Subject islands, topicalization and freezing
Evidence from Hungarian

1. Introduction

Phrases functioning as grammatical subjects have been among the first to be identified as strong islands, i.e., syntactic domains from which subextraction is not permitted (see Chomsky's 1973 Subject Condition):

(1) *Who did a picture of __ create a scandal?

While the unacceptability of subextraction from subjects may indeed be robust in many cases, empirical research has uncovered that the islandhood of subjects exhibits a large amount of variability both across and within languages. A great portion of this variability has been ascribed to two factors: (a) the presence or absence of movements that subjects undergo in the course of their derivation (such as raising to a Case-related or a topic position), and (b) their base position.[1] In particular, the syntactic movements applying to the subject phrase have been argued to render it non-permeable, as a result of an assumed 'freezing' effect that (either some or all) movement operations give rise to (see Wexler and Culicover 1977, 1980). On the other hand, the base position of subjects has also been claimed to play a role in the variation in their opacity, reflecting a complement–non-complement asymmetry. The present study is an empirical investigation of these two main factors, and their potential interaction, in Hungarian.

We explore the predictions of three competing current approaches to subject islands: (i) those based on a conception of movement-induced freezing, (ii) descendants of the Huang's (1982) Condition on Extraction Domains (CED), and (iii) Chomsky's (2008) hybrid proposal that incorporates both lines of thought. These alternatives, construed broadly, make conflicting predictions with regard to expected patterns of subject opacity. We have conducted an acceptability rating experiment to address some of these predictions in Hungarian. Hungarian offers an ideal testing-ground in that it permits (non-focused) subjects both to remain *in situ* (post-verbal) and to be fronted to the pre-verbal field, independently of their base position. The results of our rating experiment suggest that the base position of subjects is the primary factor contributing to their opacity, in which fronting plays no role.

The paper is structured as follows. Section 2 presents a review of the three types of current syntactic approaches to the islandhood of subjects noted above, fleshing out their relevant implications. On the basis of this, we formulate the specific questions that our empirical study seeks to address. Providing some essential background on the syntax of subjects in Hungarian, Section 3 outlines the specific predictions made by the previously reviewed theories regarding their opacity. Section 4 then presents the rating experiment and the results. Section 5 discusses the outcomes of the experiment in light of the competing approaches. Finally, Section 6 is a summary of the main conclusions and outstanding questions.

[1] This paper is concerned with variation among and within configurational languages in which subject phrases of transitive verbs are base-generated higher than objects. Abbreviations used in glosses: Subj=subjunctive, Dem=demonstrative, Prt=verbal particle.

2. Subject islands and freezing

A prevalent account of the islandhood of subject noun phrases in the period of the Government and Binding Theory held that the opacity of subjects is due to the nature of the syntactic position in which they are located. In particular, subextraction is licensed only from properly governed syntactic domains, like lexically governed complements (Huang 1982: 505, Condition on Extraction Domains; see also Cinque 1977). Since subjects (and adjuncts) are in a non-governed non-complement position, extraction of an element from within them is illicit. Some minimalist accounts (most notably, Uriagereka 1999) essentially reinstantiate and generalize this CED-type account of subject islands, albeit without relying on the notion of government. Uriagereka's (1999) linearization-based approach requires structurally complex non-complements, including subjects, to be spelled out separately from the rest of the structure, which has a 'generalized CED' effect: it renders the internals of a specifiers and adjuncts unavailable for movement (see also Nunes and Uriagereka 2000, Nunes 2004; Johnson 2003).

This view of specifiers may in principle also cover what have come to be called the 'freezing' effect of movement. According to the assumption of Generalized Freezing, formulated schematically in (2), no element may be subextracted from a constituent subjected to movement (= Wexler and Culicover's 1977, 1980 Raising Principle; see Browning 1991). This generalization is intended to capture the perceived opacity of constituents that undergo a movement operation such as topicalization, scrambling or extraposition.

(2) Generalized Freezing
* B . . . [. . . t_B . . .]$_A$ . . . t_A

A generalized CED-type account according to which non-complements are not penetrable to movement can derive (2) as a theorem, granting that movements can only target non-complement positions (which is a consequence of the Projection Principle).

The undiversified, uniform view of specifiers as being opaque held by a generalized CED-type account is difficult to sustain, however. There is apparently a wide range of specifier elements to be found from which subextraction is acceptable. First, it is not possible to treat all dependents of a verb from which subextraction is possible as a complement, simply because there is only one complement position within a split verb phrase structure. For instance, whichever PP is taken to be a complement in (3) (modeled after an example in Barrie 2011, p. 68), the other PP must be a non-complement, disallowing subextraction, contrary to fact.

(3) Which problem should John be talked to __ about __ ?

Subjects of Small Clauses, analysed as specifiers, are also transparent to movement in many cases. Subjects of English *there*-existentials (4a) (Merchant 2001: 187; Lasnik and Park 2003) and subjects of verbal Small Clauses (4b) (Basilico 2003) are cases in point.[2]

[2] Extraction from ECM subjects, such as (i-ii) have received mixed judgments in the literature: some authors take them to be relatively acceptable (e.g., Bošković 1997, Abels 2008, Chomsky 2008), while others judge them to be illicit (e.g., Kayne 1984).
(i) Which topics do you expect books about __ to sell well?

(4) a. Which candidate were there posters of __ all over the town?
b. Who did you let a rumor about __ spread around the entire department?

As noted by Sheehan (2013a), the problem is only exacerbated on a Kaynean approach to phrase structure, according to which arguments of heads in head-final constructions all occupy a specifier position.

Thus reducing movement-induced freezing to the general opacity of specifiers has little to recommend itself. The reverse scenario is a good deal more conceivable, however, and indeed has been proposed in the case of subject islands. Namely, assuming the VP-Internal Subject Hypothesis, it is possible to argue that subjects occupying Spec,TP are impenetrable to movement transformations because all subject noun phrases arrive at this position by displacement from inside the verb phrase. Given the freezing generalization in (2), this renders subjects frozen.

