

Event control

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In this paper, we argue that a set of small clause adjuncts involves a control relation with the event in the main clause functioning as controller – we call this instance of control event control. First, we clarify the empirical picture by looking at data from German, Norwegian, and English. Second, we show that event control is obligatory control and therefore suggest that it should be syntactically licensed in the same way. Our theoretical account is based on ideas by Whelpton (1995, 2002), Lohndal (2014), Fischer (2018), and Høyem (2018, 2019), and we ultimately propose that event control is syntactically licensed under upward Agree with underspecified PRO as probe and a Davidsonian event argument in the main clause as goal.

1. Introduction

Many languages, including English, German, and Norwegian, employ non-finite clauses (besides finite clauses) as adverbial adjuncts, for instance infinitival, participial, and other small clause adjuncts. The subject of these adjunct clauses is left unexpressed and must usually be interpreted co-referentially with the subject or object of the matrix clause, known as subject or object control in the literature. There is, however, another possible control relation that, to our knowledge, has been overlooked or at best marginalized in the recent control debate, namely event control, cf. (1) and (2):

- (1) [Unknown to Mr. Mori,] the other big trading houses were also putting together a consortium. (cf. Kortmann 1991: 73; Kortmann 1995: 207)
- (2) [Als letzten Arbeitsgang] hat Peter den Boden gebohntert.
as last work.task has Peter the floor waxed
'As a last step, Peter waxed the floor.' (cf. Pütz 1988: 199)

As illustrated in (3) and (4), the adjuncts in (1) and (2) can be paraphrased using a relative clause (cf. (3b) and (4b), respectively) or an independent finite clause (cf. (3a) and (4a), respectively).

- (3) a. The other big trading houses were also putting together a consortium. *This* was unknown to Mr. Mori.
 b. The other big trading houses were also putting together a consortium, *which* was unknown to Mr. Mori.
 c. *this/which* = the other big trading houses were also putting together a consortium
- (4) a. Peter hat den Boden gebohnt. *Das* war der letzte Arbeitsgang.
 Peter has the_{ACC} floor waxed this was the_{NOM} last work.task
 ‘Peter waxed the floor. This was the last step.’
 b. Peter hat den Boden gebohnt, *was* der letzte
 Peter has the_{ACC} floor waxed which the_{NOM} last
 Arbeitsgang war.
 work.task was
 ‘Peter waxed the floor, which was the last step.’
 c. *das/was* = den Boden bohnen
that/which = the_{ACC} floor wax_{INF}

This reveals two things: (i) although the adjuncts in (1) and (2) might not look like clauses at first sight, they ultimately turn out to be clause-like, involving PRO as empty subject;¹ (ii) the subject, which must be expressed overtly in the examples above (as *this*, *which*, *das*, *was*), refers to the event expressed in the main clause. As a consequence, event control does not only classify as a non-canonical instance of control because the controllee is part of a seemingly non-clausal structure; besides, it also involves an unusual type of controller, namely the event of the main clause. So why is this control, after all? What all (obligatory) control relations have in common is the following: there is an underspecified covert argument whose reference is identified by an accessible argument in the matrix clause – this relationship is what we call control. Standardly, the range of controlling arguments includes subjects, objects, or implicit agents (yielding subject, object, or implicit agent control, respectively); in this paper, we argue that this set should be extended by one further potential controlling argument, namely a Davidsonian event argument (yielding event control). Like other arguments, events are referential entities that can be represented by overt pronouns, as shown, for instance, in (3a)/(4a), where *this* and

1. Note that these adjuncts express the same predication relation as their finite counterparts and contain everything a full clause contains except a lexical subject and a finite verb.

das ('this') refer to the events in the preceding sentence. If this predication relation is expressed with a small clause (as in (1) or (2)), the overt pronoun referring to the event must be replaced by a covert pronoun that is controlled by the event argument. We argue that this element is PRO – a covert pronoun whose interpretation hinges on an argument in the matrix clause and which is underspecified in such a way that it is compatible with both, a DP argument as a controller as well as an event argument.

In the literature, this type of control seems to have faded out of the debate since the dispute on control into rationale clauses (RC) in the 80s and 90s (cf. Landau 2000, 2013), with one camp arguing for the implicit agent as the controller of PRO in RCs adjoined to a passive or impersonal copula matrix clause (Chomsky 1981; Manzini 1983, 1986; Manzini 1983, 1986; Jaeggli 1986; Roeper 1987; Clark 1990; Higginbotham 1999), cf. (5), and another one arguing for the matrix event as controller of PRO (Williams 1985; Lasnik 1988; Grimshaw 1990; Whelpton 1995), cf. (6).

(5) The boat was sunk [in order to collect the insurance]. (cf. Manzini 1983)

(6) Grass is green [to promote photosynthesis]. (cf. Williams 1974)

While examples like (5) clearly involve some implicit agent (i.e. somebody who wants to collect the insurance), this is much less clear in (6). At best, it could be argued that it is evolution or God “under whose control is the circumstance ‘grass is green’” (Williams 1985: 311); but such a purposeful agent cannot be the underlying subject in examples like (1) or (2) – here, the covert subject can only refer to the event denoted in the matrix clause. Hence, we argue that event control must be distinguished from implicit agentive control and is a control type of its own.

The paper is structured as follows: Section 2 presents empirical evidence that the different types of event-controlled adjuncts are found in two different syntactic domains and are adjoined to CP and vP/VP, respectively. In Section 3, it is argued that event control can be analyzed within the hybrid theory of control (see Fischer 2018), and Section 4 provides a brief conclusion.

2. Empirical evidence

Our data are taken from German, Norwegian, and English and comprise four adjunct types: appositional nominative DPs (Germ. *Satzappositionen*) (= type A), adverbial small clauses headed by the particle *als/som/as* (= type B), adverbial present and past participle constructions (= type C), and adverbial infinitives headed by *um/for/to* (= type D) (see (7)–(10) below).² To highlight event control visually, we use the notation PRO_e in our examples;³ but keep in mind that this index is only added for increased clarity and is not an inherent feature of PRO. We take PRO to be the same covert element in all control constructions and assume that its underspecification allows it to be controlled by different entities – including event arguments.

