relativised to unmarked case such that an ergative DP or a dative DP would not be able to establish an AGREE relationship with it—this would describe, e.g., Hindi-Urdu verbal agreement.

In this paper, I make use of two case-discriminating  $\varphi$ -probes to drive subjecthood movement: one that can only agree with a nominative DP, abbreviated as [ $\bullet\text{NOM}\bullet$ ], and one that can agree with any DP regardless of its case, abbreviated as [ $\bullet\text{D}\bullet$ ]. Crucially, only [ $\bullet\text{D}\bullet$ ] can establish a successful AGREE relationship with a quirky subject. Both [ $\bullet\text{NOM}\bullet$ ] and [ $\bullet\text{D}\bullet$ ] are sensitive to *defective intervention* based on their case discrimination such that a structurally higher DP that does not satisfy the case requirement blocks agreement across it with a lower DP that does.<sup>19</sup> In effect, they probe down into the accessible structure until they encounter a DP. If that DP is of the correct type of case, it agrees with that DP; otherwise, AGREE gracefully aborts and discontinues searching. Moreover, as a result of probing for  $\varphi$ -features and case discrimination, [ $\bullet\text{NOM}\bullet$ ] and [ $\bullet\text{D}\bullet$ ] will only ever consider the highest DP.

This probing process is illustrated below for [ $\bullet\text{NOM}\bullet$ ]: In (63), [ $\bullet\text{NOM}\bullet$ ] successfully agrees with the highest DP because it is nominative. However, in (64), [ $\bullet\text{NOM}\bullet$ ] targets the highest DP, but is unable to agree with it because it is dative; therefore, [ $\bullet\text{NOM}\bullet$ ] aborts gracefully.

- (63) 
$$\begin{array}{c} \downarrow \\ [\text{XP DP}_{\text{NOM}} \text{ X}^0_{[\bullet\text{NOM}\bullet}] [\text{YP} \langle \text{DP}_{\text{NOM}} \rangle \text{ Y}^0 [\text{ZP DP}_{\text{DAT}} \text{ Z}^0 \dots ]]] \end{array} \quad [\bullet\text{NOM}\bullet] \text{ agrees with } \text{DP}_{\text{NOM}}$$
- (64) 
$$\begin{array}{c} \downarrow \\ [\text{XP X}^0_{[\bullet\text{NOM}\bullet}] [\text{YP DP}_{\text{DAT}} \text{ Y}^0 [\text{ZP DP}_{\text{NOM}} \text{ Z}^0 \dots ]]] \end{array} \quad [\bullet\text{NOM}\bullet] \text{ cannot agree with } \text{DP}_{\text{DAT}}$$

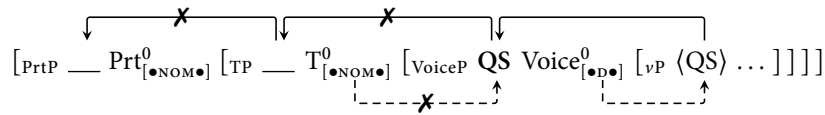
Because the specific mechanics of case assignment are not the focus of this paper, I will make the following two simplifying assumptions: First, lexical case is assigned vP-internally. In particular,

<sup>19</sup> Preminger (2014) treats case discrimination differently in that AGREE can continue to probe past a DP with the wrong type of case, i.e. it is not subject to defective intervention. I take this difference to mean that case discrimination can be both a featural satisfaction condition, as in this paper, or part of the relativised feature geometry being probed for, as in Preminger (2014). In the first, case discrimination only dictates whether an AGREE relationship can be established, but does not itself define the search space. In the second, case discrimination restricts the visible DPs in the same manner that, e.g., an articulated  $\pi$ -probe looking for  $1\pi$ - or  $2\pi$ -arguments will skip over  $3\pi$ -arguments. The architecture behind both is the same, but they differ at the point in the probing process at which they apply.

quirky subjects are assigned lexical case by the variant of  $v^0$  that introduces the quirky subject as an argument. Second, unmarked (nominative) case is the absence of case on a DP or, alternatively, a case feature that is yet unvalued. Nothing crucial hinges on these assumptions, but they provide the overarching simplification that when  $\text{Voice}^0$  merges into the structure, all of the relevant case information necessary for case discrimination is available. This allows us to focus on subjecthood.