A freezing-based approach to subject islands has been put forward in different forms; of these we make note of two influential proposals here. The first type of proposal espouses Generalized Freezing, which it derives from the conception that movement chains must be uniform. After a phrase undergoes movement, subextraction from the head of the created chain disrupts its uniformity (Takahashi 1994, Ochi 1999, Stepanov 2001, 2007). Boeckx (2003; 2008b, 2012) develops what can be described as a selective freezing based alternative that ultimately takes Agreement to be the trigger of the freezing of subjects. According to his account, once (finite) T is merged and subject-raising to Spec,TP takes place, the subject A-chain is complete and TP is subjected to early spell-out (see Epstein et al. 2012 for another account of in the same vein). It is this early spell-out that prevents the extraction of any material from the subject noun phrase. A-bar movements fall outside the scope of this account: it is only Agreement-related movements that are claimed to yield freezing.[3]

Unless further assumptions are added, both these selective freezing based analyses and generalized freezing based accounts of subject islands make the clear prediction that *in situ* subjects should be transparent. In his seminal work drawing attention to the variability in the islandhood of subjects, Stepanov (2007) argues at length that this prediction is apparently borne out in a range of languages (including English *there*-existentials like (4a)). Caution must be exercised, however. First, it is difficult to ascertain on the basis of a narrow set of examples whether in the relevant languages the apparently transparent subject noun phrases are indeed in an *in situ* non-complement position. What is even more difficult to show, and for many of the relevant languages has not been demonstrated, is that subjects are only transparent when *in situ*, but not in other (i.e., *ex situ*) positions, in line with what the generalized freezing based approach would predict.[4]

Second, judgments are not always as clear-cut as a generalized freezing approach to subject islands would lead one to expect; this is seems to be the case in Japanese (see Jurka et al. 2011). It also contributes to blurring the picture that in some languages the

(ii) Which politician do you believe the rumors about __ to be false?

[3] Miyagawa's (2010) proposal that in discourse-configurational languages it is topic/focus-features that play the role of phi-features may, however, add a particular twist to this picture. If taken literally, on that approach it would be predicted that in discourse-configurational languages topic/focus-feature driven movements lead to freezing.

[4] Irrelevantly for present purposes, Boeckx's freezing-based alternative only predicts the highest (Case-marked) A-positions to be opaque; intermediate A-positions are expected to be transparent.

evidence is apparently mixed. Müller (2011) suggests that in German transitive subjects are opaque even in their in situ position, a state of affairs that is unexpected on a freezing approach to subject islands. Diesing (1990: 55, 1992), Haider (1983, 1993, 1997), Jacobs (1999), Lutz (2001, cited in Jurka 2010) and Abels (2008: 76) provide examples that point in the opposite direction, however.[5] Although Müller convincingly argues that several of these examples are actually irrelevant, there is a residue of subextractions from in situ transitive subjects in German, judged to be acceptable either by some or by all these authors, whose derivation remains ill-understood. Finally, external argument subjects do not behave alike in German: subextraction from unergative subjects is significantly less degraded than subextraction from transitive subjects (Jurka 2010).

Third, many of the examples that putatively support the transparence of subjects in a variety of languages involve subextraction from the theme subject of unaccusative, passive or psych predicates, occupying its base position. This happens to be the case for German (for this point, see Fanselow 2001: 422, Müller 2011) and for Hungarian (see Stepanov 2007: 90, citing an example from É. Kiss 1987; see also É. Kiss 2002 for similar examples involving internal argument subjects). Subextraction from these types of subjects is predicted to be grammatical both by freezing-based approaches (as these subjects are not moved) and by CED-type accounts (as they are complements).[6] On both types of accounts, once these subjects raise to a *v*P-external subject position, they should no longer be transparent: either because they have undergone movement (freezing) or because they are now in a non-complement position (CED). Importantly, in these cases the opacity effect follows on the assumption that subextraction may only target the higher occurrence of the moved subject.

That is an assumption, however, that Chomsky's (2008) approach to subject islands proposes to dispense with. Adopting the view that the derivational cycle is defined by the notion of the phase (Chomsky 2001), Chomsky argues that A- and A-bar movements within the same phase may proceed in parallel (for the same view, see Hiraiwa 2005, Bošković 2008, 2012). In particular, he argues that a lower copy of an element forming a movement chain is available for syntactic computation throughout the derivation of a given phase.[7] This effecively allows an A-bar movement operation to target (part of) the base copy of the subject (and, irrelevantly for our purposes, any of its non-highest copies within the same phase). A significant repercussion of this view of derivational cyclcity is that the base occurrence of an internal argument subject is predicted to be available for subextraction even in sentences in which the subject overtly raises to TP, leaving the base occurrence phonologically unrealized.[8] Chomsky (2008) suggests that this prediction is borne out in the case of PP-subextraction from

[5] For French, see Starke (2001: 36).

[6] See Belletti and Rizzi's (1988) unaccusative analysis of object experiencer psych verbs; see also Pesetsky (1995).

[7] Arguably, this is in fact an inescapable consequence of the Internal Merge theory of movement, according to which movement "chains" are formed by the very same syntactic object entering multiple Merge operations.

[8] That internal arguments should be transparent is also predicted on the assumption that all *v*Ps, including unaccusative and passive *v*Ps, are phases (see Legate 2003, Sauerland 2003, Deal 2009). In particular, assuming that movements proceed through phase edges, A-bar subextraction from internal arguments may take place to the edge of *v*P before the (remnant) internal argument leaves its base position.

English internal argument subjects such as (5a), as opposed to subextraction from transitive subjects such as (5b).[9]

(5) a. It was the car (not the truck) of which the driver was awarded a prize / arrived late.
b. *It was the car (not the truck) of which the driver caused a scandal.

To rule out subextraction from transitive (and more generally, external argument) subjects, Chomsky (2008) proposes a specific combination of the CED-type and the freezing-based approaches. First, like Boeckx (2003), he assumes that A-movement to a Case position leads to freezing (the 'Inactivity Condition').[10] Second, he stipulates that the internals of a phrase located in a phase edge, such as the edge of *v*P, are unavailable for further computation. Adopting this latter assumption in their treatment of subjects in Spanish, Gallego and Uriagereka (2007: 55) term it the Edge Condition. The Edge Condition can be conceptualized as a restricted, selective version of what we referred to as the 'generalized CED': it renders specifiers of some phrases (namely, phases) opaque, while it leaves complements permeable to subextraction. These two constraints jointly derive the ungrammaticality of (5b). While the Inactivity Condition precludes subextraction from the occurrence of the subject in Spec,TP, the Edge Condition rules out subextraction from the subject in Spec,*v*P.