(7) TYPE A: Appositional (nominative) DPs

a. German

Martin will nun doch auswandern, [PRO_e ein schwerer Entschluss].
 Martin wants now still emigrate $_{\text{ANOM}}$ difficult decision
 ‘Martin wants to emigrate after all, a difficult decision.’

(cf. Duden 2005: 911)

b. Norwegian

Jon fortalte at han hadde sett ville indianer i Amerika, [PRO_e
 Jon told that he had seen wild Indians in America
 en aldeles utrolig historie].
 a completely amazing story

‘Jon told that he had seen wild Indians in America, a completely amazing story.’

c. English

He went to see her at the hospital, [PRO_e a bad idea]. (Andrew Weir, p.c.)

(8) TYPE B: Adverbial small clauses headed by *als/som/as*

a. German

[PRO_e Als letzten Arbeitsgang] hat Peter den Boden gebohrt.
 as last_{ACC} work.task has Peter the_{ACC} floor waxed
 ‘As the last task, Peter waxed the floor.’

2. Note that we do not intend to provide an exhaustive overview of event control and that there might well be further contexts in which event control can be found. The goal of this paper is to draw attention to these data in the first place and to show that this is a robust phenomenon which deserves more attention. Hence, the four types of adjuncts we start out with only represent a sample of a potentially bigger set of environments in which event control could occur.

3. In the literature, this notation can be found, for instance, in Whelpton (1995, 2002), Eide (1996), Flaate (2007).

- b. *Norwegian*
 [PRO_e Som kompensasjon] fikk de møte kapteinen
 as compensation_{INDF} were.allowed they meet captain_{DEF}
 på skipet.
 on ship_{DEF}
 ‘As a compensation, they got to meet the captain of the ship.’
- c. *English*
 The Six agreed to draft a treaty on these lines, but [PRO_e as a compromise] de Gaulle was asked to accept that the Atlantic alliance with America should be safeguarded and that ‘Community co-operation’ on economic issues in the EEC should continue to be developed. (BNCW F9P 820)
- (9) TYPE C: Adverbial present and past participle constructions
- a. *German*
 Die erste Plauderstunde von St. Hildegard findet nicht, [PRO_e
 the first discussion.session from St. Hildegard takes not
 wie irrtümlich gemeldet], am heutigen Dienstag statt.
 as wrongly reported on today_{ACC} Tuesday place.
 ‘The first discussion session at St. Hildegard will not, as wrongly reported,
 take place on Tuesday.’ (cf. Høyem 2019: 509)
- b. *Norwegian*
 [PRO_e Passende for anledningen] var begge kledd i svart.
 fitting for occasion_{DEF} were both dressed in black
 ‘Befitting the occasion, they were both dressed in black.’
- c. *English*
 The siren sounded, [PRO_e indicating that the air raid was over].
 (cf. Kortmann 1991: 8; Quirk et al. 1985: 1122)
- (10) TYPE D: Adverbial infinitives headed by *um/for/to*
- a. *German*
 Gras ist grün, [PRO_e um Photosynthese zu begünstigen].
 grass is green for photosynthesis to promote
 ‘Grass is green to promote photosynthesis.’
- b. *Norwegian*
 Gresset er grønt [PRO_e for å lokke til seg biene.]
 grass_{DEF} is green for to call to REFL bees_{DEF}
 ‘Grass is green to lure the bees.’
- c. *English*
 John_i introduced Sally to Mary [PRO_e to give him_i the chance of meeting
 Mary’s friend, Rachel]. (cf. Whelpton 2002: 198)

Since these adjuncts may contain a range of different adverbials and can be substituted by equivalent finite adverbial clauses (cf. Brodahl 2016, 2018; Flaate 2007; Høyem 2015, 2019; Høyem & Brodahl 2019), we argue that these adjuncts are small clauses with PRO as syntactic subject.

In the following, we will present syntactic evidence that these adverbial clauses differ with respect to their external syntax and adjoin to CP and vP/VP, respectively. In fact, they seem to behave like Haegeman's peripheral vs. central adverbial clauses (Haegeman 2012: 149ff.; see also Frey & Truckenbrodt 2015). Based on their syntactic-semantic behavior concerning scopal relations (negation, coordination, co-occurrence) and binding, we thus argue that appositional nominative DPs (type A) are adjoined in the CP domain, whereas the others (type B, C, D) are adjoined to vP/VP (cf. also Høyem 2019). We will explore this in detail in the following sections.⁴

2.1 Scope: Negation, co-occurrence, coordination

According to Haegeman (2012: 178–181), central adverbials may be in the scope of matrix negation, while peripheral adverbials cannot. This dichotomy is attested among the adjuncts discussed here: sentence appositions (type A) always take scope over negation, as in (11), while type B, C, and D adjuncts can be in- or outside the scope of matrix negation, cf. (12).⁵

(11) *Type A adjuncts > negation*

He did not visit her at the hospital, [PRO_e a bad idea].

= It was a bad idea that he did not visit her at the hospital.

≠ It was not the case that it was a bad idea that he visited her at the hospital.

4. In fact, these positional differences between appositional adjuncts and the other three types might be an indication of a more fine-grained system which distinguishes between event and propositional control, suggesting that events control adjuncts in the verbal domain, whereas propositions control appositional adjuncts in the CP domain. In the literature, allusions to both can be found: Fabricius-Hansen and Haug (2012: 40; 143), for instance, also use the term event control for control “by that matrix event itself”, while Kortmann (1991: 72) suggests that “the whole matrix proposition may serve as the controller of a given free adjunct”.

Semantically, propositions are more complex than events, which fits nicely with the observation that they control into higher adjuncts; but from a syntactic perspective, the licensing mechanism is in both scenarios basically the same, as we will discuss in more detail in Section 3.2.2. This is why we generally use the term event control as an umbrella term for both subtypes and leave a more nuanced semantic analysis for future research.

5. For reasons of space, we do not provide data for all three languages with all types of adjuncts.

(12) *Type B, C, D adjuncts < > negation*a. *English (type B)*

She did not eat the fish [PRO_e as a compromise].

= It was a compromise that she did not eat the fish.

= She ate the fish, not as a compromise (but because she loves fish).

b. *German (type C)*⁶

[PRO_e Dem Verkehrsabkommen entsprechend] stellten sie die A81
 the_{DAT} transport.agreement corresponding made they the A81
 nicht fertig.

not ready.