Hindi-type quirky subjects only raise to [Spec, VoiceP] because, in languages like Hindi,  $\text{Voice}^0$  bears [ $\bullet\text{D}\bullet$ ], while  $\text{T}^0$  and  $\text{Prt}^0$  bear [ $\bullet\text{NOM}\bullet$ ]. This is illustrated in (65).

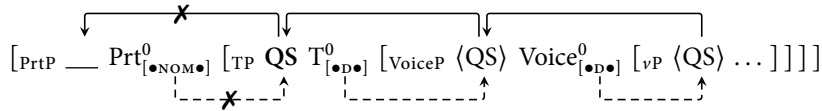
(65) *Hindi-type quirky subjects*



In (65), the Hindi-type quirky subject can bind SOAs because it raises to [Spec, VoiceP], satisfying its [ $\bullet\text{D}\bullet$ ] feature. It does not further raise to [Spec, TP] because it does not satisfy its [ $\bullet\text{NOM}\bullet$ ] feature. Therefore, it is unable to be PRO. Failure to raise to [Spec, TP] precludes further movement to [Spec, PrtP] as well (when  $\text{Prt}^0$  is present for reduced relatives), rendering Hindi-type quirky subjects unable to undergo relativisation in reduced relatives. Note that failure to raise to [Spec, TP] is problematic only when the quirky subject is PRO because the resulting structure will not denote a property, which is necessary for composing with a control predicate; see section 5.2. In an ordinary finite clause, where the quirky subject is overt and not PRO, it is unproblematic if it fails to raise to [Spec, TP] because the semantic interpretation does not require such movement and [ $\bullet\text{NOM}\bullet$ ] fails gracefully when it does not find a suitable goal.<sup>20</sup>

Icelandic-type quirky subjects raise to [Spec, VoiceP] and then to [Spec, TP] because, in languages like Icelandic, both  $\text{Voice}^0$  and  $\text{T}^0$  bear [ $\bullet\text{D}\bullet$ ]. However, they do not raise to [Spec, PrtP], when  $\text{Prt}^0$  is projected, because  $\text{Prt}^0$  bears [ $\bullet\text{NOM}\bullet$ ]. This is illustrated in (66).

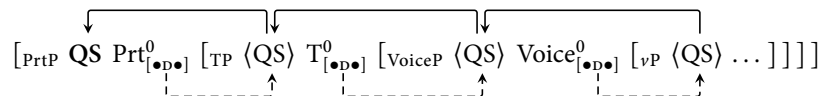
(66) *Icelandic-type quirky subjects*



In (66), the Icelandic-type quirky subject can bind SOAs because it raises to [Spec, VoiceP], satisfying its [ $\bullet\text{D}\bullet$ ] feature. It can also be PRO because it raises to [Spec, TP], satisfying its [ $\bullet\text{D}\bullet$ ] feature as well. When an Icelandic-type quirky subject is PRO, the resulting structure will thus denote a property and compose successfully with a control predicate. However, it cannot raise to [Spec, PrtP] because it does not satisfy its [ $\bullet\text{NOM}\bullet$ ] feature. Therefore, Icelandic-type quirky subjects cannot undergo relativisation in reduced relatives.

Laz-type quirky subjects raise through all of the subjecthood positions: first to [Spec, VoiceP], then to [Spec, TP], and finally to [Spec, PrtP], when  $\text{Prt}^0$  is projected. This is because, in languages like Laz,  $\text{Voice}^0$ ,  $\text{T}^0$ , and  $\text{Prt}^0$  all bear [ $\bullet\text{D}\bullet$ ], as illustrated in (67).

<sup>20</sup> Although movement to [Spec, TP] is not required by [ $\bullet\text{NOM}\bullet$ ] itself, nothing precludes the possibility that other language-specific factors might require that movement to [Spec, TP] obtain.

(67) *Laz-type quirky subjects*


By virtue of raising through all of the subjecthood positions, Laz-type quirky subjects possess all of the subjecthood properties from section 2.