In addition to syntactic approaches a variety of non-syntactic accounts have been proposed to model subject islands.[11] Of relevance to our present concerns are those treatments that relate the opacity of subjects to pragmatic factors, in particular, to the topic status of subjects. It has been argued, in particular, that while focused syntactic domains are transparent to subextraction, topics are generally opaque (Erteschik-Shir 1973, 2006, 2007, Van Valin 1986, 1995, Takami 1989, Bayer 2004, Goldberg 2006, 2013, Bianchi and Chesi 2014); call this generalization Topic Opacity.[12] Topic Opacity has been stated and explained in different ways by different authors. Most notably, it has been proposed to be derived from purely information structural considerations (Goldberg 2006, 2013), or from principles of the syntax-information structure alignment (Erteschik-Shir 2006, 2007).[13]

Since canonical subjects in languages like English are a default topic (Chafe 1987, Lambrecht 1994, Erteschik-Shir 1997), the common islandhood of canonical subjects follows. The approach also provides a straightforward explanation for the robust opacity of finite sentential subjects, as well as for the transparent behaviour of the

[9] For similar observations in English, see Kuno (1973) and Runner (1995: 113f); for Italian, see Cinque (1990). For arguments that such examples involve syntactic movement, rather than base generation, of the PPs, see Sheehan (2013b) and Bianchi and Chesi (2014).

[10] In Chomsky (2008), this is formulated as follows: "an A-chain becomes invisible to further computation when its uninterpretable features are valued."

[11] For critical discussions of processing-based approaches to a range of islands, which we put aside here, see Phillips (2006, 2013), Sprouse (2009), Sprouse, Wagers and Phillips (2012). For a plausible processing-based account of extraposition islands, see Culicover and Winkler (2014).

[12] The generalization is closely related to Fiengo and Higginbotham's (1981) Specificity Condition, and to Guéron's (1980) Name Constraint, according to which specific or referential NPs cannot be subextracted from. Topic constituents are mostly taken to be strong islands (but see Meinunger 2000 for the view that they are weak islands).

[13] On Goldberg's (2013) account, *wh*-extraction from a topic is anomalous because the subextracted element cannot be at once backgrounded (being part of the topic) and discourse-prominent (being the *wh*-focus). Bianchi and Chesi (2014) capture the restriction, in part, by reference to the non-reconstructability of aboutness topics to their predicate-internal base position.

subject of *there*-existentials, illustrated in (4a) above. As in the latter type of sentences the subject is not the topic, it is expected to be permeable; while finite clausal subjects are opaque in languages like English because they function as topics (Koster 1978, Takahashi 2010). Further, assuming that topic status goes together with externalization from the predicate phrase, *v*P-internal subjects do not normally function as topics, hence this pragmatic account predicts, just like freezing approaches, that *in situ* subjects in general should be transparent.

That topicalized phrases are opaque has long been noted in structure-based approaches too. Most prominently, this has been analyzed as a freezing effect due to movement (see Wexler and Culicover 1977, 1980). What a movement induced freezing analysis cannot capture, however, is the opacity of base-generated topics, exemplified below with a frame-setting topic.[14] Therefore, granting that fronted and base-generated topics occupy the same *type* of left-peripheral position, the opacity of topics appears to be independent of freezing.[15]

(6) *Which elections do you think that [according to some reports on __] exit polls showed a neck-to-neck race between the main candidates?

An alternative structural explanation may be furnished by any theory according to which adjunct positions are opaque: namely, it could reduce the opacity of topic positions to their supposed adjunct status. While such an account may be appropriate for topics that are structural adjuncts, it is not sufficiently general. It may work for languages like Hungarian, in which topics are recursive, it does not extend to topics that apparently occupy a (unique) specifier position; which is the case for instance in V2 languages like German (Müller and Sternefeld 1993).

It is not the purpose of this paper to establish what the correct *explanation* should be for Topic Opacity (or, for that matter, for any of the syntactic restrictions reviewed above). In view of the considerations in the preceding paragraph, nevertheless, it seems fair not to take Topic Opacity to fall under either movement-induced freezing or the general opacity of structural adjuncts, but to conceptualize it instead as an independent restriction governing the syntax-information structure interface (for data pointing to the same conjecture, see Culicover and Winkler, under revision).

In addition to Topic Opacity, in this section we have introduced two main types of structural restrictions pertinent to the opacity of subjects: CED-type restrictions and freezing-based restrictions. Within each type we identified a generalized and a selective (or relativized) version. We can summarize their repercussions for the islandhood of subjects as follows. The generalized CED takes all specifiers to be opaque; while its selective version only takes specifiers in phase edges to be impermeable. The generalized freezing approach predicts all moved subjects to be islands; its selective version only takes A-movement to an agreement/Case-related position to induce

[14] Rizzi's (2006) notion of Criterial Freezing (which freezes phrases in criterial positions) is independent of movement, therefore applies to derived and base-generated topics alike, unlike generalized freezing. Criterial Freezing is irrelevant to our present concerns, however, as it constrains the extraction of, rather than subextractions from, criterial specifiers.

[15] Chomsky's (2008) phase-relativized CED account could in principle be extended to topics, on the assumption that topics are, in the relevant sense of the term, in the edge of the CP phase. The latter assumption is dubious, however, for languages like Hungarian: a variety of peripheral heads belonging to the CP-phase appear to be projected higher than fronted topics (e.g., complementizers).

freezing. The predictions are straightforward, but the empirical landscape, as we noted in this section, is not as clear-cut as one would hope.

It is not the objective of this paper to provide a general critical theoretical and empirical assessment of these alternative approaches (for extensive discussion, see Müller 2011 and Boeckx 2012). We presented them as prominent competing—or, for Chomsky (2008), complementary—avenues of current research that in themselves make strikingly divergent predictions regarding the opacity of subjects. The aim of our study is to bring data from Hungarian to contribute to this ongoing debate.

Hungarian offers an ideal testing-ground in that it permits subjects both to remain *in situ* and to be fronted to a pre-verbal position, independently of their base position. In particular, in view of the core ideas at the heart of the theoretical alternatives reviewed above, our rating experiment seeks to address the following two general questions in Hungarian:

(7) a. What role does fronting play in the opacity of subjects?
b. What role does the base position play in the opacity of subjects?

Question (7a) has been addressed through a comparison of subextractions from fronted and *in situ* subjects. To implement the second question, we have investigated the acceptability of subextraction from two types of subjects: transitive subjects and unaccusative subjects, comparing them to objects as a baseline.

After providing some relevant background on the syntax of Hungarian, in the next section we outline the predictions made by the different approaches for the Hungarian data that our empirical study investigates.

