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Privileged Access, V2 and the *that-trace* effect

Abstract: The paper discusses the famous that-trace effect and the strategies used to circumvent it in German, English, French and Italian. While the data have been widely discussed in the literature, the paper proposes a new account of the phenomenon underlies these strategies and argues that a violation of economy in subject movement is at the core of the that-trace effect. In particular, it is argued that the that-trace effect targets subjects and not objects or adjuncts, since subjects stand out in having privileged access to the C-domain. Cases in which subjects to not give rise to that-trace effects and cases where other elements than subject do give rise to a that-trace effect, will be explained as falling out from grammatical system of anchoring arguments to the context.

Keywords: that-trace effect, high and low V2, extension of the phase edge, economy of derivation, referential anchoring, big DP-hypothesis

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1 Introduction

This paper presents a novel approach to the *that-trace* effect that is based on the insight that subjects stand out in having privileged access to the C-domain. Paradoxically, this privilege of subjects – that is visible in various effects appearing with local, that is, clause-internal movement – leads to a handicap in long distance movement. I argue that the effect is due to an economy condition operative with flexible phase edges in the C-domain. Flexible phase edges are also visible in V2-languages, which distinguish each other between low and high V2, corresponding to a low (FinP) or high (ForceP) phase edge in the C-domain.

The paper, moreover, is inspired by Pesetsky's (2017) observation that the *that-trace* effect shows itself in various different effects in a number of (related and unrelated) languages. The present paper focuses on the strategies circumventing the *that-trace* effect in the four languages that I know best: English, German, Italian and French. It will thus not provide new data. Almost all the empirical phenomena dealt with in the paper have been already widely discussed in the literature. What is novel or innovative in the paper, is the fact that a number of well-known phenomena are bound together under a common approach that throws a new light on the nature of *that-trace* effect.

It is largely unexplained why subject extraction in English should give rise to the *that-trace* effect, as is illustrated in (1ab). First, it is unclear why adjunct extraction should be 'easier' than extraction of an argument and second, it remains mysterious (at least in my opinion) why deletion of the complementizer circumvents ungrammaticality. Nevertheless, the *that-trace* effect is a robust phenomenon that appears in many languages, including Russian and Standard Arabic, as is pointed out by Pesetsky (2017). Moreover, Pesetsky (2017) shows that it is connected with a wide range of phenomena that allow the circumvention of *that*-deletion, including the French *que*/*qui*-rule, complementizer agreement in West Germanic, and (evidence for) low subjects in Italian, to name the cases most discussed in the literature. Even in English, the *that-trace* effect can be circumvented, as is also pointed out by Pesetsky (2017), if an adjunct intervenes between the complementizer and the trace, as is illustrated by the contrast between (1a) and (1c), having given rise to prosodic accounts of the effect (cf. Kandibowicz 2006, 223).

(1) a. **Who do you think that t met Mary* (*that-trace* effect)
b. *Who do you think met Mary* (deletion of the complementizer)
c. *Who do you think that in this office t is the boss* (lack of the effect)

Within the literature regarding the Government and Binding theory, accounts focused on the position from which subjects are extracted, namely [Spec,TP], as a non-lexically governed position (cf. Chomsky & Lasnik 1977). There are two newer proposals – besides Sobin (2002), discussed in Section 6 below – that tackle the *that-trace* effect within the minimalist program.

First, there is the account by Bayer and Salzmann (2013) that argues that the *that-trace* effect is not limited to subjects but pertains to the highest argument in the clause. In particular, they propose that the *that-trace* effect results from improper movement of the aboutness topic in the embedded clause. I will argue below that the *that-trace* effect pertains to the highest element that serves for anchoring the (embedded clause) in the context. Second, there is the account by Padovan, Bidese and Tomasello (2021), who argue that Nominative case assignment or the lack of it is a major factor in explaining the absence of the *that-trace* effect in Cimbrian and Bavarian. However, their account is limited to these varieties and has nothing to say, for instance, about the *that-trace* effect in English.

I will argue below that the *that-trace* effect in essence follows from an economy condition connected with the bottleneck effect in [Spec,FinP] and discuss the strategies that are available in English, German, French and Italian to circumvent the *that-trace* effect, showing that all these reduce to extending the phase edge from [Spec,FinP] to [Spec,ForceP] in the embedded clause.

2 Privileged access and restrictions on movement

I will provide two examples to show that subjects have privileged access to the C-domain, one from English and one from German. As far as the structure of the C-domain is concerned, I will follow Rizzi (1997) in assuming that various discourse heads, licensing Topics and focused constituents, occupy the area between FinP, which I analyze as constituting the lower edge of the C-domain and ForceP, constituting the higher edge of the C-domain, as is illustrated in (2).[1] Furthermore, I assume that topics above Focus are base-generated, while the topics below Focus are derived by movement (cf. Hinterhölzl 2021 for arguments). A note on the nature of Force^0 is in order: while in embedded clauses it encodes sentence type (for instance, interrogative or non-interrogative), I take it to encode illocutionary force in main clauses. But this issue is not important for the arguments in the present paper.

(2) $[_{\text{higher edge}}$ Force Topic* Focus Topic* $[_{\text{lower edge}}$ Fin [TP ....]]]

2.1 Locality conditions on movement

I assume that movement across domains is restricted by phases, following a standard assumption in the minimalist program (cf. Chomsky 2000), as stated in (3). As is illustrated in (2), the C-domain has two edges, raising the question of whether both phase edges are relevant for regulating movement into and out of the C-domain.

[1] An anonymous reviewer asks whether the account is tied to an extended C-domain, as given in (2) or would also work in a simpler system with CP-recursion (cf. Vikner et al. 2017). As far as I can see, this would be in principle feasible, aligning the lower CP with low V2 and the higher CP with high V2.

(3) Locality: XP-movement is limited from one phase domain to the adjacent phase domain by touching down in the phase edge.

I will argue below that the C-domain has only one phase edge that – based on the famous bottleneck effect in V2-languages – is identified by default with its lower edge. However, I will also argue that this single phase edge is flexible. A flexible phase edge means that the phase edge in FinP can be extended to ForceP under a specific condition to be discussed below. Moreover, I will argue that phase extension is indicated (made visible) by movement of the exponent of the lower edge head to the head of the higher edge.

In other words, I am reviving the notion of phase extension in den Dikken (2007), which he used to account for the derivation of predicate inversion and for dative alternation, that is, for movement out of the v-domain. In his work, phase extension from an inherent phase – defined in terms of predication – to a higher head is triggered by head movement (for further discussion see also Gallego 2010). In my approach phase extension is indicated / made visible by head movement but defined independently of it (see (46) in Section 5 below).

A discussion of phase-hood in the sense of Chomsky (2000), however, is in order here. I find den Dikken's (2006) notion of an (inherent) phase as a predication domain more coherent than Chomsky's (2000) definition in terms of propositional object or full functional complex. Note also that Chomsky (2000) is denying phase status to TPs, even though TPs rather than vPs can be treated as representing (temporally specified) propositions that can be evaluated in terms of truth values. In the following, I will simply assume that the TP by (temporal) predication or as a propositional object counts as an (inherent) phase. This is implied by the bottleneck effect that we will discuss in detail in Section 4.1 below.