‘They did not finish the A81 according to the transport agreement.’

= It was in accordance with the transport agreement that they did not finish the A81.

= They did not finish the A81 according to the transport agreement (but according to their own preferences).

c. *Norwegian (type D)*

Jon bruker ikke såpe [PRO_e for å spare penger].

Jon uses not soap for to save money

‘Jon does not use soap to save money.’

= Jon saves money by not using soap.

= Jon does not use soap to save money (but to save the environment).

Another piece of syntactic evidence for different adjunction sites comes from coordination and co-occurrence data. According to Haegeman (2012: 164), “[c]entral adverbial clauses can only be coordinated with central adverbial clauses, and peripheral adverbial clauses can only be coordinated with peripheral adverbial clauses” since they are merged in different syntactic positions. If appositional nominative DPs (type A adjuncts) are peripheral adverbial clauses, while the other adjuncts are central ones, one would expect that the former cannot be coordinated with the latter ones, whereas it should be possible to coordinate adjuncts of type B, C, and D with each other. As the data below illustrate, this prediction is indeed borne out (for reasons of space, we do not include all combinations in all languages).

(13) a. *English (coordination of type A+B)*

*He went to see her at the hospital, [[PRO_e a good idea] and [PRO_e as a nice surprise]].⁷

6. This example has been taken from a data collection gathered by Kristin Klubbo Brodahl.

7. As the following examples demonstrate, each adjunct is completely fine alone:

(i) He went to see her at the hospital, [PRO_e a good idea].

(ii) [PRO_e As a nice surprise], he went to see her at the hospital.

- b. *German (coordination of type C+A)*
 *Peter hat [[PRO_e passend zum Thema] und [PRO_e eine nette
 Peter has fitting to.the theme and a_{NOM} nice
 Überraschung]] zu Halloween einen Dracula-Kuchen gebacken.
 surprise for Halloween a_{ACC} Dracula-cake baked
 ‘Peter has – befitting the occasion and a nice surprise – baked a Dracula
 cake for Halloween.’
- (14) a. *Norwegian (coordination of type C+B)*
 [[PRO_e Passende for anledningene] og [PRO_e som en morsom
 fitting with occasion_{DEF} and as a fun
 overraskelse]] hadde foreldrene kledd seg ut som spøkelses på
 surprise had parents_{DEF} dressed REFL out as ghosts at
 barnas Halloween-fest.
 childrens Halloween-party
 ‘Befitting the occasion and as a funny surprise, the parents dressed up as
 ghosts at the children’s Halloween party.’
- b. *English (coordination of type B+D)*
 [[PRO_e As a friendly favor] and [PRO_e to give him_i the opportunity to
 meet a nice girl]], John_i was introduced to Mary.

A similar piece of evidence comes from co-occurrence data. The appositional (nom-inative) DPs (type A) must be adjoined higher in the clause than the other adjuncts (type B, C, D) since they always take scope over the other adjuncts, as indicated in the readings below (15a–c).

- (15) a. *German (type A > type B; *type B > type A)*
 [[[PRO_e Als letzten Arbeitsgang] hat Peter den Boden gebohrt],
 as last_{ACC} work.task has Peter the_{ACC} floor waxed
 eine nette Überraschung].
 a_{NOM} nice surprise
 ‘As the last task, Peter waxed the floor, a nice surprise.’
 = That Peter as the last task waxed the floor was a nice surprise.
 ≠ That it was a nice surprise that Peter waxed the floor was the last task.
- b. *German (type A > type C; *type C > type A)*
 [[[PRO_e Passend zum Thema] hat Peter zu Halloween einen
 fitting to.the theme has Peter for Halloween a_{ACC}
 Dracula-Kuchen gebacken], PRO_e eine nette Überraschung].
 Dracula-cake baked a_{NOM} nice surprise
 ‘Befitting the occasion, Peter baked a Dracula cake for Halloween, a nice
 surprise.’
 = That Peter, befitting the occasion, baked a Dracula cake for Halloween
 was a nice surprise.
 ≠ That it was a nice surprise that Peter baked a Dracula cake for Halloween
 befitted the occasion.

- c. *German (type A > type D; *type D > type A)*
 [[Die Einwohner wurden in das Nachbardorf evakuiert,
 the_{NOM} inhabitants were in the_{ACC} neighbour.village evacuated
 [PRO_e um eine Katastrophe zu vermeiden]], PRO_e nach Angaben
 for a disaster to avoid after informations
 der Polizei eine äußerst vernünftige Maßnahme].
 the_{GEN} police a highly reasonable precaution
 ‘The inhabitants were evacuated to the nearest village to prevent a disaster,
 a most reasonable precaution according to the police.’
 = That the inhabitants were evacuated to the nearest village to prevent a
 disaster was a most reasonable precaution according to the police.
 ≠ That it was a most reasonable precaution according to the police that the
 inhabitants were evacuated to the nearest village should prevent a disaster.

2.2 Binding effects

Another major contrast between central and peripheral adjunct clauses concerns variable binding (Haegeman 2012: 179 f.; Frey & Truckenbrodt 2015: 82 f.). Interestingly, the same difference is found among the adjuncts discussed here (cf. also Høyem 2019). As can be seen in the sentences below, the quantifier phrase *jeder säumige Zahler* (‘every defaulting payer’) is able to bind a pronoun if the latter is part of an adverbial infinitival clause headed by *um* (‘for’), cf. (16a), a small clause headed by the participle *als* (‘as’), cf. (16b), or a participle construction, cf. (16c). However, if the pronoun is located inside an appositional nominative DP, variable binding is blocked (cf. (16d)).

(16) *German*

- a. [Jeder säumige Zahler]_i wurde angerufen, [PRO_e um ihn_i an die
 every defaulting payer was phoned to him at the
 fälligen Zahlungen zu erinnern].
 due payments to remind
 ‘Every unwilling payer was phoned to remind him of the impending
 payments.’
- b. [Jeder säumige Zahler]_i wurde angerufen, [PRO_e als letzter
 every defaulting payer was phoned as final
 Versuch, ihn_i an die fälligen Zahlungen zu erinnern].
 attempt him at the due payments to remind
 ‘Every unwilling payer was phoned as a final attempt to remind him of the
 impending payments.’