3. Predictions for Hungarian

3.1 Subjects in Hungarian

Hungarian has no dedicated Case- or agreement-related canonical subject position.[16] Subjects may either remain *in situ* or they can be fronted to a pre-verbal position.[17]

(8) a. *Becsengetett a postás.*
rang the postman
'The postman rang the bell.'
b. *A postás becsengetett.*

The finite verb raises in neutral sentences to a relatively low *v*P-external position (É. Kiss 2008, Surányi 2009). Pre-verbal subjects and other argument NPs are analyzed as topics, externalized from the predicate phrase by syntactic movement (É. Kiss 1987,

[16] Assuming that TP is projected nevertheless, two possibilities offer themselves. One of these is that Spec,TP is invariably null: either unfilled, or filled by *pro*. Another possibility is that Spec,TP is exploited as the immediately pre-verbal focus position of the language (see Surányi 2012 for an empirical argument in favor of this view). The latter would be in line with Miyagawa's (2010) parametric account of focus-configurationality.

[17] In this paper we are concerned with non-quantificational NPs in neutral (broad focus) sentences. Focal and (some) quantificational NPs have special syntax: they may, and often must, undergo fronting to distinct, dedicated pre-verbal positions (see É. Kiss 2002). That post-verbal subjects are not extraposed from a pre-verbal position is evidenced, among others, by the fact that they may have narrow scope with respect to structurally low scope-bearing NPs and adverbials (cf. Fox and Nissenbaum 1999).

2002: 12-14, 27; Puskás 2000; Lipták 2011). As topics are recursive in the language, the subject freely intermingles with other topics in the pre-verbal field.

The topic status of pre-verbal subjects is supported by a wealth of evidence, including their obligatory surface scope over pre-verbal negation. It is also illustrated by the felicity contrast between the out-of-the-blue utterances in (9). The verb 'appear' licenses its indefinite subject only post-verbally (9a), but not in a pre-verbal position (9b), where it would have to be interpreted as a topic. The topic status is incompatible with the pre-verbal subject, because the sentence introduces it as a new referent, whose existence is not presupposed.

(9) a. *Megjelent egy érdekes új könyv.*
appeared an interesting new book
'An interesting new book appeared.'
b. #*Egy érdekes új könyv megjelent.*

Similarly, if the postman is not given in the discourse, (8a) is felicitous as an answer to "What was that noise?" while (8b) is not.

A matter of contention that directly bears on the syntax of subjects is the question whether the Hungarian verb phrase is non-configurational. After an intensive period the (non-)configurationality debate abated, with the non-configurational account becoming the received view (É. Kiss 1987, 1994, 2002). More recent work has defended a configurational approach, however. Revisiting the controversy, Surányi (2006a,b) argues for a fully configurational analysis according to which some, but not all, subject-object asymmetries are obliterated by Japanese-type A-scrambling that takes place in the post-verbal field, following the raising of the verb out of the *v*P. É. Kiss (2008) proposes a hybrid alternative, according to which the configurationally structured verb phrase becomes non-configurational (it is 'flattened') in the course of the syntactic derivation. Referring the reader to this work for relevant discussion, here we will assume the correctness of the configurational analysis.

3.2 Predictions of competing approaches

With this background in place we are now in the position to formulate the diverging predictions that the main approaches to subject islands reviewed in the preceding section make for Hungarian with regard to subextractions from unaccusative and transitive subjects, and from objects, both when they occupy their post-verbal *in situ* position and when they are topicalized. For ease of reference, the overview of the respective predictions is followed by a tabular summary below.

Consider first the approach that seeks to reduce the islandhood of subjects to their topic status, namely to the Topic Opacity generalization. Such an account predicts each of the topicalized NP types to be opaque to subextraction. On the other hand, post-verbal, *in situ* NPs, not being topics, are expected to be uniformly transparent. Since Topic Opacity may be conceptualized as independent of structural accounts of subject islands, in expounding the predictions of each structural approach we will also examine in what follows whether and how the overall predictions are affected if the account is combined with the assumption of Topic Opacity.

The generalized CED approach predicts topicalized NPs, being non-complements, to be opaque. Of the in situ NPs, transitive subjects, generated in the specifier of *v*P, are expected to be opaque, while objects and unaccusative subjects, being complements, are predicted to be permeable to subextraction. Topicalized NPs, having undergone

movement, should be opaque according to generalized freezing approaches too, while they predict both types of subjects as well as objects to be transparent when *in situ*. The assumption of Topic Opacity is not relevant on either the generalized CED approaches or the generalized freezing accounts: they predict NPs subjected to topic fronting to be impervious whether or not Topic Opacity holds.

On the basis of Agreement-relativized (or Case-relativized) freezing accounts we expect *in situ* subjects and objects to be available to subextract from. Since fronted NPs are not raised to an Agreement-related (or Case-related) A-position, they too, are predicted to be permeable, providing that topics are not taken to be generally opaque. If, however, Topic Opacity holds, then extraction from fronted NPs is expected to be unacceptable on Agreement-relativized freezing approaches too. Chomsky's hybrid account assumes a phase-relativized version of the CED generalization, according to which the internals of the specifier in the edge of *v*P are inaccessible to movement. While this leaves objects and *in situ* unaccusative subjects unaffected, it should make *in situ* transitive subjects opaque.

Chomsky also assumes Agreement-relativized freezing, but since fronted NPs are not raised to an Agreement-related A-position, this restriction is irrelevant to them. The predictions regarding fronted NPs depend on whether or not Topic Opacity is adopted. If it is not embraced and topics are available for subextraction, then topicalized NPs are expected to be transparent. On the other hand, if Topic Opacity is taken on board, then the topicalized occurrences of the NPs cannot be subextracted from. Crucially, since Chomsky assumes that A-bar movement can proceed from the base occurrences of moved phrases, subextraction from the base copy of topicalized objects and topicalized unaccusative subjects is predicted to be acceptable. The base copy of topicalized transitive subjects in the edge of *v*P, on the other hand, remains impenetrable.

Table 1 below presents an outline of these predictions. An OK or an asterisk marks the predicted availability or unavailability, respectively, of subextractions from the respective NP types.