To simplify procedures and definitions, but maintaining the impact of (3), I will propose that movement may not go beyond a phase. Movement from phase to phase is possible by touching down in phase edges that count as mixed domains by belonging to the lower as well as to the higher phase, as is defined in (4). That is, an element from the v-domain, for instance, may move into the phase edge to the T-domain and further on into the T-domain, because this edge counts as belonging both to the v-domain and to the T-domain. Extending the phase edge of the C-domain thus means that the T-domain is extended up to ForceP and that the C-domain is eliminated resulting in a phase edge between the T-domain of the embedded clause and the v-domain of the matrix clause. I will come back to this point below. This means that the nature of a phase edge is defined dynamically by its context.

(4) Version of PIC: Movement may not cross phases. Phase edges permit movement into the higher phase since they belong both to the lower and the higher phase.

2.2 Privileged access in English

That subjects have privileged access to the C-domain can be shown with pertinent differences between local wh-movement of the subject and of the object in English, as is illustrated in (5). The data in (5) has first been discussed by Koopman (1983) and then later on under the heading of vacuous movement.[2] Note that wh-movement of the subject does not trigger *do*-support, while wh-movement of the object crucially does.[3]

(5) a. *Who met Mary at the party?*
b. **Who did meet Mary at the party?* (unless *did* is focused)
c. *Who did Mary meet at the party?*
d. **Who Mary met at the party?*

I assume that wh-words have a [+focus] and a [+wh] feature, the latter licensing interrogative force. In Hinterhölzl (2024) it is argued that subjects – exceptions aside and to be discussed below – move to [Spec,FinP] for reasons of referential anchoring (see also Section 4 below). If FinP counts as the phase-edge for movement into the C-domain, the wh-subject can be moved from [Spec,FinP] first to FocusP and then to ForceP to check its focus and wh-feature without any further ado. Wh-objects in English, on the other hand, cannot reach the C-domain to check their focus and wh-feature without any additional operation. Given that the phase-edge, namely [Spec,FinP], is occupied by the subject, they require an extension of the phase-edge to ForceP, which in V2-languages, as we will see below, is indicated by movement of the finite verb to the higher head.

For cases of long wh-movement, I assume that the embedded Force-head is not endowed with a [+wh-feature], but that the local focus-head is activated. Furthermore, I propose that constituents with unchecked features in the local domain can move to the phase-edge of that domain gratuitously,[4] in order to enter into a checking relation with a higher head endowed with the respective features.

For subject extraction – with FinP counting as the phase-edge – this means that the subject is stuck in the embedded FinP. It could move to FocusP to check its focus feature, but it cannot move any further to check its [+wh] feature. In particular, it cannot move to [Spec,ForceP], since the latter does not constitute the phase edge and it cannot move directly into the v-domain of the higher clause without violating locality in (4), deriving the *that-trace* effect in (6a).

[2] One may ask whether the wh-element in (5a) cannot be taken to remain in situ. I will not go into the details of this option and will assume without discussion that wh-movement to the C-domain in (5a) does in fact take place.
[3] Also, one may ask whether T to C movement is taking place in (5ac). I assume that in both cases T to Fin movement takes place. In (5c) also Fin to Force movement takes place, indicating phase extension. This implies that phase extension is dependent on a lexical exponent, otherwise (5d) should be grammatical and (5c) should be superfluous.
[4] An anonymous reviewer asks whether this movement is motivated by some edge feature. I prefer to treat it as a movement of last resort, but nothing much hinges on this decision.

(6) a. **Who did John say that met Mary at the party?*
b. *Who did John say that Mary met at the party?*

For object extraction the problem does not arise. Already for movement into the local FocusP, wh-movement of the object requires an extension of the phase edge from FinP to ForceP, hence the wh-object can move first to FocusP and then gratuitously into ForceP and since the latter counts as the overlapping area of two adjacent phase domain, namely the matrix v-domain and the embedded T-domain, it can move on into the v-domain in the matrix clause, accounting for the grammaticality of (6b).

In a nutshell the idea is simply this: subjects are privileged in that they can move into the C-domain in a more economic way than objects do. Wh-subjects can thus reach ForceP to check the interrogative force in main clauses without requiring a further operation of extending the phase domain. Wh-objects, and crucially also wh-adjuncts (not discussed in this paper), can do so only in a less economic way, requiring the extension of the phase domain to ForceP. For wh-subjects, however, we note that local economy leads to a problem when it comes to long distance movement.

How can this economy-induced problem with long distance movement of subjects be resolved? Note that the subject can be legally extracted from the embedded clause in its position in [Spec,FinP], if the entire C-domain is truncated, as is illustrated in (7a).

(7) a. $[_{\text{V-domain}}$ say $[_{\text{~~C-domain~~}}$ ~~that~~ $[_{\text{T-domain}}$ who met Mary at the party]]]
truncation phase edge
b. *Who did John say met Mary at the party*

In this case, the subject can move from the phase edge of the adjacent phase, namely the T-domain, into the v-domain in the matrix clause in one step. This 'truncation' operation necessarily deletes the complementizer in the C-domain, deriving the grammaticality of (7b).[5] But it also deletes the local Focus-head and the focus feature of the wh-subject remains unchecked in the embedded domain. But note that this generally does not lead to a problem given that also its [+wh] can remain unchecked in the embedded domain. I assume that both features are then checked in the matrix domain – with the wh-subject moving into [Spec,ForceP] to check its wh-feature and licensing interrogative force and with the insertion of an activated focus head in the matrix C-domain as an operation of last resort to check the focus feature of the lower subject. Note crucially that long wh-movement of the embedded subject triggers do-support in the matrix clause in (6b), as it does not move via [Spec,FinP] occupied by the matrix subject in the main clause.

[5] An anonymous reviewer asks how truncation actually works. One option would be that only the structure till FinP is projected or that the entire structure is first projected and structure above FinP is deleted in the course of the derivation. I prefer the first option so truncation should be understood metaphorically.

Note also that truncation of the C-domain has an effect similar to the extension of the phase edge in the C-domain to ForceP: it makes the embedded T-domain adjacent to the matrix v-domain and turns the phase edge of FinP into a mixed, lower T – higher v, phase category.

2.3 Privileged access in German

There is also evidence that the subject has privileged access to the C-domain in German. While almost any category – the subject, objects and adjuncts – can be topicalized to fulfill the strict V2-criterion of German, there is one common exception – namely, unstressed object pronouns – in difference to unstressed subject pronouns, which cannot occupy the clause-initial position, as is illustrated in (8). Object pronouns need to be stressed differently to subject pronouns and constitute either a focus constituent, as in (8d) indicated by a falling tone, or a contrastive or shifting aboutness topic, as in (8e) indicated by a rising tone, but cannot constitute an unstressed familiar topic, as in (8c) (cf. Frascarelli & Hinterhölzl 2007 for the notions of diverse topic types).

(8) a. *Er hat gestern die Maria besucht*
He has yesterday the-ACC Maria visited
'He has visited Mary yesterday'

b. *Es regnete gestern den ganzen Tag*
It rained yesterday all day-long
'It rained all day long yesterday'

c. **Sie hat der Nachbar gestern besucht*
Her has the-NOM neighbor yesterday visited
'The neighbor visited her yesterday'

d. *Sie (H+L) hat der Nachbar gestern besucht*
Her has the-NOM neighbor yesterday visited
'The neighbor visited HER (and not somebody else) yesterday'

e. *Sie (L+H) hat der Nachbar gestern besucht*
Her has the-NOM neighbor yesterday visited
'As for her, the neighbor visited her yesterday'

We noted in the previous section that subjects move into FinP to be referentially anchored. In general, I assume that contextual values – those pertaining to participants in the utterance situation (speaker and hearer) and those pertaining to discourse referents in the common ground – become accessible in FinP. All referential expressions, subjects and objects alike will thus enter into an Agree relation[6] with Fin^0 (for being assigned a referential value from the context and being licensed as familiar topics), but only the subject moves to [Spec,FinP] given that it normally constitutes the highest argument. Exceptions exist, if either the subject is not the highest argument (for example with certain psych-verbs) or if the subject is indefinite, as we will see below.