When a nominative DP occurs in the structures in (65)–(67), it will always raise through all three positions because it satisfies the case discrimination of both [ $\bullet$ NOM $\bullet$ ] and [ $\bullet$ D $\bullet$ ]. This entailment follows from case discrimination being stated in terms of the Moravcsik Hierarchy. Therefore, a canonical nominative subject will always bear the full array of subjecthood properties regardless of the particular case-discriminating probes on Voice<sup>0</sup>, T<sup>0</sup>, and Prt<sup>0</sup> in the language.

It is worth reemphasising that the cyclicity required by the SMC follows from the uniform type of subject-movement probes. Namely, they are all (structure-building)  $\phi$ -probes, such that one subject-movement probe searching past another violates Relativised Minimality. This probe uniformity, in conjunction with case discrimination, derives *all and only* the types of subjects permitted under the QSH. For example, consider the combination of [ $\bullet$ D $\bullet$ ] on T<sup>0</sup> and [ $\bullet$ NOM $\bullet$ ] on Voice<sup>0</sup>. If T<sup>0</sup> could probe past Voice<sup>0</sup> to target a lexically case-marked DP, which itself cannot satisfy [ $\bullet$ NOM $\bullet$ ] to raise to [Spec, VoiceP], then this would allow for a quirky subject that can be PRO, but not bind SOAs—a violation of the QSH. However, this undesired derivation is ruled out because T<sup>0</sup> probing past Voice<sup>0</sup> violates Relativised Minimality.

#### 5.4 Reversible dative–nominative structures

Additional support for the role of movement in subjecthood comes from REVERSIBLE DATIVE–NOMINATIVE STRUCTURES in Hindi. In section 3.1, it was shown that the dative argument in Hindi dative–nominative structures can bind SOAs, but not be PRO or undergo relativisation in reduced relatives. However, it is also possible for the nominative argument to be the one to possess subjecthood properties. When it does so, it can bind SOAs (68a), be PRO (68b), and undergo relativisation in reduced relatives (68c).

 (68) a. *Binding Diagnostic*

Mē<sub>1</sub> [apne<sub>1/\*2</sub> sab rishtedaarō-ko] pasand nahī hū  
 I.NOM REFL all relatives-DAT like NEG be.PRS  
 ‘I am not liked by all my relatives’ [Hook 1990:322]

 b. *PRO Diagnostic*

Mē<sub>1</sub> [PRO<sub>1</sub> un-logō-ko pasand aa-naa ] nahī caah-taa  
 I.NOM PRO.NOM those-people-DAT like come-INF NEG want-HAB  
 ‘I don’t want those people to like me’ [Hook 1990:322]

 c. *Reduced Relative Diagnostic*

[\_\_\_\_<sub>1</sub> Ravi-ko lagii ] coṭ<sub>1</sub> (zyadaa gehrii nahī thii )  
 \_\_\_\_<sub>1</sub>.NOM Ravi-DAT contact.PFV hurt.NOM very deep NEG be.PFV  
 ‘Ravi’s wound (wasn’t very deep)’

Davison (2004) calls this property of dative–nominative structures REVERSIBILITY. There are two conceivable analyses of reversibility. According to the first, there are two separate base-generated word orders: (i) dative over nominative, where the dative raises to [Spec, VoiceP] but no further, and (ii) nominative over dative, where the nominative raises through all of the subjecthood positions. According to the second, there is a single base-generated word order and the lower argument can scramble above the higher argument before subjecthood-movement probes are introduced into the structure. In both analyses, further  $\bar{A}$ -scrambling can obscure the underlying derivation.

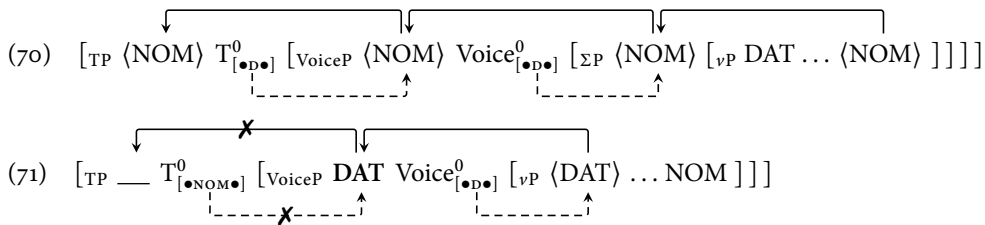
Bhatia and Poole (2016) argue that only the latter movement analysis is possible given the thematic connection between the nominative argument and the verb. They note that there are instances where the nominative argument determines the particular interpretation of the verb (69).