NP type / Approach to subject islands	**In situ UaS**	**In situ TrS**	**In situ TrO**	**Topicalized UaS**	**Topicalized TrS**	**Topicalized TrO**
Topic Opacity	OK	OK	OK	*	*	*
Generalized CED	OK	*	OK	*	*	*
Generalized freezing	OK	OK	OK	*	*	*
Agreement-relativized freezing	OK	OK	OK	no topic opacity: OK	no topic opacity: OK	no topic opacity: OK
				topic opacity: *	topic opacity: *	topic opacity: *
Phase-relativized CED + Agreement-relativized freezing	OK	*	OK	no topic opacity: OK	no topic opacity: OK	no topic opacity: OK
				topic opacity: OK	topic opacity: *	topic opacity: OK

Table 1. Predictions of different approaches to subject islands
(UaS=unaccusative subject, TrS=transitive subject, TrO=object)

4. An acceptability rating experiment

4.1 Design and materials

The goal of our experiment was to investigate the effect of two main factors on the opacity of subjects, namely, base position and fronting. The experiment had a 3 x 2 design, crossing the type of the NPs from with subextraction takes place (NP) with their surface position (LOC). Two types of subjects were tested: subjects of transitive verbs (TrS) and subjects of unaccusative verbs (UaS), and objects (TrO) were added as a control. The NPs were either in a post-verbal in situ position (In situ), or in a fronted topic position (Topic).

The unaccusative verbs used in the experiment are all at or near the unaccusative end of Sorace's (2000) Unaccusativity Hierarchy, including verbs of change of location, change of state and continuation of a pre-existing state. As for their morphosyntax, all of them show one or more of the following unaccusativity traits: they are formed by an anticausative derivational suffix, they can undergo passivization (a process that can apply to unaccusatives, but not to unergatives), and they may combine with a resultative secondary predicate (Levin and Rappaport Hovav 1995, Mateu 2005). In addition, none of them can take a fake object, a property that characterizes unaccusatives (as opposed to unergatives).

The subextracted element was invariably a D-linked (specific) *wh*-phrase composed of *melyik* 'which' and an oblique case marked singular noun. Subextraction

was long, since *wh*-extraction from pre-verbal NPs is only possible if it targets a pre-verbal position in a superordinate clause.[18]

The *wh*-phrase was a complement of the head noun of the NP from which it was subextracted. Oblique complements were used rather than possessors, despite the fact that Hungarian permits the extraction of dative possessors. This is because dative possessors appear to be relatively freely extractable from NPs across the board.[19] Complement-taking head nouns lexically selected the particular oblique case marker on their complement. The NP from which subextraction was launched was a specific indefinite NP. The indefinite NP consisted of three words: it was introduced by an indefinite article, and it contained an attribute and a noun.

Indefinite NPs were used rather than definite NPs, as the latter are generally more opaque. Importantly, target sentences triggered a specific interpretation of the indefinite NP independently of its in situ or fronted position. This was also reinforced by the attributive modifiers, which were selected in order to give rise to an inference of anaphoricity (e.g., 'a previous charge', 'a former debate', 'a concealed (so-far-undisclosed) interview'). Ensuring a specific reading of the indefinites independently of topicalization is of importance, because topicalized indefinite NPs are known to favour a specific interpretation, and specific NPs are less transparent in general than non-specific ones (Erteschik-Shir 1973, Fiengo and Higginbotham 1981). If some NPs were interpretable as non-specific in their post-verbal position, then that would have introduced a further, hidden variable into our design. Further, this variable would have been uncontrolled, since---without unduly complicating the task---we would have no information, which indefinite NP occurrences were interpreted as specific and which ones as non-specific by each individual participant.

Test sentences contained a matrix bridge verb, embedding a subjunctive complement clause introduced by an overt complementizer.[20] Embedded clauses contained a particle verb in the neutral particle > verb order. This order enforces a topic interpretation of the pre-verbal NPs in the embedded clause, and it makes their focus interpretation unavailable, as that would require an inverted verb > particle order. The embedded clause contained exactly one XP in addition to the particle verb and the tested NP from which subextraction took place, in order to balance length and the overall word order. In the case of transitive subject NPs this XP was the object, in the case of object NPs it was

[18] This is the reason why we opted to test long *wh*-movements despite the fact that they are generally perceived to be less than perfect in Hungarian. In most cases the preferred construction is *wh*-scope marking, which involves short *wh*-movement within the complement clause and a *wh*-scope marker in the matrix.

[19] This might be due to a binding construal in which the external dative possessor binds a null resumptive pronominal possessor within the NP. The relative freedom of possessor subextraction is also the reason why unergative verbs could not be included in the experiment. In particular, thematic arguments of nouns heading unergative subject NPs are normally expressed as possessors rather than as oblique complements. Passive verbs were not included because passivization is a comparatively marked construction in Hungarian, further encumbered by proscriptive stigmatization.

[20] Subjunctive complement clauses were employed because indicative complement clauses behave as weak islands in Hungarian, and because the acceptability of long extraction from indicatives exhibits a degree of inter-speaker variation.

(i) **Hogyan gondolod, hogy megismerkedtem Marival?*
how think.2sg that got.acquainted.1sg Mary.with
'How do you think I got acquainted with Mary?'

(ii) *Melyik hírességgel gondolod, hogy megismerkedtem?*
which celebrity.with think.2sg that got.acquainted.1sg
'Which celebrity do you think I got acquainted with?'

the subject, while in the case of unaccusative subjects XP was a locative adjunct. Word order was balanced in the following way. In TOPIC conditions, in which the NP was pre-verbal, the XP was post-verbal; in IN SITU conditions, in which the NP was post-verbal, the XP was a pre-verbal topic.

The representations in (10) are the schematic structures of the TOPIC and the IN SITU conditions, respectively.[21] (11) provides a set of sample lexicalizations illustrating the three NP types in the IN SITU condition.

(10) a. [$_{CP}$ *which*-PP$_{OBL}$ V [$_{CP}$ C [$_{NP}$ Det Adj N __] Prt+V XP]]
b. [$_{CP}$ *which*-PP$_{OBL}$ V [$_{CP}$ C XP Prt+V [$_{NP}$ Det Adj N __]]]

(11) *Melyik politikussal szeretnéd, hogy …*
'With which politician do you want that …
a. … *az újság-ban meg-jelenjen* [*egy eltitkolt interjú* __]? UaS
the press-in PRT-appear.Subj a concealed interview
… [a concealed interview __] should appear in the press?'
b. … *a közvéleményt meg-változtassa* [*egy eltitkolt interjú* __]? TrS
the public opinion PRT-change.Subj a concealed interview
… [a concealed interview __] should change the public opinion?'
c. … *az újság meg-jelentessen* [*egy eltitkolt interjú-t* __]? Obj
the newspaper PRT-publish.Subj a concealed interview-ACC
… the newspaper should publish [a concealed interview __]?'