[6] The Agree relation is in terms of phi-features such that the most salient discourse referent with these phi-features is selected.

Let us assume (for the time being) that the V2 property is fulfilled by attracting the closest constituent to [Spec,ForceP], then if the speaker wants to utter a sentence with a familiar topic, they can use the subject as a clause-initial constituent but not the object. To take precedence over the subject, the object must take on a particular discourse role, either as a focus or as a special topic (a shifting aboutness topic or a contrastive topic). In this case, object movement into a specific position in the C-domain will trigger an extension of the phase edge to ForceP. Again, we see that subjects have a privileged access to the C-domain as opposed to objects, which does not come as a surprise, if we are right in treating privileged access as an economy effect.

There are cases where weak unstressed object pronouns can occupy the clause initial position,[7] as noted among others by Meinunger (2007). (9a) shows such an example that is due to Haider (2005). But what is crucial is that (9a) is possible as the subject is not referential, allowing the object to take precedence over the subject in entering in an Agree relation with Fin^0. As is illustrated in (9bc), as soon as a referential subject enters the game, the subject has to take precedence over the object. In other words, the data by Haider (2005) confirm the account of the observations in (8) in terms of referential anchoring of the arguments of the verb.

(9) *Dieses Schild können Sie genauso gut weglassen.*
This traffic sign can you as well remove.
a. *Es hat ohnehin keiner beachtet.*
It has anyway nobody noted.
b. *??Es hat er ohnehin nicht beachtet*
It has he anyway not noted
c. *Er hat es ohnehin nicht beachtet*
He has it anyway not noted

Now, wh-elements are treated as indefinites in traditional grammars. Thus, it is important to point out here that there is evidence that wh-elements have the extended structure of definite DPs. In Section 4.2 below, I will argue that definite DPs license an extra layer that hosts correlate elements that serve for referential anchoring, differently to indefinite ones. In Cimbrian, these correlate elements comprise adnominal *da* (here) and clitics. Wh-elements in Cimbrian can appear with adnominal *da* (cf. Cognola and Hinterhölzl 2020) and can be clitic-doubled in Spanish and Romanian (cf. Suner 1988), indicating an extended structure in their functional layer. Thus, wh-elements, like strong quantifiers, presuppose that a specific set of individuals is either discourse-given or uniquely identifiable in the reference situation. This interpretation of wh-elements is also supported by the fact that wh-subjects have privileged access to the C-domain in English, as shown in the previous section.

[7] I thank an anonymous reviewer for pointing these observations out to me.

2.4 Is there a *that-trace* effect in German?

The observation about privileged access of subjects in German is important, since there is a longstanding discussion of whether the *that-trace* effect exists in German. An experimental study by Featherstone (2005) shows that speakers of standard German are sensitive to the *that-trace* effect. In fact, it is well-known that north-German speakers do not like subject and object extraction from a *that*-clause, but use an embedded V2-structure instead, as is illustrated in (10).

(10) a. Wen sagte Hans [$_{\text{ForceP}}$ t hat [$_{\text{FinP}}$ der Nachbar [$_{\text{TP}}$ gestern t eingeladen]]]
Whom said John has the-NOM neighbor yesterday invited
'Who did John say that the neighbor has invited yesterday'

b. Wer sagte Hans [$_{\text{ForceP}}$ t hat [$_{\text{FinP}}$ t [$_{\text{TP}}$ gestern den Nachbarn eingeladen]]]
Who said John has yesterday the-ACC neighbor invited
'Who did John say has invited the neighbor yesterday'

According to our assumptions, V2 in (10) indicates that the phase-edge was extended from FinP to ForceP. The data in (10) are reminiscent of the strategy employed in Belfast English reported by Henry (1995) and discussed in Pesetsky & Torrego (2001), where object extraction makes use of an embedded V2 structure (11a). Differently from German, however, subject extraction in Belfast English does not make use of the same strategy, as is illustrated by the contrast between (11b) and (11c).

(11) a. *What did Mary claim* [t *did they steal* t] (Belfast English, Henry 1995, p. 128)
b. *Who do you think (*that) left*
c. **Who do you think did go to school* (Henry, p.c. to Pesetsky & Torrego)

In our approach, we can account for the data in (11) by noting that object extraction in Belfast English arguably makes use of phase-extension, but subject extraction makes the expected use of truncation. Note that in the present account, truncation and phase extension have the same effect: the phase edge between the embedded T-domain and the embedded C-domain turns into the phase edge between the embedded T-domain and the matrix v-domain, since phase extension extends the embedded T-domain up to the last head of the original C-domain, that is, Force^0.

The unexpected case so far is subject extraction in Standard German. If economy of subject movement into the C-domain also holds in Standard German, then the latter should also use the strategy of truncating the C-domain. I will argue in the following section that the German pattern in (10) follows from the fact that the phase-edge is regularly extended even for local movement of the subject via movement of the finite verb to ForceP due to the operation of a prosodic condition in the German C-domain that bleeds local economy (cf. the Prosodic Edge Condition in Section 3 below).

Let us now address the question of why the *that-trace* effect is disputed in German. The main reason is that South-German speakers, including myself, do not feel any difference between subject extraction and object extraction from a *that*-clause, as is illustrated in (12). Since the pre-eminent German linguists in the 1980s and 1990s were speakers of the dialect area of the South (Bavarian), like Haider, Bayer and Grewendorf, German was classified, on a par with Italian, as a language that is not subject to the *that-trace* effect.

(12) a. Wen sagte der Hans [$_{CP}$ dass [$_{IP}$ der Nachbar t eingeladen hat]]?
Whom said Hans that the-NOM neighbor invited has
'Who did John say that the neighbor has invited'

b. Wer sagte der Hans [$_{CP}$ dass t [$_{IP}$ t den Nachbarn eingeladen hat]]?
Who said Hans that the-ACC neighbor invited has
'Who did John say did invite the neighbor'

South German dialects differ from Standard German in that they trigger complementizer agreement, which is not visible in (12), but I will argue below that the presence of complementizer agreement can indicate that ForceP constitutes the phase edge of the embedded clause. We will come back to this issue when we discuss the French *que/qui*-rule and complementizer agreement in Sections 4 and 5 below.

The following section discusses which position the finite verb can be assumed to occupy in the extended C-domain. In principle, it could be any head-position in the left periphery. But I will assume that only two positions are eligible for the finite verb: Fin^0 and Force^0. The former is generally referred to as low V2 and the latter as high V2.

3 High and low V2

In this section, I will address the question of how to characterize V2 in the extended C-domain following Rizzi (1997). First of all, we have to distinguish strict linear V2 from systems where the finite verb moves into some functional head in the C-domain without strictly obeying the linear V2 rule.

Older Germanic languages, like OHG and OE, fail to respect a strict linear V2 constraint, since they allow for V1, V2 and V3 order in declarative clauses (cf. Hinterhölzl & Petrova 2010, Walkden 2015 for extensive discussion of this issue). While the V1-pattern in declarative clauses disappeared – apart from special usages in particular genres like jokes – in modern German, there are modern Germanic varieties that still exhibit V3-orders in declarative main clauses, most notably in West Flemish and in Kiezdeutsch (see below).