- c. [Jeder säumige Zahler]_i wurde der Reihe nach angerufen, [PRO_e every defaulting payer was the order after phoned basierend auf der Höhe seiner_i ausstehenden Zahlungen].
based on the height his_{GEN} due payments
'Every unwilling payer was phoned, based on the amount of his outstanding payments.'
- d. *[Jeder säumige Zahler]_i wurde wegen ausstehender Zahlungen every defaulting payer was because.of outstanding payments angerufen, [PRO_e ein furchtbares Erlebnis für ihn_i].
phoned a terrible experience for him
intended reading: 'Every unwilling payer was phoned because of outstanding payments, a terrible experience for every unwilling payer.'

The same holds for Norwegian and English, but for reasons of space, we will skip these data.

Following Haegeman (2012), Frey & Truckenbrodt (2015), and Høyem (2019), this must be due to different adjunction sites: only the adjuncts in (16a–c) seem to be c-commanded by the quantified phrase *jeder säumige Zahler* ('every defaulting payer'). This, again, suggests that these three adjunct types (type B, C, D adjuncts) are adjoined in the verbal domain, whereas appositional nominative DPs (type A adjuncts) must occur higher in the tree structure, namely in the CP domain.

This is furthermore corroborated by Principle C effects. If type A adjuncts are adjoined in the CP domain, i.e. above the subject, one would not expect principle C effects to arise in these adjuncts. And indeed, no such effects can be seen in the following examples taken from English. (The same holds for German and Norwegian.)

- (17) He_i invited the whole family for dinner, [PRO_e a nice gesture by Peter_i].

On the other hand, if adjoined to a projection in the c-command domain of the subject, i.e. in the verbal domain, one would expect a principle C violation to arise in type B, C, and D adjuncts. This is confirmed by the data in (18) (see also Frey & Truckenbrodt 2015). (The same holds for German and Norwegian, which we omit for reasons of space.)

- (18) a. *Type B: adverbial small clause headed by 'as'*
*He_i invited the whole family for dinner [PRO_e as an attempt to discuss Peter_i's health problems].
- b. *Type C: adverbial present participle construction*
*He_i invited the whole family for dinner [PRO_e befitting the occasion of Peter_i's 50th birthday].
- c. *Type D: adverbial infinitive headed by 'to'*
*He_i invited the whole family for dinner [PRO_e in order to discuss Peter_i's health problems].

To sum up, the data in this section have shown that appositional adjuncts (type A) differ from type B, C, and D adjuncts with respect to their adjunction sites, which gives rise to a different behavior concerning binding and scopal relations. Therefore, we can conclude that type A adjuncts classify as peripheral adverbial clauses and are adjoined in the CP domain, while type B, C, and D adjuncts classify as central adverbial clauses and are adjoined in the verbal domain.

2.3 Event control is obligatory control

In this section, we will briefly outline why we consider event control to be obligatory control before we then turn to a potential technical implementation. In order to do so, we will apply OC diagnostics as described, for instance, in Landau (2013). For illustration, we will mainly use German examples.

First, in OC constructions, the controller is obligatorily an argument of the embedding predicate, i.e. we have a local c-commanding controller. In our case, the controller is indeed an argument of the adjunct's matrix clause, namely a Davidsonian event argument in the main clause (cf. Davidson 1967). Regarding the c-command relationship, we will come back to the concrete underlying structure below, where we will see that this requirement is indeed also fulfilled. The locality restriction moreover implies that long distance (LD) control is ruled out in OC. That this is true in the case of event control is illustrated in (19).

- (19) Hans berichtete, dass Peter [PRO_e als letzten Schritt] den Boden
 Hans reported that Peter as last work.task the floor
 gebohrt habe.
 waxed have_{SBIV}
 'Hans reported that, as a last step, Peter had waxed the floor.'
 a. event₁: *berichten* ('report') in the matrix clause
 event₂: *den Boden bohnen* ('wax the floor') in the emb. clause
 b. *letzter Schritt* ≠ *berichten*: # Hans berichtete als letzten Schritt ...
 'Hans reported as a last step ...'
letzter Schritt = *den Boden bohnen* ('wax the floor')

As illustrated in (19b), PRO must be controlled by the event in the embedded clause (= waxing of the floor) – i.e., the adjunct *als letzten Schritt* ('as a last step') cannot refer to the reporting event of the matrix clause, but obligatorily modifies the embedded event *den Boden bohnen* ('wax the floor'). Thus, we can conclude that LD control is indeed impossible.

Furthermore, it has been shown that arbitrary control is illicit in OC constructions. Since events cannot receive an arbitrary interpretation, this follows

automatically.⁸ Last but not least, in the case of NOC, the controller must be human, whereas it can also be non-human in OC contexts. In the case of event control, the controller is obviously always non-human, since it is an event; hence this also suggests that event control must be obligatory control.⁹

To sum up, various tests have shown that event control behaves like other instances of OC, and therefore we argue that it should be syntactically licensed in the same way.

3. Theoretical approach

Let us now explore how event control can be syntactically modeled on a par with standard obligatory control. Following the hybrid theory of control (HTC) outlined in Fischer (2018), we aim to show that event control can be accounted for along the same lines. In the subsequent sections we will therefore briefly introduce the basic ideas of the HTC before we will come back to event control and show how it can be integrated into this theory.

3.1 Basic assumptions of the hybrid theory of control (HTC)

The HTC is a phase-based theory of control that assumes that OC is licensed under (upward) Agree. That is, we deal with a derivational control theory that takes the Phase Impenetrability Condition (PIC) seriously insofar as it assumes that syntactic licensing must occur within the respective accessible domain in the course of the syntactic derivation. Hence, it follows a central minimalist assumption which requires that syntactic licensing be locally constrained (principle of economy). We adopt the following definitions:

(20) *Phase Impenetrability Condition (PIC):*

The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations.

(Chomsky 2000: 108)¹⁰

8. By contrast, DPs can have the meaning *(any)one* (= arbitrary interpretation).

9. Another well-known criterion for OC is that OC PRO only allows a sloppy interpretation under ellipsis; however, we do not see how we could apply this test to event control.

10. Note that Chomsky (2001) proposes in addition a second, more liberal version of the PIC. We follow the more restrictive version in (20) for conceptual reasons; but this does not have any consequences for our analysis of event control.

(21) CPs and vPs are phases.