4.2 Procedure and participants

Judgments were collected from 48 self-reported adult native speakers (mean age: 25,3) using a 7-point Likert scale, with 7 as the best score. 5 lexicalizations per condition yielded 30 target sentences, to which we added 74 fillers, most of which also contained A-bar movements of varied levels of acceptability. Items were presented one-by-one in pseudo-randomized orders with the Inquisit Web software. 45 participants' data entered statistical analysis. Three participants had to be excluded: one used only the extremes on the scale, one mostly only used 6 as a judgment score, and one had many missing data points.

4.3 Results

Judgments were transformed into z-scores, with means and standard deviations estimated for each subject based on the responses across all items. Subextractions from transitive subjects received the lowest mean judgment both in the *in situ* position (M=-0.54, SD=0.77, CI_{95}=[-0.64;-0.44]) and in the topic position (M=-0.49, SD=0.74, CI_{95}=[-0.59;-0.40]). Subextractions from *in situ* unaccusative subjects (M=-0.15, SD=0.87, CI_{95}=[-0.27;-0.04]) and from topicalized unaccusative subjects (M=-0.13, SD=0.80, CI_{95}=[-0.23;-0.02]) were close to the mean of all judgments (i.e., to the z-score 0), similarly to the mean judgments of subextractions from *in situ* objects (M=0.09, SD=0.85, CI_{95}=[-0.02;0.20]) and from topicalized objects (M=-0.06, SD=0.77, CI_{95}=[-0.16;0.05]). The mean judgments of the experimental conditions, grouped by NP type, are plotted in Figure 1.

[21] Lexically selected oblique case markers are taken to be syntactically adpositional (see É. Kiss 2002).

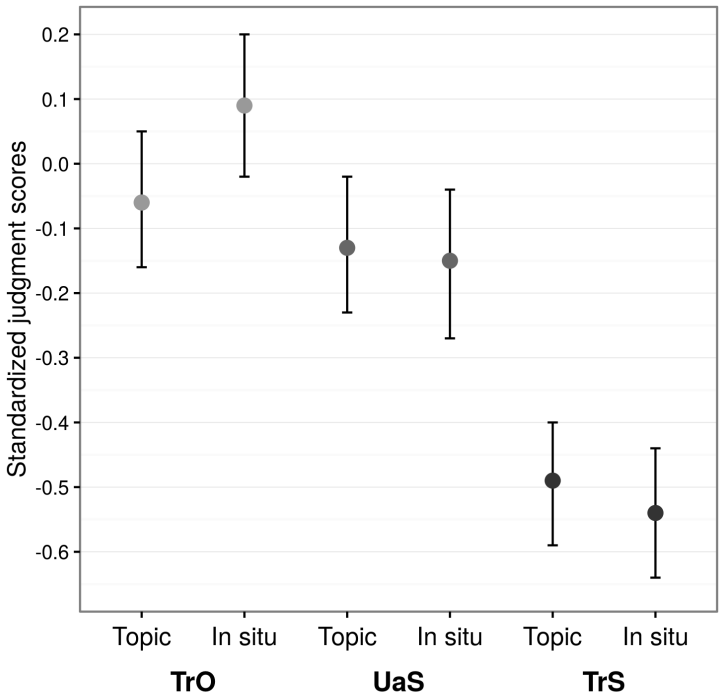

Figure 1. Mean judgments of subextraction from objects, unaccusative subjects and transitive subjects in their in situ and topicalized positions (error bars represent 95% CI)

Linear mixed effect models were used to analyze the *z*-transformed data, taking the type of the NP (NP) and the surface position (LOC) as fixed effects. Participants (SUBJECT) and items (ITEM) are considered as random effects. The full model revealed that the LOC factor does not have any main effect: $\chi^2(1)=0.09$, $p=0.76$; and there is no interaction between the two fixed effects: $\chi^2(2)=0.89$, $p=0.64$. The most parsimonious model contained only the NP as a fixed effect, the SUBJECT and the ITEM as random effects with NP plus LOC (without interaction between them) as random slopes only in the SUBJECT random effect. This model shows that the NP factor has a highly significant effect: $\chi^2(2)=19.41$, $p<0.001$. The *post hoc* test with Tukey contrasts on the NP factor revealed that the two types of subjects differ from each other (TrS–UaS: $Z=3.05$; $p=0.006$). While TrS significantly differs from the object: (TrS–TrO: $Z=-4.3$; $p<0.001$) the UaS and the TrO do not show any significant difference (UaS–TrO: $Z=-1.3$; $p=0.39$).

Before proceeding to evaluate these outcomes, let us address a potentially surprising aspect of the descriptive statistical results. One may wonder why subextraction from objects received a relatively low judgment. We have too remarks to make in this respect. First, as noted in section 4.1 above (see esp. footnote 18), long *wh*-movements out of finite clauses are generally slightly degraded in Hungarian; thus it was expected that even the baseline condition, namely, subextraction from objects, would not receive very high scores. Second, the filler items used in the experiment (n=2880, $M=4.74$, $SD=2.29$) turned out, on average, to have received somewhat higher judgments on the 7-point raw scale than target items (n=1800, $M=3.98$, $SD=1.98$). This has also contributed to shifting the z-scores of (especially the better) target conditions slightly lower. Of key interest, however, are not the absolute values of means in the different NP-type conditons, but rather the pattern of significant differences between them. In this regard it is worth pointing out that the difference between UaS and TrS and between TrO and TrS can both be categorized as a medium-sized effect (Cohen's d(UaS-TrS)=0.48, Cohen's d(TrO-TrS)=0.64).

5. Discussion

The primary objective of our acceptability rating experiment was to empirically investigate the acceptability of subextraction from *in situ* and topicalized unaccusative and transitive subjects in Hungarian, in comparison with subextraction from objects in the same positions. In this section we evaluate the results obtained in light of the competing approaches to subject islands reviewed in Section 2, as summarized in Table 1.

Consider extractions from *in situ* NPs first. The findings that extraction from *in situ* objects is relatively acceptable and that it is similarly acceptable from *in situ* unaccusative subjects are expected on all accounts. On the other hand, the fact that *in situ* transitive subjects are opaque is only predicted by CED-type approaches, which take the specifier of *v*P to be impermeable. The same fact is left unexplained by freezing-based accounts, whether they are of the generalized or the relativized kind.