As is noted in Haegeman and Greco (2017), temporal adverbials in West Flemish, in difference to Standard Dutch, give rise to a V2 or a V3 pattern (cf. (13) below), with the crucial difference

that the V3 pattern does not allow for a reconstructed reading, implying that these adverbials are to be analysed as base-generated (high) topics. These adverbials are generally referred to as frame adverbials and comprise next to temporal adverbials also locative ones.

(13) a. *Oan-k toekwamen vielt den eletriek ut.*
when-1.SG arrived fell the electricity out

b. *Oan-k toekwamen, den eletriek viel ut.*
when-1.SG arrived, the electricity fell out
'When I arrived there was a power failure.'

In Dutch, a similar structure gives rise to a subject / non-subject asymmetry, as in (14) taken from Haegeman and Greco (2017): V3 order is possible with an initial object pronoun, but not with an initial subject pronoun. For a more extensive discussion of the contrasts between West Flemish and Dutch see Greco and Haegeman (2023).

(14) a. *Als er morgen een probleem is, mij moet je niet bellen.*
If there tomorrow a problem is, me must you not call
'If there is a problem tomorrow, don't call ME!'

b. **Als er morgen een probleem is, je moet mij niet bellen.*
If there tomorrow a problem is, you must me not call
'If there is a problem tomorrow, you don't have to call me!'

However, no such contrast appears with truly clause external adjuncts, that is, ones that modify the entire speech act, which arguably can be analysed as modifying ForceP, as in the German examples in (15ab). Here, a weak unstressed subject pronoun does not give rise to a marked status of the sentence. Standard German shows the same distinction as Dutch does, as illustrated in (16). As the contrast between (16b) and (16c) shows, the restriction does not apply to subjects in general, but only to weak unstressed subjects.

(15) a. *Wenn ihr Durst habt, es steht Bier im Kühlschrank*
If you thirst have it stands beer in-the fridge

b. *wenn es morgen ein Problem gibt, wen soll ich kontaktieren?*
if it tomorrow a problem exists, whom should I contact?
'Whom should I contact if there happens to be a problem tomorrow?'

(16) a. *wenn es morgen ein Problem gibt, MICH brauchst du nicht anzurufen*
if it tomorrow a problem exists, ME need you not call up
'You need not call me, if there should be a problem tomorrow'

b. **wenn es morgen ein Problem gibt, ich ruf dich an*
if it tomorrow a problem exists, I call you up
'If there is a problem tomorrow, I shall call you'

c. *wenn es morgen ein Problem gibt, PETER kann dir helfen*
if it tomorrow a problem exists, PETER can you help
'If there should be a problem tomorrow, Peter can help you'

Haegeman & Greco (2017) assume that all frame adverbials are base-generated outside of the clause and propose that there is a linking problem in (13b). I would like to propose that frame adverbials can attach both clause-internally and clause-externally, with the smaller structure being preferred for reasons of economy. Note that various authors that point out the occurrence of V3-structures in Older German (cf. Speyer 2008 for NHG and Petrova 2012 for Middle Low German) propose the structure in (17). Note, in particular, that they locate frame adverbials in the zone where base-generated topics are arguably licensed.

(17) [ForceP [FrameP [FocP [TopP [FinP [VP/IP …]]]]]] (Speyer 2008)

Furthermore, V3-structures appear in Kiezdeutsch, as is illustrated in (18) (cf. Wiese 2012, Sluckin 2025 for a more extensive discussion), raising the question how this variety differs from modern standard German. This is a tricky issue, since speakers of Kiezdeutsch do not make V2-'errors' with wh-movement or fronting of objects. Thus, they seem to have the German V2-system in place. I will thus argue below that their V2-system is akin to the standard German V2-system but that they fail to apply the prosodic condition in (20) below. Viewed in this way, V3-orders are direct indicators of a low V2-system and of the economy condition we argued for above.[8]

(18) *Heute ich geh Aldi* (Wiese 2012)
today I go Aldi (a type of supermarket)
'Today I will go to Aldi'

One option to explain the contrast between German and Dutch, on the one hand, and West Flemish (and Kiezdeutsch), on the other hand, would be to assume that while West Flemish allows for low V2, German and Dutch allow only for high V2. Note, however, that this assumption would leave us without an explanation for the occurrence of the *that-trace* effect in Standard German (and Standard Dutch). The proposal that I would like to make is the following: German allows for low V2 as well, but the prosodic condition in (20) triggers the extension of the phase edge to ForceP also with subject movement into the C-domain.[9]

In particular, I propose the following analysis for the contrast between a V2-structure and a V3-structure: If the verb raises to Force^0, a V2 structure will result and if the verb remains in Fin^0, a V3 structure can result (if a base-generated frame adverbial is present). This is illustrated in (21) below. Movement of the finite verb to Force^0 must then be taken to be triggered by weak subjects in Modern German and Modern Dutch, but is unnecessary in West Flemish, Kiezdeutsch and in various historical stages of German.

[8] There is one interesting issue: West Flemish speakers and speakers of Kiezdeutsch are not reported to produce V3 structures with subject questions. I will leave this issue for future research.

[9] I am following here an approach in which syntactic structure and prosodic structure are derived in a parallel and phase-based fashion (cf. Hinterhölzl 2019).

How can this be achieved? It is necessary to divide up the V2 properties in essentially two components: a syntactic part and an optional prosodic part. The syntactic part itself consists of two components, namely a requirement that Tense (pied-piping the finite verb) moves into the C-domain, and a constraint that limits the number of constituents that can be remerged in the C-domain to one (without requiring that at least one constituent be remerged in the C-domain). These conditions are summarized in (19).

(19) Compositional approach to V2:
   a) Tense moves to Fin^0 for licensing reasons, namely to be assigned values for the utterance situation and the reference situation
   b) The syntactic part of the V2 constraint is compatible with V1, V2 and V>2
   c) Strict linear V2 is enforced by the presence of a prosodic condition.

The basic idea is that Tense must enter in an Agree relation with Fin^0 to be assigned values for its two arguments, the utterance situation and the reference situation. I am following here the situation-based approach to Tense which assumes that Tense does not simply relate points in time or intervals, but expresses a relation between two situations (cf. Hinterhölzl 2024). This Agree relation can be expressed via head movement of T to Fin. I assume that this operation is universal, with V2 (meaning the finite verb appearing in the C-domain) resulting from the spell-out of the finite verb (or of the finite auxiliary) in the higher position.

Secondly, I propose that the famous bottleneck effect (cf. Haegeman 1996, Roberts 2004, Madaro, Tomaselli & Bidese 2025) can be reduced to the phase condition, assuming that (minimally) FinP counts as the phase-edge of the C-domain, thereby restricting movement from TP / IP to the C-domain to maximally one constituent. Finally, the prosodic part of the complex condition can be defined as given in (20). The condition in (20) re-enforces the phase edge nature of FinP. Phases are either typically used to locally constrain movement (as in den Dikken 2007) or to map spell-out domains onto prosodic constituents (as in Kratzer & Selkirk 2007). In this account, the phase edge in FinP serves both purposes: restricting movement and restricting spell-out options.