- (69) a. **raam-ko** *bhuukh* lag rahii he  
 Ram-DAT hunger contact PROG be.PRS.SG  
 ‘Ram is feeling hungry’  
 b. **larke-ko** *cot* lag-ii  
 boy-DAT wound contact-PFV  
 ‘The boy was hurt’

[Bhatia and Poole 2016]

This criterion is the foremost employed in Kratzer (1996) to argue for syntactically and semantically distinguishing between internal and external arguments, e.g. *throw a baseball* vs. *throw a party* (also Marantz 1984). Bhatia and Poole propose that, in dative–nominative structures, the nominative is the internal argument and the dative is the external argument. Deviations from the base-generated structure are derived via movement.

I propose that the nominative internal argument can scramble above the dative external argument before Voice<sup>0</sup> is introduced into the structure. When this scrambling happens, the nominative is targeted for subjecthood movement. Because it satisfies both [ $\bullet$ NOM $\bullet$ ] and [ $\bullet$ D $\bullet$ ], it moves through all of the subjecthood positions and possesses all of the subjecthood properties (70). When the scrambling does not happen, the dative is targeted for subjecthood movement. Because it only satisfies [ $\bullet$ D $\bullet$ ], it will not proceed past [Spec, VoiceP] (71).



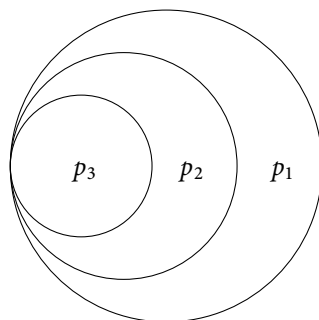
In sum, the tight thematic connection between the nominative argument and the verb shows that it must be an internal argument. This supports an analysis where there is only one base-generated structure: dative over nominative. We can capture the reversibility of dative–nominative structures in Hindi via movement, wherein scrambling feeds subjecthood movement.

## 6 Nature of subjecthood

The view of subjecthood to emerge from this paper is twofold: First, the QSH reveals that subjecthood properties are ordered in *hierarchical subset relationships*, as schematised in Figure 1. Second, the SMC argues that these entailments are derived via cyclic movement through a series of subjecthood positions. Thus, subjecthood is a purely structural phenomenon, despite the prima facie problem imposed by quirky subjects varying in their subjecthood properties crosslinguistically. Crucially, the QSH discredits the existing SS and SP approaches to subjecthood because they either overgenerate or undergenerate. Let us focus on each in turn.

According to the SP literature, subjecthood is on a continuum (e.g. Mohanan 1994; Eyþórsson and Barðdal 2005; Falk 2006). There is some maximal set of subjecthood properties, and every DP possesses a subset of these properties. Whenever a DP possesses a nonempty subset of these properties, it is considered a “subject”. This view predicts a *genuinely gradient* distribution of subjecthood properties: for  $x$  number of subjecthood properties, there should be  $2^x$  different types of DPs. For example, there should be DPs that can be PRO, but not bind SOAs. The crosslinguistic investigation in this paper, embodied in the QSH, shows that this typological prediction does not bear out. Even though subjecthood properties do not cluster together, they are also not genuinely gradient. Empirically discrediting SP is important because the SP approach to subjecthood rejects the premise that grammatical functions are not theoretical primitives. Thus, the QSH turns quirky subjects, which were once an argument *against* SS, into an argument *against* SP. The only way that SP can account for the QSH is to stipulate the entailments encoded in the QSH, which is relatively un insightful. The SMC, instead, accounts for the QSH via more primitive mechanisms, while maintaining the theoretical desideratum that subjecthood be purely structural and grammatical functions not be primitives.