Second, topicalization was not found to have either an ameliorating or a deteriorating effect on subextractions, independently of argument type. This is at odds both with accounts that assume generalized freezing and with treatments based on a generalized form of the CED. On these approaches objects and unaccusative subjects, which are transparent *in situ*, should become opaque in their fronted position. The finding is not captured by Agreement-relativized freezing based accounts either, since these do not predict fronted topics to be opaque. On these accounts, in case topics in general are taken to be permeable, subextraction is expected to be possible from topicalized transitive subjects, contrary to our results. If, on the other hand, topics are in general taken to be opaque (=Topic Opacity), then the problem is the reverse: it is unexplained why objects and unaccusative subjects are no less transparent when they are topicalized than when they are *in situ*.

While both mainstream freezing-based and CED-type accounts have difficulties in accounting for the pattern found in Hungarian, Chomsky's (2008) phase-based approach to cyclicity predicts precisely such a pattern. Recall that on that approach the lower copy of a moved element is available throughout the derivation of a given phase. Given that assumption, the fact that topicalization is not found to affect the transparence of either subject or object NPs is entirely expected. As for transitive subjects, even though the copy of the subject in Spec,vP remains available even after topicalization, that copy is opaque due to Chomsky's relativized, phase-based incarnation of the CED that makes the internals of phrases in phase edges inaccessible. Similarly, precisely because the base copies remain available, the permeability of the non-phase-edge base copies of objects and unaccusative subjects is unaffected by their participation in a topicalization chain.[22]

Note that this account necessarily relies on the assumption that the copy of the argument NP in the topic position is opaque. Otherwise, if the copy of subjects and objects in the topic position were taken to be transparent, that would obliterate any differences in opacity among topicalized NPs. The assumption of the opacity of the copy in the topic position entails, correctly, that in derivations in which topicalization takes place, all and only those *wh*-subextractions are permitted that are licensed to apply to the base copy in the topicalization chain. Recall that Topic Opacity is conceptualized as

[22] On Chomsky's (2008) account, in the case of objects the first step of *wh*-subextraction precedes topicalization. In particular, the internal argument NP and the *wh*-element contained in it are moved separately to the edge of the *v*P phase. From here the subextracted *wh*-element and the 'remnant' topical NP move on separately.

an information structural interface constraint (see section 2). What is important here is that, granting Chomsky's phase-based cyclicity, in view of our results this restriction should apply narrowly to copies of phrases in the topic position. Since topicalized phrases are *interpreted* as aboutness topics in their fronted, topic position, rather than in their base position, information structural topic opacity restrictions can be formulated narrowly in terms of the copy in the topic position, as required.[23]

If Topic Opacity restricts subextractions only from those NP occurrences that are in the topic position, then Chomsky's phase-based cyclicity has two direct consequences for topicalization. One of them has just been discussed: any subextraction from a topicalized NP may be possible only if it is licensed to apply to a lower copy of the NP. As we have seen, this prediction is borne out by subextractions in Hungarian. Another consequence is that long *wh*-subextraction from topics involves movement of an element not from within, but rather, across the topic in the left periphery of the lower clause. This gives rise to the prediction that in languages in which a left peripheral topic gives rise to a topic island effect (by turning the containing clause into an island), such subextractions will effectively constitute topic island violations. In languages like English (Rochemont 1989, Culicover 1991, 1996: 453) and German (Müller and Sternefeld 1993: 485), fronted topics are known to induce topic island effects.

(12) a. *Which books did Lee say that to Robin she will give? (Culicover 1991: 7)
b. **Was glaubst du gestern hat Ede repariert?*
what think.2sg you yesterday has Ede repaired
'What do you think Ede repaired yesterday?'(Müller and Sternefeld 1993: 485)

In Hungarian, on the other hand, topics do not erect an island for crossing A-bar movements. To illustrate, there is no detectable difference in acceptability between (13a), containing a topicalized object in the embedded clause, and (13b), in which the same object is post-verbal:

(13) a. *Hova szeretnéd, hogy Marit felvegyék?*
where.to would.like.2sg that Mary.acc accept.Subj.3pl
b. *Hova szeretnéd, hogy felvegyék Marit?*
where.to would.like.2sg that accept.Subj.3pl Mary.acc
'Where would you like Mary to get accepted to?'

Base generated frame-setting topics (which can syntactically freely intermingle with fronted topics) only have a copy in the topic position. As expected, in contrast to fronted topics, they are opaque to subextraction, see (14a). As (14b) shows, oblique phrases are not generally opaque.

[23] As it is currently formulated, Criterial Freezing may seem to be paradoxical in that it applies specifically to the criterial phrase itself, while it does not freeze its contents, licensing subextraction (Rizzi 2006; see footnote 14). Chomsky's (2008) phase-based view of cyclicity in fact permits a simpler, more uniform characterization of Criterial Freezing, one that would also derive Topic Opacity: namely, the whole copy of the phrase, including its contents, get frozen in the criterial position. Subextractions should then be possible only from the non-highest links of criterial chains, if at all. Moving the same phrase to two different criterial positions could still be ruled out, as seems necessary, on the plausible assumption that phrases that satisfy criteria in discourse-related positions must be interpreted in their criterial position (only their proper parts can undergo reconstruction).

(14) a. **Melyik politikussal szeretnéd, hogy egy interjúban a jövő*
Which politician.with would.like.2sg that an interview.in the future
reménytelinek tűnjön?
hopeful.dat seem.Subj
'With which politician would you like the future to seem hopeful in an interview?'

b. *Melyik politikussal szeretnéd, hogy bízzak egy interjúban?*
which politician.with would.like.2sg that hope.Subj.1sg an interview.in
'With which politician would you like me to hope for an interview?'

In brief, assuming phase-based cyclicity, the apparent opacity of topics in English and German stem from the fact that in these languages a left-peripheral topic creates a topic-island for crossing movement dependencies. On the other hand, as in Hungarian left-peripheral topics do not give rise to topic-island effects, in this language subextraction from (internal argument) topic-fronted phrases is licensed.[24]

We conclude our discussion with a brief comparison of our findings with recent experimental studies of subject islands in other languages. The relative transparence of unaccusative (or more generally, internal argument) subjects as compared to transitive (or more generally, external argument) subjects that we found in Hungarian has been recurrently noted in the theoretical literature (e.g., den Besten 1985, Cinque 1990, note 9, Haegeman et al.).[25] In fact, as Fanselow (2001) points out for German and as Chaves and Dery (2014) do for English, reported violations of 'subject islands' typically involve internal argument subjects (e.g., Kluender 1998: 268, Hofmeister and Sag 2010: 370). However, no systematic experimental investigation of the potential difference in permeability between unaccusative and transitive subjects was forthcoming until relatively recently.[26]

Here we highlight three acceptability rating studies relevant to the difference between external and internal argument subjects and movement, which have produced partially converging results in different languages. Investigating *was-für* split subextraction in German, Jurka (2013) demonstrates that extraction from *in situ* transitive subjects is significantly more degraded than from *in situ* unaccusative subjects, which are no different from *in situ* objects (Experiment 2); and unergative subjects are more opaque than unaccusative subjects (Experiment 3). The detected differences are relatively small compared to the differences we have found in the Hungarian data, they are nevertheless suggestive.