(20) Prosodic Edge Condition (PEC):
The finite verb must occupy a left-peripheral position in its prosodic phrase in the phase edge

With these conditions in place let us now come back to the issue of why V3 orders with base-generated topics do not appear in Standard German. (21ab) provide the essential syntactic structure of the sentence in (16b) above, while (22ab) indicate the relevant prosodic constituents in round brackets. Note in particular that (22a) violates the prosodic condition in (20): since arguments form a joint phonological phrase with the verb (cf. Gussenhoven 1992), the verb does not occupy a left-peripheral position in the phonological phrase containing it in the phase edge, when FinP counts as the phase edge of the clause

(21) a. [$_{\text{ForceP}}$ wenn es ein Problem gibt, [$_{\text{FinP}}$ ich ruf [$_{\text{TP}}$ dich an]]]
b. [$_{\text{ForceP}}$ wenn es ein Problem gibt, ruf [$_{\text{FinP}}$ ich [$_{\text{TP}}$ dich an]]

(22) a. [$_{\text{ForceP}}$ (Frame) [$_{\text{FinP}}$ ((Subj) V$_{\text{fin}}$).....]]
b. [$_{\text{ForceP}}$ (Frame) (V$_{\text{fin}}$ [$_{\text{FinP}}$ Subj) t]

What is the solution? The verb is raised to ForceP and the phase edge is extended to this phrase. As is illustrated in (22b), no violation of the prosodic edge condition in (20) arises here, since adjuncts and topics, familiar, shifting and contrastive Topics alike, are mapped onto a separate phonological phrase. This also holds for weak unstressed subjects: by moving on into the C-domain, they take on the role of either a familiar, contrastive or continuing aboutness topic and are thus phrased in a separate phonological phrase.

What are the implications of this account of the V2-phenomenon for the *that-trace* effect? We conclude that the phase edge is low in German, but is regularly extended to ForceP for objects and subjects alike (due to the presence of the prosodic requirement). We may thus assume that truncation of the C-domain is not an option in Standard German, hence a speaker of Standard German must use embedded V2-structures for the extraction of subjects and objects. What about southern German (Bavarian) dialects that generally accept subject extraction from a *that*-clause? This question will be addressed in the following section.

4 Subjects and complementizer agreement

In this section, I will prepare the grounds for the argument of why the *that-trace* effect does not appear in Southern German dialects,[10] which are dialects showing complementizer agreement and in general for the observation that the *that-trace* effect is bleeded, when the subject remains in a lower position. The core idea that I will pursue in the following sections is that if there is another element that undergoes movement to [Spec,FinP] instead of the subject, this will lead to the effect that subsequent movement of the subject, like movement of the object into the C-domain triggers the extension of the phase edge in the embedded clause to [ForceP].

[10] An anonymous reviewer pointed out that the systems of CA in Bavarian (much stronger) and in Alemennic dialects (less strongly realized) are not equal. An additional issue arises with South German standard speakers that do not use CA but nevertheless do not show *that-trace* effects. I would like to point out that a speaker even if not using CA to sound more like a speaker of standard German (second issue) or using a system with scarce evidence for CA (first issue) still has in place the (dialect) grammar in which the complementizer sits in the extended phase edge (as is required by the presence of CA). It is ultimately an empirical issue of what is going on when speakers speak two varieties. I am assuming that grammar change does not directly follow a change in language use. There could be an intermediate stage where the speaker assumes the presence of *pro* (note the pronominal origin of CA) before CA is taken to be lost altogether. But this question, important though it is, goes beyond the scope of this paper.

We will start out with discussing the interaction between wh-movement and subject licensing in Cimbrian, which will also provide us with an important clue for the correct analysis of complementizer agreement (CA) in Germanic. In particular, in this section I am re-assuming the data and arguments presented in Hinterhölzl (2024) to show that (referential) DPs are not interpreted by an assignment function in semantics but are licensed by entering into an Agree relation with a functional head in the C-domain. Furthermore, it is argued there that complementizer agreement is part of this licensing system. Thus, I will review here the most important data and arguments for this approach (for further details, the reader is referred to Hinterhölzl 2024).

4.1 Subjects and wh-movement in Cimbrian

In Cimbrian, as is illustrated in (23), there is a complementary distribution between preverbal subjects and the presence of a subject pronoun, or *da* ('here, there'), both of which are cliticized on to the verb (where *da* is spelled out as *-ta*). There is a large literature on the role of *da* in Cimbrian that I cannot do justice to in this paper.[11]

(23) a. *Bas *hat/hatta/hattar gekhoaft dar Luca in bottega*
what has/has-*da*/has-3.SG bought the Luca in shop
'What did Luca buy in the shop?'

b. *Dar Luca hat/*hatta/*hattar gekhoaft in liber in bottega*
Luca has/has-*da*/has-3.SG bought a book in shop
'Luca bought a book in the shop'

I will follow Cognola & Hinterhölzl (2020) in assuming that the pattern in (23) is due to referential anchoring of the subject. In particular, I propose that movement of a wh-element into the preverbal domain in (23) interferes with the licensing of subjects and that the presence of a low subject in (23a) provides direct evidence for the presence of a bottleneck effect in [Spec,FinP]. In the present account this means that [Spec,FinP] counts as the phase edge, explaining why the subject (in FinP) that arguably occupies an A-position can and does interfere with an operation of A'-movement.[12]

In other words, the wh-phrase *bas* in (23a) has to pass through [Spec,FinP] to reach [Spec,ForceP] to license the speech act of a question. Subjects in this case can be licensed in a lower position when they are doubled by *da* or by a subject clitic pronoun, as follows: if doubled by *da,* the subject is focused (new information or a contrastive focus), and if doubled by a pronoun, the

[11] The interested reader is referred to Bidese and Tomaselli (2005) and subsequent work; Kolmer (2005); Grewendorf and Poletto (2015) and Cognola and Hinterhölzl (2020).

[12] An anonymous reviewer pointed out that the C-domain is generally considered to be the target of A'-movement. Note, however, that in FinP we are dealing with a position in which (only) arguments are contextually valued.

subject is a topic. The idea that I would like to develop in the following section is that clitics and *da*, by undergoing head movement to Fin^0, serve to license the subject when the latter is unable to undergo movement to [Spec,FinP].[13]

4.2 The role of clitic pronouns and *da* in referential anchoring of arguments

In this section, I will argue that clitics and *da* serve to referentially anchor a subject in the context. In particular, I propose that definite DPs, in contradistinction to indefinite DPs, have an extra layer with an additional functional head that licenses a correlate DP in its specifier, as is illustrated in (24). Indefinite and weak (quantificational) DPs lack the respective layer and, thus must combine with an adverbial alternative anchor, as it occurs in the English existential *there* construction. I follow here a version of the Big DP-analysis of clitic doubling (cf. Torrego 1995, Uriagereka 1995), as in Cardinaletti (2019), in which the clitic does not constitute the head of an extended DP but is introduced in the specifier of a head external to DP. The evidence for this revised structure comes from participial agreement in Italian, which shows that clitics undergo XP-movement before they undergo head movement to their phonological host. In Cardinaletti's analysis, the head external to DP is K (for Case Phrase), but in view of the arguments of this paper, I propose that it is a referential head that guarantees co-evaluation between the associate and the DP. In particular, I propose that the DP-layer in (24) constitutes an island for extraction to explain why constituents internal to DP are subject to the Left Branch Condition, while the highest Specifier in the structure in (24) is not.[14]

(24) $[_{\text{RefP}}\ [_{\text{DP}}$ da/cl] Ref [D^0 $[_{\text{NP}}$ N]]]

Referential subjects can always anchor a predicate and obtain access to the value of their discourse antecedent, if they move into a pre-finite position, that is, into [Spec,FinP] in Cimbrian, as illustrated in (25). Furthermore, I propose that if a referential DP is moved into [Spec, FinP], no correlate is generated in [Spec,RefP] for reasons of economy, explaining the ungrammaticality of (25b).