According to the SS literature, subjecthood properties should cluster together: either a DP will have all of the subjecthood properties or it will have none of them (e.g. Zaenen et al. 1985; McFadden 2004; Sigurðsson 2004; Preminger 2014). The QSH clearly discredits this strong view because there are quirky subjects with a proper subset of all the subjecthood properties. However, there are two weaker interpretations of this view that one could envision. The first is that it is the *conjunction* of all the subjecthood properties that makes a DP a “subject”, but each individual property is independently available via some means, as schematised in Figure 2. What this first weaker approach amounts to is a theory about what to call a “subject”. Its typological predictions



**Figure 1:** The hierarchical view of subjecthood that follows from the QSH.

$p_1$  = binding subject-oriented anaphora

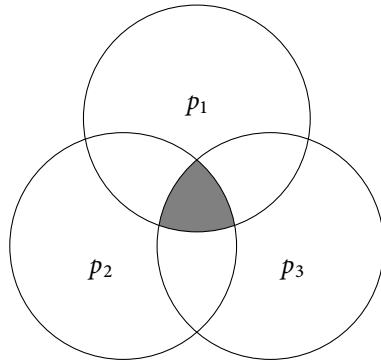
$p_2$  = being PRO

$p_3$  = reduced relatives

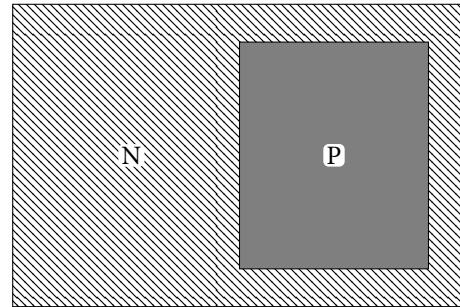
are identical to the genuinely gradient view, and therefore it is incompatible with the QSH.

The second weaker interpretation is that there is some *minimal threshold* of properties that a DP must possess to be a “subject”, but there are additional properties that only a subject can possess.<sup>21</sup> This is schematized in Figure 3, where P is the set of properties that subjects *can* possess and N is the set of properties that subjects *need* to possess. Therefore, only a subset of the subjecthood properties cluster together; the other extra subjecthood properties are in free distribution. Conceptually, this approach has the problem that the set of subjecthood properties predicted to cluster together is arbitrary such that the designation between “subject” and “nonsubject” is arbitrary as well. One can simply define the sets N and P so as to include those languages where one wants quirky subjects to be considered true subjects.<sup>22</sup> For example, if one wants Icelandic-type quirky subjects to be true subjects, one asserts that  $N = \{\text{PRO}, \text{Binding}\}$ . However, if one instead wants Hindi-type quirky subjects to be true subjects, one asserts that  $N = \{\text{Binding}\}$ . At this point, the data become inconsequential and the theory reduces to what should be called a “subject”.

Nevertheless, the fundamental problem with the minimal-threshold approach is that it is not expressive enough. Adequately capturing the entailments encoded in the QSH requires more articulation than two levels. For example, consider  $N = \{\text{Binding}\}$  and  $P = \{\text{PRO}, \text{Reduced Relative}\}$ . These definitions of N and P predict Hindi-type, Icelandic-type, and Laz-type quirky subjects, as they can all bind SOAs. Icelandic-type and Laz-type quirky subjects would also possess extra subjecthood properties. However, this distribution of subjecthood properties misses the generalisation that all DPs that can be relativised on in reduced relatives can also be PRO. It also incorrectly predicts that we should find DPs that can bind SOAs and be relativised on in reduced relatives, but not be PRO. Once one adds an additional level to capture the QSH, Figure 3 begins to look more like Figure 1—that is, one arrives at the hierarchical view of subjecthood. In this sense, the hierarchical view of subjecthood is an improvement on the minimal-threshold approach, given more careful



**Figure 2:** Conjunctive view of subjecthood.  
 $p_x$  = subjecthood property



**Figure 3:** Weak absolute-metric view of subjecthood.

N = DPs with necessary properties  
 P = DPs with possible properties

<sup>21</sup> An example of this second weaker interpretation might be Preminger (2014) who distinguishes between “quirky subject” and “non-quirky subject” languages.

<sup>22</sup> See footnote 11.

examination of the data. Consequently, the distribution of subjecthood properties cannot simply be subjecthood properties clustered together; rather, they must be organised hierarchically.