Let us now briefly look at the licensing of standard OC, i.e. OC with a DP as obligatory controller. The basic idea of the HTC is this: the controllee is merged into the derivation as an empty argument which is referentially defective.¹¹ This is encoded in syntax in terms of the feature specification $\{D, \beta: _ \}$. The β -feature can be viewed as a syntactically reified binding index feature, and that PRO carries an unvalued β -feature indicates that PRO needs to be referentially identified, which is achieved under Agree (involving upward probing, see (22)) with another element bearing a valued β -feature. At the C-I interface, Agree involving β -feature checking is interpreted as binding.¹² That is, syntax establishes the link between OC PRO and its controller, which is then semantically interpreted as binding.

The version of Agree that we adopt is defined in (22).

(22) *Agree*:¹³

A feature $[F: _]$ on α is valued by a feature $[F: val]$ on γ iff

- a. γ c-commands α ,
- b. γ is the closest goal, and
- c. α and γ are both accessible.

Standard OC is then derived as follows: the D-feature allows PRO to be merged into an argument position; from here it probes upwards to find a goal/licensor.¹⁴ If PRO cannot be licensed in the current phase, it moves to the phase's edge to remain accessible and thereby retain the possibility to get licensed later in the derivation (in accordance with the PIC). When an element bearing a valued β -feature is merged, PRO finds a goal and can be licensed under Agree; i.e., the β -feature of PRO is valued, which means that PRO is interpreted as being bound by this element (= the controller).

11. This empty argument $[F: _]$ is not necessarily a control-specific formative; but since we focus on control, we can equate it with PRO.

12. Note that this feature does not really display a specific syntactic property; it just signals whether a DP is referentially identified or not (if yes, the corresponding β -feature is valued, if not, it is unvalued; if an unvalued feature is valued under Agree, this relation is interpreted as a binding relation). For similar assumptions, cf. also Hicks (2009). See also Fischer (2004, 2006), where such a β -feature has already been introduced in the context of a derivational analysis of anaphoric/pronominal binding.

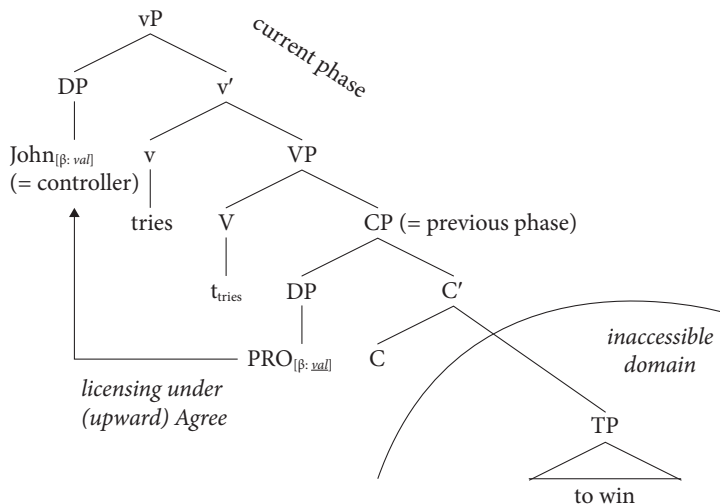
13. This is a version of Wurmbrand's definition of (Reverse) Agree (see Wurmbrand 2011: 3). Following Pesetsky & Torrego (2007), Bošković (2009 et seq.), Wurmbrand (2011) a.o., Agree is thus assumed to be valuation-driven.

14. As regards upward probing, see also Baker 2008, Schäfer 2008, Haegeman & Lohndal 2010, Bjorkman 2011, Wurmbrand 2011, Zeijlstra 2012, Bjorkman & Zeijlstra 2019.

- (23) *General licensing of OC in a nutshell:*
 controller_[β: val] ... [_{previous phase edge} PRO_[β: _] ...]

For a sentence like (24), which involves standard subject control, the point in the derivation when the control relation is licensed is illustrated in (25).¹⁵

- (24) John_i tries [PRO_i to win].
 (25) *Valuation of PRO's previously unvalued β-feature under Agree*



3.2 Event control: Technical implementation

In Section 2.3, we have shown that event control behaves like other instances of OC. In fact, the only difference seems to be that, in the case of event control, OC PRO refers to an event (or proposition, see also footnote 4 and Section 3.2.2) in the main clause (and not to a DP). So we suggest that, due to its similar behavior, the licensing of event control should occur in a similar way.

In analogy to the HTC analysis of subject control, we therefore suggest that small clause adjuncts selecting an event subject merge an empty argument in their subject position with the feature specification $\{D, \varepsilon_ \}$. In principle, the ε -feature is identical to the β -feature above since selection requirements of the control predicate determine whether PRO needs a DP or an event (or proposition) as a controller; so there is no need to implement this in the feature specification of PRO itself. Instead, PRO is rather so underspecified that it can be interpreted in either way, depending on the requirements of the selecting predicate; we will come back to this issue in

15. For further details concerning the licensing of control involving DPs as a controller within the framework of the HTC, see Fischer (2018) and Fischer & Høyem (2021).

greater detail in Section 3.4. But for the sake of convenience, we use the ε -notation if PRO ends up being interpreted as an event or proposition and call this argument PRO_ε to distinguish it visually from DP-controlled PRO.

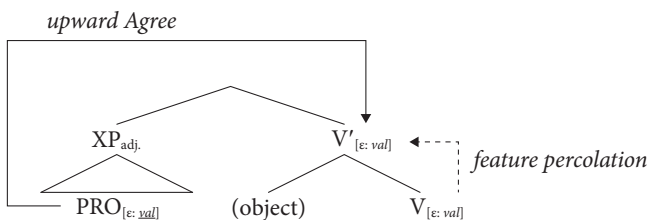
So what happens in syntax? PRO_ε with its unvalued ε -feature probes upwards to find a licenser with which to agree. Crucially, in line with Whelpton (2002), Lohndal (2014),¹⁶ a.o., we assume that event variables are syntactically active, and we suggest that this is encoded in syntax as follows: the Davidsonian event argument that ultimately licenses PRO_ε has its origin in the verb's lexical representation. In syntax, this is encoded in terms of a valued ε -feature; i.e. a verb enters the syntactic derivation with a valued ε -feature (indicating that it introduces an event). This feature percolates from the verbal head to the projections of the verb (cf. also Whelpton 2002: 199), and as a result, when probing upwards, PRO_ε finds a suitable goal. At the C-I interface, valued PRO_ε is thus interpreted as referring to the event denoted by its syntactic licenser (= the controller), in analogy to the situation in standard control outlined in Section 3.1.