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[13] An anonymous reviewer pointed out that extraction of the correlate constitutes a violation of the Left Branch Condition. I like to point out that some cases of extraction from a left branch are allowed, as is indicated in (i). I will leave this issue for further research.

(i) a. Ich habe nicht davon gehört
I have not there-of heard
b. Da habe ich nicht [t von] gehört
There have I not of heard

[14] Note that the nature of the Left Branch Condition still needs to be explained and seems to be restricted to DPs, since in general there is no problem with extracting Specifiers from VPs, vPs, TP and CPs.

(25) a. *Dar Mario hat gekhoaft in liber*
Mario has bought a book

b. **Dar Mario hatta / hattar gekhoaft in liber*
Mario has-da / has-3.SG bought a book

Why is it that only subjects interact with clitic pronouns and *da* in Cimbrian? Must it not be assumed that all referential DPs have access to Fin^0? The latter assumption is correct. As stated above, I propose that Fin^0 enters into an Agree relation with all the referential arguments contained in TP and values them, but it will only attract the referential subject since it constitutes the highest argument in the structure. Given that it is the movement of the subject into [Spec,FinP] that interferes with the wh-movement via the bottleneck effect, it is the subject that interacts with the presence/absence of clitic pronouns and *da* in Cimbrian. When a subject is non-referential (i.e., indefinite), it will remain in a lower position and the sentence will be anchored via an alternative anchor, namely the reference situation argument of tense, as a thetic judgment.

To sum up what we have found so far, referential DPs cannot be interpreted within vP without any additional operation that connects them with the C-domain (see (23a) above).

Finally, let us take note here that Cimbrian does not make use of phase extension to allow for the movement of objects in the C-domain, but uses the vacant [Spec,FinP]. This analysis is indicated by the position of subjects, when the object undergoes wh-movement into the C-domain. While in German the subject follows directly the verb that has been raised to ForceP, the subject must stay in a lower position in Cimbrian, as is illustrated in (26ab).

(26) a. **Bas hat / hatta /hattar dar Luca gekoaft?* Cimbrian
what has/has-da/has-3.SG the Luca bought

b. *Bas hatta / hattar gekoaft dar Luca?* Cimbrian
what has-da/ has-3.SG bought Luca
'What did Luca buy?'

This strategy is arguably also employed in Italian and French main clauses: low subjects then go hand in hand with low V2 and a low phase edge. As is illustrated in (27) for Italian, the subject has to stay in a lower position to permit wh-movement of the object into the C-domain.

(27) a. **Che cosa ha Gianni comprato?* Italian
What thing has Gianni bought

b. **Che cosa Gianni ha comprato?*
What thing Gianni has bought

c. *Che cosa ha comprato Gianni?*
What thing has bought Gianni
'What did Gianni buy?'

To sum up, there is a second strategy next to phase extension to allow movement of the object into the C-domain in matrix clauses: Cimbrian, Italian and French have a more economical option of referentially anchoring the subject via head movement of a clitic correlate of the subject to Fin^0. In this way, [Spec,FinP] remains available for licit movement of the object into the C-domain without inducing an extension of the phase edge. As we will see in Section 5, this strategy is not available in embedded clauses in Italian and French for lack of movement of the finite verb into the C-domain, with head movement of the verb to Fin^0 being blocked by insertion of the complementizer. We turn now to the important question of the connection between subject licensing and complementizer agreement in West Germanic.

4.3 Complementizer Agreement in West Germanic

In this section, I will argue that complementizer agreement (CA) in West Germanic shows a pattern that is very similar to the facts of subject licensing in Cimbrian, hence I will argue that the phenomenon of CA is due to referentially anchoring the subject to the context. This section is based on van Koppen's work on CA in Dutch dialects and summarizes the discussion in Hinterhölzl (2024).

van Koppen (2006, 2012) argued that there are two types of CA to be distinguished. In a type A dialect, such as the dialect Tegelen Dutch, the agreement suffix is similar to the agreement suffix on a verb and CA is insensitive to subject movement and to subject modification (by focus). In a type B dialect, such as Hellendoorn Dutch, the agreement suffix (in C^0) differs from the agreement suffix on the verb, displaying the phenomenon of double agreement (DA). Furthermore, in these dialects, the agreement suffix is of pronominal origin and CA is sensitive to subject movement and subject modification. I will illustrate the variable nature of DA that occurs in various West Germanic dialects with van Koppen's (2012) data from Hellendoorn Dutch.

It is illustrated in (28) that if a subject is moved into a preverbal position, DA (*-e*) is ruled out, while if a subject stays in a lower position, as in a yes/no question that requires V1-order, DA is necessary. (29) illustrates that if a subject is modified by a focus particle, DA is ungrammatical, and (30) shows that in the presence of a frame adverbial, DA is excluded, while (31) shows that if a focused subject is moved to a higher position and has a definite reading, as is the case for the first person pronoun *wiej,* DA is again excluded.

(28) a. *Wiej binn-t /*binn-e den besten!*
we are-1.SG / are-DA the best!

b. *Binn-e /*binn-t wiej den besten?*
Are-DA /are-1.SG we the best?
'we are the best! / are we the best?'

(29) *dat / * darr-e [zölfs wiej] de wedstrijd wint.*
that / that-DA even we the game win
'that even we can win the competition'

(30) *dat / * darr-e [op den wärmsten dag van't joar] wiej tegen oonze wil ewärkt hebt.*
that / that-DA on the warmest day of the year we against our will worked have
'that we have worked against our will on the warmest day of the year'

(31) *WIEJ denkt Jan dat / *darr-e die pries ewönnen hebt, niet ZIEJ.*
we think Jan that / that-DA that prize won have, not they
'WE John thinks won that prize, not THEM.'
(Hellendoorn Dutch, van Koppen 2012:138)

In Hinterhölzl (2024), it is argued that the similar patterns of subject licensing in Cimbrian and CA in West Germanic call for a unified account, in which the facts of CA are explained in terms of anchoring the subject to the context. In particular, it is argued that in type B dialects, a clitic correlate of the subject moves into [Spec,FinP] to referentially anchor the subject to the context. In addition, it is proposed there that in type A dialects the clitic correlate has been reanalyzed as an Agreement marker that licenses the f-features of the *pro* correlate of the subject. These assumptions then predict that the subject in dialects / languages with CA does not move into [Spec,FinP] for referential anchoring. It will remain in a lower position and is thus eligible for phase extension, as objects are. This will be discussed in more detail in the following section.

5 Lower subjects and phase extension in embedded clauses

Let us take stock of what we have seen so far and what we generally know about the *that trace-* effect in diverse languages. In the previous section, we have seen that complementizer agreement allows for the subject in embedded clauses to remain in a position lower than [Spec,FinP]. Furthermore, Rizzi (1982) has argued that the *that-trace* effect is absent in Italian, since the subject can be extracted from a lower position in that language, as is illustrated in (33) below. Rizzi's argument is based on the observation that *ne*-cliticization is not possible from the preverbal subject position, but grammatical from postverbal constituents, objects and subjects alike, as is illustrated in (32).

(32) a. *Alcune (*ne) sono cadute nel mare.*
some CL are fallen into-the sea
'some (of them) have fallen into the sea'

b. *Gianni ne ha preso alcune.*
Gianni CL has taken some
'Gianni has taken some of it'

c. *ne sono cadute alcune nel mare.*
CL are fallen some into the sea
'Some of them have fallen into the sea'

Note first that the data in (32) are reminiscent of the behavior of subjects in Cimbrian. If the subject is moved into the C-domain, it alone can referentially anchor the predication, as is illustrated in (32a). If the subject remains in a lower position, the clitic correlate is moved into the C-domain, as is illustrated in (32c).