## 7 Conclusion

This paper makes two important contributions to the theory of subjecthood. The first is the empirical contribution of the Quirky Subject Hierarchy (QSH). Quirky subjects in Hindi, German, Basque, Icelandic, and Laz were submitted to three crosslinguistic subjecthood diagnostics: binding of subject-oriented anaphora, being PRO, and undergoing relativisation in reduced relatives. This revealed that the subjecthood properties exhibited by quirky subjects are constrained by a set of ordered entailments. These entailments constitute an implicational hierarchy, which I call the Quirky Subject Hierarchy. The QSH shows that the behaviour of quirky subjects is predictable and codifies the challenge that quirky subjects present for the theory of subjecthood. Moreover, it provides a framework for studying quirky subjects in other languages.

The second contribution is preserving the enterprise of reducing subjecthood to a purely structural phenomenon by accounting for the QSH in terms of movement. It was proposed that subjecthood properties are distributed across heads in the functional sequence such that a DP must raise to that position to bear the associated property. The QSH results from the requirement that a DP move cyclically through these subjecthood positions. Quirky subjects differ from nominative subjects in that their final landing site may be an intermediate subjecthood position, yielding a proper subset of subjecthood properties. Therefore, there is no such thing as a subject in the eyes of the grammar. Crucially, this theory of subjecthood is only possible in light of the QSH because it reveals that subjecthood properties are distributed in a way amenable to an analysis in terms of syntactic structure.



|  | Binding | PRO | Reduced Relative |
|--|---------|-----|------------------|
| Faroese<br>(Jónsson 2009; Þráinsson 2007; Þráinsson et al. 2004)             | ✓       | ✓   | ??               |
| Gujarati<br>(Mistry 2004)  | ✓       | ??  | ??               |
| Hungarian<br>(Rákosi 2006)   | ✓       | ✗   | ✗                |
| Kannada<br>(Amritavalli 2004)  | ✓       | ✗   | n/a              |
| Korean<br>(Yoon 2004)  | ✓       | ??  | ??               |
| Malayalam<br>(Jayaseelan 2004)   | ✓       | ✗   | n/a              |
| Marathi<br>(Wali 2004)   | ✓       | ??  | ✓                |
| Russian<br>(Schoorlemmer 1994; Moore and Perlmutter 2000<br>Sigurðsson 2002) | ✓       | ✗   | ✗                |
| Spanish<br>(González 1988; Masullo 1993; Gutiérrez-Bravo 2006)               | ✓       | ✗   | ??               |
| Tamil<br>(Sundaresan 2012)   | ✓       | ✓   | n/a              |
| Telugu<br>(Subbarao and Bhaskarao 2004)                                      | ✓       | ✓   | n/a              |

Table 1: Typological survey of quirky subjects.

## Appendix: Additional data

This appendix includes additional data in support of the Quirky Subject Hierarchy (QSH), which are not included in the main paper. Moreover, the typological predictions of the QSH have been confirmed against a survey of the existing literature on quirky subjects in eleven languages other than those investigated directly in this paper. The results are summarised in Table 1. Insofar as the data are available, quirky subjects in these languages conform to the QSH.<sup>23</sup>

### German

German quirky subjects can bind SOAs (72), but cannot be PRO (73) or undergo relativisation in reduced relatives (74). Thus, they are Hindi-type quirky subjects.

<sup>23</sup> The Reduced Relative Diagnostic for Kannada, Malayalam, Tamil, and Telugu is marked as “n/a” because Dravidian languages do not have distinctive reduced relative clauses (Rajesh Bhatt, p.c.). While they have nonfinite prenominal relative clauses, they do not differ structurally from ordinary finite relative clauses. Thus, Tamil and Telugu quirky subjects might be classified as either Icelandic-type or Laz-type.

(72) *Binding Diagnostic*

[Dem Fritz]<sub>1</sub> gefällt [das Bild von sich<sub>1/\*2</sub>]  
 the Fritz.DAT likes the picture.NOM of REFL  
 ‘Fritz<sub>1</sub> likes the picture of himself<sub>1/\*2</sub>’

(73) *PRO Diagnostic*

\*Fritz<sub>1</sub> hofft [PRO<sub>1</sub> [die Maria] zu gefallen]  
 Fritz.NOM hopes PRO.DAT the Maria.NOM to like  
 Intended: ‘Fritz hopes to like Maria’

(74) *Reduced Relative Diagnostic*

\*der [\_\_\_\_<sub>1</sub> [der Fritz] gefallende] Mann<sub>1</sub> ...  
 the \_\_\_\_<sub>1</sub>.DAT the Fritz.NOM liking man.NOM  
 Intended: ‘the man who likes Fritz ...’