To sum up, in syntax, OC simply boils down to this: since PRO is defective, an Agree relation between PRO and its controller must be established to referentially identify PRO by stating that in whichever way the controller is interpreted, this is how PRO is interpreted as well. That is, syntax links PRO to its controller (i.e. it determines the latter); semantics, on the other hand, later on determines their concrete interpretation. (And in the case of event control, PRO and its controller simply refer to an event or proposition.)

Crucially, the ε -feature is a syntactic object and has to be distinguished from the semantic event argument. In this paper, we focus on what is going on in the syntactic component.

As a first illustration, consider (26), which shows the syntactic licensing of event control into a (head-final) VP.

(26) *Valuation of PRO's previously unvalued ε -feature under Agree*¹⁷



16. “[Event variables] are introduced in the syntax.” (Lohndal 2014: 133)

17. Following Bare Phrase Structure, the mother node of the object turns (notationally) into an intermediate projection (V') if another constituent is merged within the same phrase (like an adjunct). So the VP adjunct in (26), XP, is *not* meant to be in a specifier position.

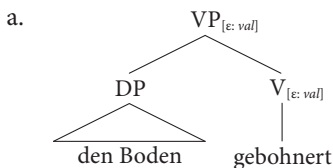
3.2.1 Licensing of PRO_e in VP adjuncts (= type B, C, D adjuncts)

Let us now get back to the concrete examples from the first sections. How are instances of event control like these derived?

- (27) a. [Als letzten Arbeitsgang] hat Peter den Boden gebohrt.
 as last work.task has Peter the floor waxed
 ‘As a last step, Peter waxed the floor.’
- b. underlying word order:
 dass Peter [VP [PRO_e als letzten Arbeitsgang] den Boden
 that Peter as last work.task the floor
 gebohrt] hat.
 waxed has
 ‘... that Peter, as a last step, waxed the floor.’
- (28) a. Peter hat den Boden gebohrt. Das war der letzte Arbeitsgang.
 Peter has the floor waxed this was the last work.task
 ‘Peter waxed the floor. This was the last task.’
- b. *das* (‘this’) = *den Boden bohnen* (‘wax the floor’)

The verb (*bohnern*) enters the derivation with a valued ε -feature, which percolates to the verbal projection, see (29a).¹⁸ PRO is in the accessible domain inside the adjunct (i.e. at its edge if the adjunct is a CP, otherwise at the edge of the highest phase inside the adjunct),¹⁹ and moreover, V' is an accessible goal for PRO: PRO and V' are both accessible at this point in the derivation, V' c-commands PRO, and V' bears a matching feature ($[\varepsilon: val]$).²⁰

(29) Structure before and after VP adjunction²¹

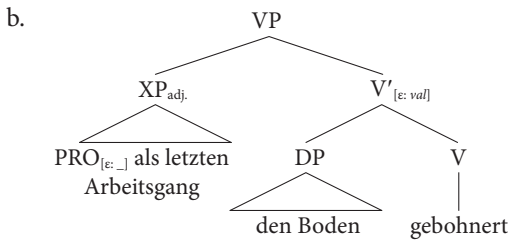


18. Recall that, in terms of notation, the VP node from (29a) turns into a V' node in (29b) when the tree is extended and CP is adjoined (following Bare Phrase Structure).

19. Depending on what we assume to be the internal structure of the adjunct, parts of it might already have been rendered inaccessible at this point, which is ignored in tree (29). The only thing that counts is that PRO is still accessible.

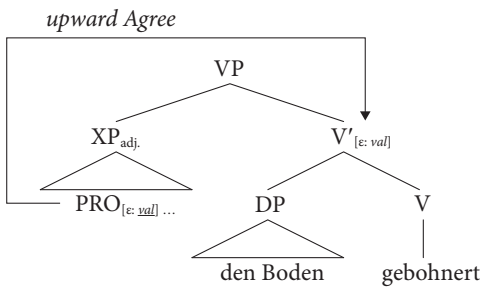
20. Note that $[\varepsilon: val]$ can also percolate to VP in (29b); but VP is not a potential goal for PRO due to lack of c-command.

21. Note that, for the sake of clarity, we only represent the valued ε -feature on the goal in the trees that illustrate control licensing (and ignore other instances of $[\varepsilon: val]$). Moreover, we use the label XP for all adjuncts in the trees since the categories might vary and are not relevant for the theory.



Hence, Agree can be established and the OC relation is derived; as desired, the semantic interpretation of this event at the C-I interface is *den Boden bohren* ('wax the floor') (see (30)).

(30) *Licensing of the control relation under Agree*



3.2.2 *Licensing of PRO_e in CP adjuncts (= type A adjuncts)*

Now what about event control into appositional nominative DPs, as in (31)? Recall that we have shown in Section 2 that they are adjoined at the CP level.

(31) Martin hat einen neuen Job, [PRO_e eine tolle Nachricht].
 Martin has a new job a great news
 'Great news, Martin has a new job.'

(32) a. Martin hat einen neuen Job. *Das* ist eine tolle Nachricht.
 Martin has a new job this is a great news
 'Martin has a new job. These are great news.'
 b. *das* ('this') =
Martin hat einen neuen Job ('Martin has a new job')

As the paraphrase in (32) suggests, the "controlling event" is that Martin has a new job; i.e. in this case, *das* ('this') refers to a bigger entity compared to the previous examples (cf. (28), for instance) – it refers to the whole proposition, which is semantically more complex than an event²² and corresponds, syntactically speaking, to the whole clause.

22. Following Pittner (1999: 181), propositions contain "vollständig spezifizierte Ereignisse" ('completely specified events').

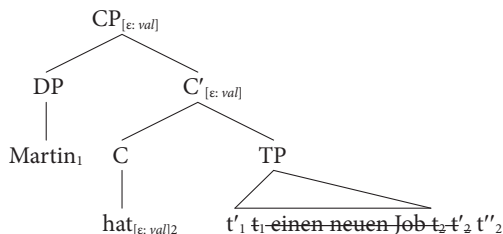
What can be observed in addition is that these appositional CP adjuncts can only be adjoined to finite declarative clauses (cf. (33)).