(33) a. **Quante hai detto che _ sono cadute?*
How many have-2.SG said that are fallen
'How many did you say that have fallen?'

b. *Quante hai detto che ne sono cadute _*
how many have-2.SG said that of them are fallen
'How many of them did you say that have fallen?'

(33a) clearly shows that Italian is sensitive to the *that-trace* effect. The ungrammaticality of (33a) follows in our account, given that *quante* arguably has moved into [Spec,FinP] in the embedded clause and is stuck there, assuming that Italian does not allow for truncation.[15] I will come back to this point below.

How can we then account for the grammaticality of (33b)? Note that phase edge evacuation, as it arguably occurs in main clauses in Italian, is not an option in embedded clauses, unless it is assumed that Italian allows for truncation of the C-domain with the complementizer being inserted (and remaining) in Fin^0. Note, however, that this is not an option given that there is strong evidence that the complementizer occupies a high position in the C-domain, preceding high (base-generated) topics. In (34) this topic is constituted by the frame adverbial *ieri*.

(34) *Che cosa ha detto Gianni che ieri ha dato a Maria, Luisa?*
What has said Gianni that yesterday has given to Maria, Luisa
'What did Gianni say that Luisa has given to Maria yesterday?'

The grammaticality of (33b), however, follows in our account assuming that phase extension is allowed in embedded clauses in Italian. In particular, note that if we assume that the clitic is moved into [Spec,FinP] in (33b) in embedded clauses, we expect that sub-extraction of the subject can proceed without problems via extending the phase edge.

[15] Here the question arises of whether it is arbitrary whether a language applies phase extension or truncation of the C-domain. This has to remain subject to further empirical work. For the time being, I note that languages that allow for low subjects (even if only in thetic judgments) use phase extension. If a subject is high in a language, as in English, extension is only possible for subextraction of the object, but not for the subject, rendering truncation of the C-domain as an operation of last resort.

In this respect, note first that sub-extraction of objects in Italian is possible with preverbal subjects, as illustrated in (35a). We have seen above that wh-movement of the object in main clauses requires a low (post-verbal) subject and does not make use of phase extension (due to the more economical option of phase edge evacuation via head movement of a clitic). The latter process obviously does not occur in embedded clauses in Italian. Thus, I propose the following solution: the complementizer in languages with low V2 is inserted in Fin^0 with the finite verb remaining in Tense. This implies that the correlate of the subject cannot reach FinP via movement of the finite verb to Fin^0, where the finite verb pied-pipes the relevant clitic. I therefore propose that the clitic correlate of the subject undergoes XP-movement to [Spec,FinP] creating the condition for triggering phase extension.

As in cases of V2, phase extension can then be indicated by movement of the complementizer from FinP to ForceP, as illustrated in (35b). Note, in particular, that phase extension and complementizer movement are necessary to bring the clitic in a valid licensing relation with its verbal host, for which I propose the following condition: clitic and verbal host need to be adjacent (and occupy the same phasal domain) to allow for the clitic to be phrased as part of the phonological word of the verb. Thus, the complementizer has to be moved into the higher phase edge.

(35) a. *Chi pensi che i linguisti hanno incontrato _?*
Who think-2.SG that the linguists have encountered
b. Quante hai detto [$_{ForceP}$ ~~quante~~ che [$_{FinP}$ ne ~~che~~ [$_{TP}$ sono cadute [~~ne [quante~~]]]]

Since standard Italian does not use subject clitics (36a), it is important for the present account to show for North Italian dialects that do have subject clitics, like Paduan, that a subject clitic is present and necessary with subject sub-extraction, as is illustrated in (36b).

(36) a. *Chi dice Gianni che ha visto Maria?* (Standard Italian)
Who says Gianni that has seen Maria
b. *Chi ze che dize Gianni ch'el gabia visto Maria?*
who is that says Gianni che-CL has seen Maria
(Paduan, p.c., Guglielmo Cinque)
'Who did Gianni say saw Maria'

Let us now move to the data that are known for French. French, differently from Italian, is taken to observe the *that-trace* effect, but differently also from English, it does not resort to truncation of the C-domain, but observes a variation of the complementizer that can be interpretated as displaying complementizer agreement, as illustrated in (37). Note, in particular, that French in contradistinction to Italian does not allow for postverbal definite subjects. Thus, I assume that the element showing up as a type of complementizer agreement in French is not an adnominal element as *da* in Cimbrian.

(37) a. **Qui a-t-il dit que _ voulait voir Marie?*
Who has-he said that wanted see Marie

b. *Qui a-t-il dit qui _ voulait voir Marie?*
Who has-he said that wanted see Marie
'Who did he say wanted to see Marie?'

Thus, I propose that *qui* is to be analysed as que+y, with *y* being the locative clitic, similar to *there* in English, rather than *da* in Cimbrian (cf. Taraldsen 1978 for proposing that *qui* should be analysed as *que+il*). I propose that *y* is inserted in [Spec,TP] and moved into [Spec,FinP] to referentially anchor the embedded clause as a thetic judgement (cf. Hinterhölzl 2019), allowing the wh-subject to remain in a lower position in the clause. The complementizer *que,* like in Italian, is thus taken to be inserted first in Fin^0 and then to be moved to Force^0 to indicate the extension of the phase edge, where the clitic is joined with the complementizer via local head movement, as illustrated in (38).

(38) Qui a-t-il dit [ForceP ~~Qui~~ que+y [FinP ~~y que~~ [TP ~~y~~ [AspP ~~Qui~~ voulait voir Marie]]]]?

These considerations bring us now to the difference of the *that-trace* effect in Standard German and Southern German. Southern German dialects, both Bavarian and Alemannic, do display CA. I propose that even when CA is not visible in cases like (39), the presence of CA in the variety indicates to native speakers that the complementizer in (39) occupies Force^0, testifying a high phase edge. In other words, I assume that a south German speaker when he drops CA to sound like a speaker of standard German, still has in place the dialect grammar, in which the complementizer sits in the extended phase edge. Native speakers of Standard German in our account must then be assumed to analyze the complementizer as occupying the lower phase edge, necessitating embedded V2-clauses for subject and object extraction.

(39) *Wer sagte Hans dass _ den Peter angerufen hat?* (Upper Austrian)
Who-NOM said John that _ the-ACC Peter called-up has
'Who did Hans say has called up Peter?'

The above discussion raises the question of what counts as evidence for the native speaker for the position of the complementizer in the C-domain. One possibility would be to assume that the complementizer in languages that do not observe V2 in declarative clauses is inserted in the highest head that is activated in the C-domain. This position would be FocusP for the complementizer in English embedded clauses containing a wh-word, hence the complementizer will be deleted under truncation of the C-domain. For languages with V2 in declarative clauses, I propose – again for reasons of economy – that the complementizer is assumed to occupy the lower Fin-head, unless there is direct empirical evidence (high topics or CA) that it occupies the higher Force-head. In addition, we have to assume that in languages that allow only low V2 in matrix questions, the complementizer is inserted in the Fin-head, but is regularly moved to the

Force-head to account for the Italian and French data. Note that the phase edge must always be taken by default to be FinP, with evidence for the complementizer in [ForceP] counting as direct indication of the extension of the inherent phase edge.