The status of the German anaphor *sich* as a SOA is disputed. It can have a direct object as an antecedent in a ditransitive, as shown in (75a) with *zeigen* ‘show’. However, object antecedent of *sich* is not possible with every ditransitive predicate, as shown in (75b) with *geben* ‘give’.

- (75) a. [Der Fritz]<sub>1</sub> hat [der Maria]<sub>2</sub> [ein Bild von sich<sub>1/2/\*3</sub>] gezeigt  
 the Fritz.NOM has the Maria.DAT a picture.ACC of REFL shown  
 ‘Fritz<sub>1</sub> showed Maria<sub>2</sub> a picture of {himself<sub>1</sub> / herself<sub>2</sub>}’  
 b. [Der Fritz]<sub>1</sub> hat [der Maria]<sub>2</sub> [ein Bild von sich<sub>1/\*2/\*3</sub>] gegeben  
 the Fritz.NOM has the Maria.DAT a picture.ACC of REFL given  
 ‘Fritz<sub>1</sub> gave Maria<sub>2</sub> a picture of {himself<sub>1</sub> / \*herself<sub>2</sub>}’

I take the contrast between (75a) and (75b) to show that c-command alone is not a sufficient condition for binding *sich*, unlike English *herself/himself*, but I do not explore the issue further.

Eyþórsson and Barðdal (2005) claim that German does in fact allow quirky subjects to be PRO, contrary to the widespread consensus in the German literature. Their claim is based on an acceptability-judgement survey. There is unfortunately not sufficient space to give their argument justice, but I will mention two confounds with their survey. First, they tested quirky subjects in nonfinite adjuncts, rather than canonical nonfinite complements to control predicates. It is debated whether nonfinite adjuncts involve PRO or just simple predication (see Landau 2013:ch. 6). Second, the passivised predicates that Eyþórsson and Barðdal use in their target items allow both dative and accusative objects. An accusative object under passivisation is nominative in German, which can naturally be PRO. Thus, in their target items, there is no way to know that the participant is using the quirky-subject variant. There are also numerous methodological issues with the survey that call its results into question, which I cannot take up here, e.g. there were no controls.

## Basque

Basque quirky subjects can bind SOAs (76), but cannot be PRO (77) or undergo relativisation in reduced relatives (78). Thus, they are Hindi-type quirky subjects.

(76) *Binding Diagnostic*

Jon- $i_1$  [bere buru-a ] $_{1/*2}$  gusta-tzen zaio  
 Jon-DAT his head-DET.NOM like-IMPV AUX(3SG.ABS · 3SG.DAT)  
 ‘Jon $_1$  likes himself $_{1/*2}$ ’

(77) *PRO Diagnostic*

\*Jon-ek $_1$  [PRO $_1$  gustatu Miren ] nahi du  
 Jon-ERG PRO.DAT like Miren.NOM want AUX(3SG.ABS · 3SG.ERG)  
*Intended:* ‘Jon wants to like Miren’

(78) *Reduced Relative Diagnostic*

\*[ \_\_\_\_ $_1$  Miren gustatu-ta-ko ] gizon-a $_1$  ...  
 \_\_\_\_ $_1$ .DAT Miren.NOM like-PTCP-LOC man-DET.NOM  
*Intended:* ‘the man who likes Miren ...’

The anaphor used in the Binding Diagnostic (76) is the reflexive anaphor *bere buru*, which literally means ‘his/her head’, but which can be interpreted anaphorically. Rebuschi (1993) shows that *bere buru* can receive an anaphoric interpretation only when bound by the subject (79a). Otherwise, if it is bound by anything else, it can only receive a literal interpretation (79b).