- (33) a. *Hat Martin einen neuen Job, [PRO_e eine tolle Nachricht]?
 has Martin a new job a great news
 b. Martin glaubt, einen neuen Job zu haben, [PRO_e eine
 Martin believes a new job to have a
 tolle Nachricht].
 great news
 ‘Great news, Martin believes to have a new job’
 → *great news*: must refer to the finite matrix clause, i.e. to ‘*Martin believing*
 to have a new job’.

If finiteness and a [-Q] specification are additional prerequisites for successful licensing in the case of appositional type A adjuncts, this suggests that the features of the T- and C-head (where these properties are encoded) also play a central role. So this seems to be what distinguishes event control in the verbal domain from propositional control in the CP domain: in the latter case, the verb also introduces information about the event in the verbal domain, but when the TP and CP layer are built, additional pieces of information (like tense) are added.

Syntactically, the licensing mechanism of the control relation basically remains the same: licensing occurs under upward Agree between PRO_e and the C-head bearing the valued features that are needed for the referential identification of underspecified PRO. In order not to complicate the tree structures below, we stick to the ε-notation in (34) and (35), although we have seen by now that, strictly speaking, it actually refers to the whole proposition.

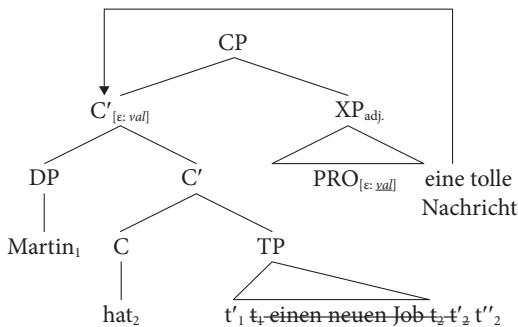
- (34) *Structure before CP adjunction takes place*



After CP adjunction has taken place, the configuration looks as indicated in (35). Recall that, notationally, the CP node from (34) turns into a C' node in (35) when the tree is extended and CP is adjoined (following Bare Phrase Structure).

The control relation can now be derived as follows: C' is an accessible goal for PRO since both PRO and C' are accessible at this point in the derivation,²³ C' c-commands PRO, and C' bears a matching feature ($[\varepsilon: val]$). Hence, Agree can be established and the OC relation is derived. At the C-I interface, the semantic interpretation of this event will thus turn out to be *Martin hat einen neuen Job* ('Martin has a new job').

(35) *Licensing of the control relation under Agree*



3.3 Multiple agree

In the literature, instances of multiple Agree have often served as a motivation for upward Agree (see, for instance, Hiraiwa 2001; Haegeman & Lohndal 2010; Zeijlstra 2012; Bjorkman & Zeijlstra 2019). In fact, an analysis in terms of multiple upward Agree can also straightforwardly account for sentences with several small clause adjuncts that refer to the same event (see (36)).

- (36) Ich habe gehört, dass Peter [passend zum Thema] [als kleine
 I have heard that Peter fitting to.the topic] as little
 Überraschung] einen Dracula-Kuchen gebacken hat.
 surprise a Dracula-cake baked has
 'I heard that Peter, befitting the occasion, had baked a Dracula cake as a little
 surprise.'

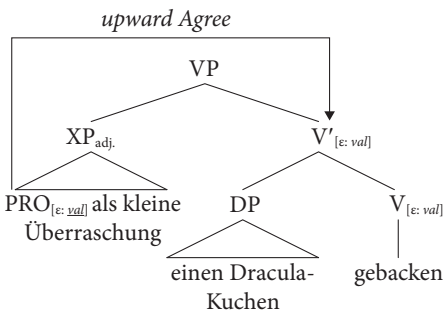
The first adjunct in (36) involves an adverbial present participle construction (type C adjunct), the second one an adverbial small clause headed by the particle *als* ('as') (type B adjunct); i.e., we deal with two small clause adjuncts adjoined at the same

23. PRO is in the accessible domain inside the adjunct, namely at its edge if the adjunct is a CP, otherwise at the edge of the highest phase inside the adjunct in case PRO's earlier positions have already been rendered inaccessible.

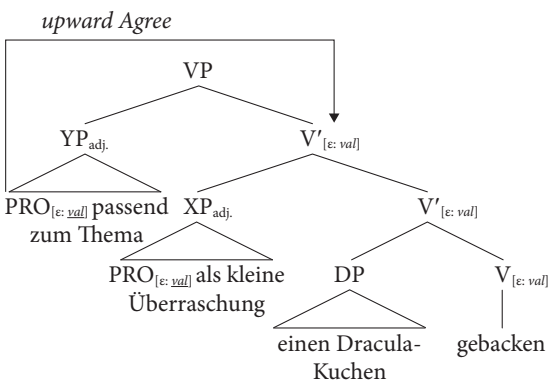
level, namely VP. Since the controlling event is in both cases the event introduced by the predicate *bake*, an analysis based on upward Agree can indeed straightforwardly account for these data since the two instances of PRO function as two probes which ultimately find the same goal as a licensor.²⁴

More specifically, the licensing of this control relation comes about as follows: when the first adjunct is adjoined to VP, the PRO it contains probes upwards for a goal to value its unvalued ε -feature. V' turns out to be such a suitable goal – PRO and V' are both accessible at this point in the derivation, V' c-commands PRO, and V' bears a matching feature ($[\varepsilon: val]$) (see (37a)). Next, the second adjunct is adjoined, and since the valued ε -feature of the matrix event can again function as a goal, the second instance of PRO can be licensed in the same way (see (37b)).

(37) a.



b.



As a result, OC is derived, which in this case involves control into both adjuncts by the same event. At the C-I interface, the semantic interpretation of this event is finally determined as *einen Dracula-Kuchen backen* ('bake a Dracula cake').

24. As discussed by Zeijlstra (2012), downward licensing, by contrast, would not work in such a configuration: if the controller were the probe, it could not license two goals since it would be valued already after the first instance of Agree.