The presence of CA in a variety would then count as evidence for an exceptionally high position of the complementizer in that variety. Another piece of evidence comes from the presence of frame adverbials. It was pointed out that their presence bleeds the *that-trace* effect, as is illustrated for English in (40).

(40) *Who did Peter say that in this office _ is the boss?*

Remember also from the previous section that frame adverbials bleed CA, with CA-bleeding indicating either that the subject occupies a high position in the clausal domain, namely [Spec,FinP], or that there is an alternative (silent) anchor present in the structure. There are two options at our disposal now. A) We assume that the subject in (40) indeed occupies a high position before extraction and that it is the high position of the complementizer above the frame adverbial that indicates a high phase edge (and phase extension).[16] B) We assume that the subject in (41) occupies a low position before extraction and explain the absence of CA with the (silent) presence of another element that moves into [Spec,FinP] for referential anchoring instead of the subject. I will pursue option B) here, since it also allows for a more restrictive account of extending the phase edge.

Note first that frame adverbials serve to shift the reference situation to a new evaluation situation and are thus similar to shifting aboutness topics in the domain of individuals. This could indicate that the sentence is about a situation and that the reference situation argument of Tense, syntactically realized as *pro*, takes precedence over the subject in moving into FinP to enter into a local relationship with FrameP. In this case the subject would either be interpreted as weak definite (the unique set of people in this office in (40)) or be valued by Fin^0 without being subject to movement to FinP.

If this analysis of (40) is on the right track, we can assume that the extension of the phase edge is only possible (as a means of last resort) if there is an active head in the same phase (FocP in the embedded clause) that targets a constituent in a position lower than the phase edge, that is, lower than [Spec,FinP]. As illustrated in (41), this is not the case for subject extraction (SU), but relevant for the extraction of the direct object (DO).

(41) a. [V [$_{ForceP}$ [$_{FocusP}$ i-focus [$_{FinP}$ SU $_{[u\text{-}focus,\ uQ\ ]}$ that [$_{TP}$ ...]]]]] no phase extension
b. [V [$_{ForceP}$ [$_{FocusP}$ i-focus [$_{FinP}$ SU that [$_{TP}$ DO$_{[u\text{-}focus,\ uQ\ ]}$.....]]]]] phase extension

[16] Note that this is similar to Rizzi's (1997) original idea that Fin and Force are separate heads in the presence of topics, while they are collapsed otherwise.

I will finish this section with data reminding us that also low subjects in English lead to a bleeding of the *that-trace* effect, as is illustrated in (42a). This fact supports our assumptions in B) above: subjects give rise to the *that-trace* effect, since they are the prime candidates for referentially anchoring the sentence to the context.[17] If there is an alternative anchor – as in (42a) the deictic adverbial *there* – giving rise to a thetic judgment (cf. Hinterhölzl 2019), the *that trace*-effect does not arise. Additionally, it is important to note that subextraction of an alternative anchor does give rise to the *that-trace* effect, as is illustrated by the extracted locative in cases of locative inversion in (42b) taken from Bresnan (1977). In our account, this follows from the fact that the sentences with locative inversion constitute thetic judgments that are referentially anchored via movement of the locative PP into / through [Spec,FinP].

(42) a. *Which people did John say that there were _ dancing in the street?*
b. *In which villages do you believe (*that) are found the best examples of this cuisine?*

6 In conclusion: Evaluating the Nature of the *that-trace* effect

Cowart & McDaniel (2021) point out that depending on the theoretical framework, the *that-trace* effect is viewed either as a grammatical violation or as a by-product of sentence processing. They also note that the phenomenon remains a conundrum, since it appears in a number of unrelated languages, but also varies in closely related languages (Cowart & McDaniels 2021: 258). Haider (2023) points out that the *that-trace* effect is not categorical but gradual – typical for processing effects – by citing the acceptability scores of Sobin (2002) of the examples in (43).

(43) a. *Who did you say that saw Elvis last night.* 64% good, 27% possible, 9% bad
b. *Who do they think that might visit the pope.* 22% good, 23% possible, 56% bad

First, I would like to point out that Sobin (2002) himself admits that the number of subjects in his experiment, which also comprised only a couple of sentences, is very low. Second, having a category 'possible' in a grammaticality judgment is not very helpful.[18] Third, I would like to note that the gradient nature of the data does not necessarily reflect the absence of a categorical grammatical condition, but rather indicates the variable evaluation of the presence and the position of the complementizer. Note that the presence of the complementizer in subject extractions in English does not necessarily lead to ungrammaticality, as is indicated in (40) and (42a) above. In the present account, the judgement of the speaker crucially depends on whether there is sufficient evidence for a high position of the complementizer in the relevant example. Note in this respect that (43a) involves a bridge verb that allows for embedded root phenomena (embedded

[17] A similar conclusion is reached in Bayer and Salzmann (2013).
[18] This is so, since it is not entirely clear what subjects mean when they judge a sentence as possible. Is it possible, since they would not use the sentence but have heard other speakers using it? Does 'possible' mean that the sentence is not perfect but anyway grammatical? In general, it will induce a speaker not to make a decision between grammatical or ungrammatical in case a sentence for whatever reason sounds weird to them.

V2, a dependent assertion). This could indicate to the native speaker that ForceP is activated and that the complementizer occupies a high position in the embedded clause, presenting evidence for phase extension. However, this is not categorical because the bridge verb may also be taken to simply embed a proposition. Similar considerations apply to (43b), where there is less evidence for a high complementizer, hence the expected lower ratings.

Sobin (2002) provides also a common account of the *that-trace* effect and the deletion or non-deletion of the complementizer in subject and object relatives. Note first that a *that-trace* effect is not expected in subject relatives in the present account, since the subject is not actually extracted from the embedded clause – but only moved into the local C-domain in standard accounts of relativization as well as in more recent matching approaches (cf. Cinque 2014). Thus, I argue that what happens in relative clauses is not a truncation of the C-domain, but the optional deletion of the complementizer that indeed is subject to processing constraints, as is illustrated in (44). While the correct interpretation of the initial constituent can be resolved locally in object relatives – after processing *Mary met* in (44a) – the interpretation of the initial constituent must be re-elaborated and can only be corrected after processing the entire clause, leading to a severe processing difficulty. Nothing like this is going on in Sobin's sentences in (43): they are easy to process, but may differ to various degrees in their evaluation of whether they represent the most economic version of expressing the relevant thought.

(44) a. *The woman Mary met yesterday has just called*
b. **The woman met Mary yesterday has just called*

Furthermore, subject relatives indicate that the notion *that-trace* effect is rather a misnomer. There is nothing wrong with the sequence *that trace* in grammar. Rather, as I have argued, it arises as an economy effect in the extraction from the embedded clause. I consider this a great advantage of the present account over past accounts.

To conclude, the present paper has placed the *that-trace* effect in a context of interconnected phenomena of (referentially) anchoring the sentence to the context in which the subject (as the highest argument) stands out. A maximally simple account of the *that-trace* effect was proposed that links it to a general condition of derivational economy. We have pointed out a number of repair strategies, namely truncation, phase edge extension and complementizer agreement that explain the appearance or non-appearance of the *that-trace* effect in German, English, French and Italian.

Furthermore, I have presented a new concept of phase-based movement, namely flexible phase edges that can be extended for syntactic reasons, but also due to prosodic conditions. Furthermore, I have presented empirical evidence for the bottleneck effect in Cimbrian, Italian and French, explaining why wh-movement of objects is necessarily connected to a low position of subjects. Low subjects in wh-questions are not required in high V2 languages like German and Dutch, since they regularly take recourse to phase extension.

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