(79) Peio $_1$  Miren- $i_2$  [bere buru-az ] mintza-tu zaio  
 Peio.NOM Miren-DAT his head-INST speak-PFV AUX(3SG.ABS · 3SG.DAT)

a. *Anaphoric interpretation*

‘Peio $_1$  has talked to Miren $_2$  about {himself $_1$  / \*herself $_2$ }’

b. *Literal interpretation*

‘Peio $_1$  has talked to Miren $_2$  about {his $_1$  / her $_2$ } head’

[Rebuschi 1993:141]

**Ergatives**

Ergative subjects in Hindi (80), Basque (81), and Laz (82) obey the QSH. In Hindi, the ergative-absolutive case alignment is restricted to perfective aspect, which prevents applying the PRO Diagnostic and the Reduced Relative Diagnostic to ergative subjects. With the PRO Diagnostic, it is unclear whether the case alignment in nonfinite clauses is ergative-absolutive or nominative-accusative, rendering the results inconclusive. With the Reduced Relative Diagnostic, Hindi reduced relatives are always either progressive or passive, like English reduced relatives.

(80) *Hindi*a. *Binding Diagnostic*

Anu-ne $_1$  [apnii $_{1/*2}$  kitaab] parh-ii  
 Anu-ERG REFL book read-PFV  
 ‘Anu $_1$  read his $_{1/*2}$  book’

[Reese 2002:10]

(81) *Basque*a. *Binding Diagnostic*

Jon-ek<sub>1</sub> [bere buru-a ]<sub>1/\*2</sub> jo du  
 Jon-ERG his head-DET.NOM hit AUX(3SG.ABS·3SG.ERG)  
 ‘Jon<sub>1</sub> hits himself<sub>1/\*2</sub>’

b. *PRO Diagnostic*

Jon-ek<sub>1</sub> [PRO<sub>1</sub> eskiatu] nahi du  
 Jon-ERG PRO.ERG ski want AUX(3SG.ABS·3SG.ERG)  
 ‘Jon wants to ski’

c. *Reduced Relative Diagnostic*

\*[ \_\_\_\_<sub>1</sub> Jon jo-ta-ko ] gizon-a<sub>1</sub> ...  
 \_\_\_\_<sub>1</sub>.ERG Jon.NOM hit-PTCP-LOC man-DET.NOM  
 Intended: ‘the man who hit Jon ...’

(82) *Laz*a. *Binding Diagnostic*

[Ham biç'i-k ]<sub>1</sub> ti-muşi<sub>1/\*2</sub> yali-s dzir-u  
 this boy-ERG head-POSS.3.NOM mirror-LOC see-3.PAST  
 ‘This boy<sub>1</sub> saw himself<sub>1/\*2</sub> in the mirror’

[Demirok 2013:21]

b. *PRO Diagnostic*

Xordza-k<sub>1</sub> [PRO<sub>1</sub> o-bgar-u ] gor-um-s  
 woman-ERG PRO.ERG NMS-cry-NMS want-IMPV-3  
 ‘The woman wants to cry’

[Demirok 2013:23]

c. *Reduced Relative Diagnostic*

[ \_\_\_\_<sub>1</sub> kitabi zit'-eri ] bere<sub>1</sub> ...  
 \_\_\_\_<sub>1</sub>.ERG book.NOM read-PTCP child.NOM  
 ‘the child who has read the book ...’

[Demirok, p.c.]

(80)–(82) show that ergative subjects in Hindi, Basque, and Laz obey the QSH. However, there is one caveat concerning Basque because Basque ergative subjects pattern differently than Basque dative subjects; see above. Whereas dative subjects only pass the Binding Diagnostic, ergative subjects pass the Binding Diagnostic and the PRO Diagnostic. A solution to this asymmetry is that, in Basque, T<sup>0</sup> bears [•<sub>DEP</sub>•], which can agree with either a nominative DP or an ergative (dependent-case) DP, but not a lexically case-marked DP, i.e. a dative subject.

## Acknowledgements

I am indebted to Rajesh Bhatt, Kyle Johnson, Gereon Müller, and Ellen Woolford for critical discussions that shaped this project, in addition to Sakshi Bhatia, Stefan Keine, Julie Anne Legate, Jon Ander Mendia, Jason Merchant, and audiences at NELS 45, MIT, and the University of Massachusetts

Amherst for helpful discussion and comments. For discussion about data and grammaticality judgements, many thanks to Rajesh Bhatt (Hindi), Ömer Demirok (Laz), Anton Karl Ingason (Icelandic), Stefan Keine (German), René Lacroix (Laz), Jon Ander Mendia (Basque), and Einar Freyr Sigurðsson (Icelandic). All remaining errors are my own. This work is supported by the National Science Foundation Graduate Research Fellowship under NSF DGE-1451512.

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