3.4 On the distinction between standard PRO and PRO_e

One question that remains to be answered concerns the distinction between PRO being controlled by a DP (= standard PRO) vs. PRO being controlled by an event (= PRO_e). As alluded to before, this distinction is not inherent to the element PRO as such, but rather follows from the context in which PRO occurs and the fact that PRO is initially so underspecified that it is compatible with both types of interpretations.

Whether a non-finite adjunct selects an agent or event subject in the active depends on the involved predicates and is reminiscent of the situation in passives, where we also find event passives.²⁵ Similarly, OC can involve either PRO_e, which is controlled by an event, or agentive PRO, which gives rise to subject, object, or implicit agent control; see (38) vs. (39). As the paraphrase in (38a) shows, the adjunct in (38) involves event control, whereas in (39), PRO is controlled by the subject DP *Peter*, as illustrated in (39a).

(38) *event control:*

[PRO_e Als letzten Versuch (ihn umzustimmen)] [schrieb Peter einen
as last attempt (him round.to.bring) wrote Peter a
Brief an den Vermieter]_e.

letter to the landlord

‘In a last attempt to make him change his mind, Peter wrote a letter to the landlord.’

meaning:

- a. Peter schrieb einen Brief an den Vermieter. *Das war der letzte*
Peter wrote a letter to the landlord this was the last
Versuch (ihn umzustimmen).
attempt (him round.to.bring)
‘Peter wrote a letter to the landlord. This was the last attempt to make him
change his mind.’
- b. *das* (‘this’) = *einen Brief an den Vermieter schreiben* (→ event)
(‘write a letter to the landlord’)

(39) *subject control:*

[PRO₁ Als Arbeitsloser] hatte Peter₁ keine Chance auf die Wohnung.
as unemployed had Peter no chance on the apartment

‘Being unemployed, Peter had no chance to get the apartment.’

25. As Solstad puts it, “(e)vent passives are verbal passives which involve only a causing event and no agent, where the notion of agent should be interpreted narrowly to involve only individuals capable of volitional action. Put differently, in event passives, no causing individual is assumed to be implicitly present semantically” (Solstad 2009: 366).

meaning:

- a. Da Peter arbeitslos war, hatte er keine Chance auf
since Peter unemployed was had he no chance on
die Wohnung.
the apartment
'Since Peter was unemployed, he had no chance to get the apartment.'
- b. external argument of *arbeitslos/Arbeitsloser* ('unemployed')
= *Peter* (→ DP)

Moreover, there are also ambiguous adjuncts which can either select PRO_e or agentive PRO controlled by an implicit agent; i.e., some sentences can be interpreted as either involving event control or implicit agent control; see (40) vs. (41) (cf. also Høyem 2015: 179).

(40) *event control:*

[Die Einwohner wurden evakuiert,]_e [um PRO_e eine Katastrophe
the inhabitants were evacuated for a disaster
zu verhindern].
to prevent
'The inhabitants were evacuated to prevent a disaster.'

meaning:

- a. Die Einwohner wurden evakuiert. *Dies* verhinderte eine Katastrophe.
the inhabitants were evacuated this prevented a disaster
- b. *dies* ('this') = *die Einwohner evakuieren* (→ event)
(‘evacuate the inhabitants’)

(41) *implicit agent control:*

Die Einwohner wurden evakuiert, [um PRO_{agentive} eine Katastrophe
the inhabitants were evacuated for a disaster
zu verhindern].
to prevent
'The inhabitants were evacuated to prevent a disaster.'

meaning:

- a. Die Einwohner wurden evakuiert. *Die Verantwortlichen* verhinderten
the inhabitants were evacuated the responsible prevented
so eine Katastrophe.
thus a disaster
'The inhabitants were evacuated. In doing so, the responsible persons prevented a disaster.'
- b. external argument of (*eine Katastrophe*) *verhindern*
= *die Verantwortlichen* ('the responsible persons') (→ DP)

As a result, we can generally conclude that it depends on the predicate inside the adjunct whether PRO is ultimately controlled by an event or a DP – and as the examples in (40) and (41) have shown, there are in addition ambiguous adjuncts in which both interpretations are viable. In any case, it is not an inherent property of PRO itself which is responsible for this decision – but its underspecification makes it compatible with both syntactic environments.

4. Conclusion

Based on a huge set of data from German, English, and Norwegian, we have argued that the set of obligatory control relations should be extended to include event control, a control relation between PRO inside a small clause adjunct and a Davidsonian event argument in the matrix clause. In this paper, we have focused on the following types of adverbial adjuncts: appositional nominative DPs, adverbial small clauses headed by the particle *als/som/as*, adverbial present and past participle constructions, and adverbial infinitives headed by *um/for/to*. Based on their different behavior concerning binding and scopal relations, we concluded that appositional nominative DPs (type A adjuncts) are adjoined at the CP level, whereas the others (type B, C, D adjuncts) are adjoined in the verbal domain. The systematic differences between these two classes suggested moreover that there might be a more fine-grained distinction between events and propositions as controllers, and so the term event control has to be read as an umbrella term for both subtypes.

Since it behaves like standard OC, we argued that event control should be syntactically licensed in the same way and therefore proposed, following the hybrid theory of control, that the control relation is licensed under upward Agree with PRO_e as probe and an event (or proposition) in the matrix clause as goal. In line with Whelpton (2002), Lohndal (2014), a.o., we assumed that event variables are syntactically active, and we proposed that this is encoded in syntax as follows: verbs come into the derivation with a valued ε -feature (which indicates that they introduce an event); this feature percolates from the head to the verb's (extended) projections.²⁶ PRO_e, on the other hand, is referentially defective and needs to be referentially identified in the course of the derivation; technically, this means that PRO_e is underspecified and bears an unvalued feature which can be checked by a valued ε -feature.²⁷

26. In fact, if control takes place in the CP domain, additional information is added by the T- and C-head; this then leads to propositional control.

27. Recall that it depends on the predicate that selects PRO as its argument whether the unvalued feature is checked by an event or an argument DP (the former yielding event control, the latter yielding subject or object control).

PRO's concrete interpretation can be determined once feature valuation has taken place under Agree; i.e., Agree syntactically links PRO to the controller and thus entails that PRO ultimately has the same interpretation. As a result, at the C-I interface, valued PRO_e is interpreted as referring to the same event as its controller.

So event control integrates smoothly with existing analyses of standard control, and the data have shown that we deal with a robust phenomenon that deserves further attention in future research.

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