Polinsky et al. (2013) carried out rating studies in English and Russian. In English, using *wh*-extractions with preposition stranding, they found unaccusative

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[24] A further prediction is made for topic Left Dislocation (LD) in Hungarian. As LD gives rise to a topic island effect (i), it is expected that subextraction from left dislocated NPs will be degraded. The prediction is borne out (ii).

(i) ?? *Melyik egyetemre$_i$ szeretnéd, hogy [Marit] azt felvegyék __$_i$?*
which university.to would.like.2sg that Mary.acc DEM.acc accept.Subj.3pl
'Which university would you like Mary to get accepted to?'

(ii) ?? *Melyik politikussal$_i$ szeretnéd, hogy [egy régi interjút __$_i$] azt ne közöljenek le?*
which politician.with would.like.2sg that an old interview DEM.acc not publish.Subj.3pl PRT
'With which politician would you like them not to publish an old interview?'

[25] One of the earliest licit examples of subextraction from an internal argument subject is noted by Ross (1967: 242):

(i) Of which cars were the hoods damaged by the explosion?

[26] Attempting a different comparison, namely that of unaccusative subjects and adjuncts, Hiramatsu (1999, 2000) found subextractions from unaccusative subjects to be relatively transparent in English.

subjects to be marginally better than unergative subjects.[27] In Russian, the NPs from which subextractions are launched were either post-verbal or they were in a pre-verbal topic position. Unaccusative subjects and objects were rated significantly better than transitive subjects in both positions. The difference between the two types of subjects is large both post-verbally and pre-verbally.[28] As compared to their post-verbal position, fronting moderately improves extractions from transitive subjects, albeit without changing their basic opacity. On the other hand, fronting moderately degrades extractions from objects, as a result of which Polinsky et al. categorize pre-verbal objects as opaque. This categorization, however, seems somewhat arbitrary, both in light of the fact that the mean acceptability of objects is only slightly affected by fronting (a change of less then 0.2 in terms of z-scores) and because pre-verbal unergative subjects, whose mean acceptability is virtually identical to that of objects, are categorized as transparent. If, given the judgment results, post-verbal objects are considered as transparent, then it seems more realistic to categorize pre-verbal objects in the same way. This assessment converges with our data from Hungarian, showing that the topicalization of the object does not affect its transparence.

The data from German and Russian converge with our findings in Hungarian pointing to the opacity of the transitive subject in its in situ position, as opposed to the relative transparence of unaccusative subjects and objects. The judgment pattern in Russian comes especially close to our results in terms of size of the differences found,. Two differences between Russian and Hungarian are worth mentioning, however, that appear to make Hungarian a better test case for the relative opacity of subjects than Russian. First, Russian is characterized by a clause-final information focus. As a result, since the neutral word order is SVO (where S is an external argument subject, and X may be and object or a locative), in the absence of context that would specify otherwise, XVS sentences are more prone than SVX sentences to an information structural construal in which the post-verbal phrase is interpreted as a focus. Second, while in Russian pre-verbal subjects are in an A-position and are not necessarily interpreted as topics, pre-verbal objects are topics and they are in an A-bar position (Slioussar 2011). Both of these are potentially confounding factors that may have entered the empirical picture obtained in Polinsky et al.'s study in subtle---though probably not critical---ways, due to the fact that the NPs in their material were neither unambiguously non-specific nor unambiguously specific. For instance, consider what the implications are if a pre-verbal object must be construed as a topic but a pre-verbal subject may or may not be. Effectively, since topics must be interpreted as specific (or referential) and specificity of an NP makes subextraction from it more difficult, a hidden variable is introduced, which may have easily led to the slight degradation exhibited by subextracions from pre-verbal objects in comparison to post-verbal ones, and correspondingly, to the lack of such an effect in the case of subjects. Hungarian is free from both of these potential blurring factors, which is arguably the reason why the Hungarian data is more symmetrical.

[27] Since no objects were included in this experiment, no comparison between unaccusative subjects and objects were made.

[28] Cca. 0.8 and 0.6 *z*, respectively. Note that the z-transformation of the raw data, collected with a 5-point Likert scale, included only the target items, excluding the fillers of the experiment.

6. Conclusions

This paper has brought empirical evidence from Hungarian to bear on the issue of the opacity of subjects to subextraction. As Hungarian permits subjects both to remain *in situ* and to be moved to a pre-verbal topic position, it offers an ideal testing-ground of the main alternative syntactic approaches. In particular, it allows one to examine the effects of two the key factors that figure prominently in current structural accounts, and their potential interaction: namely, any movements that subjects undergo in the course of the derivation, and their base position.

The results of our rating experiment suggest that the base position of subjects is a primary factor contributing to their opacity, in which fronting to the pre-verbal position plays no role. In particular, transitive subjects were found to be opaque, while unaccusative subjects were relatively transparent and behaved on a par with objects, both in situ and when fronted. These findings casts doubt on the assumption that the islandhood of subjects at large can be reduced to movement-induced freezing, whether of a generalized or of a feature-relativized variety, and they point to the need for some version of the CED that renders the Spec,*v*P position opaque. As both specificity and topicality were controlled in our study, such properties cannot be held responsible for the sizeable difference between unaccusative and transitive subjects either.

The fact that topic fronting leaves the opacity/transparence of each of the three argument types unaffected, rather than making them all opaque or all transparent, invites a model of syntactic derivation, such as Chomsky's (2008) phase-based theory of cyclicity, that does not limit syntactic operations on an element to its highest copy. On that approach the fact that topicalization exerts no effect on the opacity of NPs implies that the copy of the NPs in the topic position cannot be targeted by subextraction; only their base copy can. Showing that in languages like English and German Topic Opacity holds both of fronted and base-generated topics, and both of adjunct and specifier topics, we argued that this copy-relativized Topic Opacity effect is more likely information structural, rather than purely syntactic, in nature. The general opacity of topicalized phrases in English and German, then, must be related to an independent factor. We argued, adopting Chomky's phase-based approach to cyclicicy, that it stems from the fact that in these languages a left-peripheral topic creates a topic-island for crossing movement dependencies.

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