

# Towards a typology of complement control

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## 1. Introduction\*

The analysis of complement control has been largely influenced by the properties of control structures in Indo-European languages, mainly Germanic and Romance languages. Complement control occurs with verbs that take a state of affairs (SOA) argument and in which identification of an argument of the matrix predicate with an argument of the embedded predicate takes place:

- (1) a. John<sub>i</sub> tried [ <sub>i</sub> to bake a cake].  
b. Mary<sub>i</sub> persuaded John<sub>j</sub> [ <sub>j</sub>/\*<sub>i</sub> to bake a cake] .  
c. Mary<sub>i</sub> promised John<sub>j</sub> [ <sub>i</sub>/\*<sub>j</sub> to bake a cake] .

In (1a) and (1c) the subject of the matrix verb is identified with the covert subject of the embedded verb (subject control), whereas in (1b) the object of the matrix verb is identified with the covert subject (object control). The English examples suggest that, in general, the matrix argument is overt (the ‘controller’ in the following), whereas the relevant argument in the embedded clause is covert (the ‘controllee’ in the following, indicated by ‘\_’). The embedded predicate occurs in an infinite verb form, which does not show any agreement with the covert subject. From these data, the conclusion has been drawn that the typical instance of complement control obligatorily involves a covert argument in the complement clause; neither free nor bound pronouns are assumed to be possible, an assumption that led to the early analyses of ‘Equi NP deletion’ (Rosenbaum 1967). The gap in the complement clause regarding the controllee is generally attributed to the lack of projections that license the structural case of the respective argument or the failure of the embedded (infinite) predicate to assign that structural case.

Cross-linguistic research, however, has revealed that this picture is too simple. First of all, not all languages make use of infinite complement clauses (e.g. Chinese as an isolating language, Classical Nahuatl as a polysynthetic language). This, then, raises the question of whether complement control should be ruled out in these languages in principle. Secondly, not all languages leave the controllee covert; pronominal controllees are possible, as I will show below.

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Thirdly and related to the previous point, obligatory argument identification may also be required with finite SOA-arguments, which has already been pointed out by various linguists (see Landau 2004 and the references therein). And fourthly, deviating from the majority of languages and structures, the position of overt controller and covert controllee can be reversed: In structures of ‘backward control’ (Polinsky & Potsdam 2002a), the controller is realized in the complement clause.

It is the aim of this paper to evaluate the various types of sentential complementation available in terms of complement control cross-linguistically. I will propose a lexical classification of control classes on the basis of the instantiated subordination patterns. I want to focus on an important distinction, namely that of structural vs. inherent control. Structural control is found with predicates that select a clausal complement whose structure requires argument identification and thus ‘induces’ control. Infinitival complements are prototypical cases for this kind of control because in most languages infinitival complements can only ‘survive’ in structures of control or raising. The interesting question is which predicates license structural control and which cross-linguistic differences emerge between potential licensors. Inherent control is found with predicates that require control readings independent of the instantiated structure of sentential complementation (e.g. a directive predicate such as *zwingen* ‘force’). In addition, I will recapitulate and add arguments for the dual lexical-syntactic nature of complement control.

The paper is organized as follows: In section 2, I will give a brief summary of the properties of complement control, which then will allow to define obligatory control in section 3. Section 4 discusses the interplay of lexicon and syntax in complement control, highlighting the dominant role of syntax for the controllee and the dominant role of the lexicon for the controller. In section 5, I will illustrate the distinction of structures that I consider to require control and those that are neutral with respect to control. This distinction is relevant for the discussion of the various lexical classes of control predicates in section 6, which are defined on the basis of their control properties in dependence of the pattern of sentential complementation. Finally, in section 7, I will briefly discuss backward control and control in embedded questions. I add a general questionnaire on complement control in the appendix.

## 2. Properties of complement control

In order to define obligatory control (see section 3), it is necessary to consider the phenomena that may fall under complement control. In this section I will deal with variable control and control shift, the potential control readings (exhaustive vs. non-exhaustive), implicit control, and control in subject clauses.

## 2.1. Variable control and control shift

The distinction of subject vs. object control is one of the earliest in the research on complement control. Predicates that have only one individual argument besides the SOA-argument only qualify for subject control. Polyadic predicates represent the interesting case because they may show either subject or object control. Many syntactic approaches (since Rosenbaum 1967) have assumed that polyvalent control verbs should exhibit object control (see Rosenbaum's *Minimal Distance Principle* or the *Minimal Link Condition* between controller and controllee used by Hornstein 1999); subject control verbs such as *promise* are considered to be highly marked exceptions, an assumption that ignores the systematicity of the class of commissive predicates such as *promise*.

Verbs with a causative semantic structure have been identified as the typical instances of object control predicates. Predicates that express a request or predicates that denote that the object referent is made responsible for something (e.g. *ankreiden* 'fault s.o.', *anlasten* 'blame', *anzeigen* 'bring charge against') are likewise object control predicates. Commissive predicates and verbs of communication with an implied addressee (e.g. *verkünden* 'announce') are typical subject control predicates. Besides the systematic control classes there are also more or less isolated predicates with a specific control reading (e.g. *beneiden* 'envy', object control).

Quite a number of verbs do not show a preference for subject or object control; they allow control with either argument, thus exhibiting 'variable control'. Typically, these are verbs of joint intentions/plans/ arrangements, e.g. *vorschlagen* 'propose'.

### (2) Variable control

Maria<sub>i</sub> schlug Peter<sub>j</sub> vor [<sub>i/j/i+j</sub> einen Tisch im Restaurant zu  
M proposed P PT a table in.the restaurant to  
bestellen].  
order.INF

'Mary proposed to Peter to reserve a table in the restaurant'

Usually, the context triggers a preferred reading; but other markers may delimit the set of possible readings as well. The Chinese particle *le* has two uses (perfective marker and marker of 'currently relevant state', see Li & Thompson 1981) that both reduce the potential readings of variable control predicates because they trigger a factive reading of the SOA-argument, which renders the subject the more plausible controller (see (3b/c)).

## (3) Chinese (Yi-Chun Yang p.c.)

- a. Dahua<sub>i</sub> anshi Xiaomei<sub>j</sub> [<sub>i/j/i+j/\*k</sub> keyi he yi-bei-bailandi].  
 D signal X can drink one-CL-brandy  
 ‘Dahua signaled Xiaomei that he/she/they can drink a glass of brandy’
- b. Dahua<sub>i</sub> anshi Xiaomei<sub>j</sub> [<sub>i/\*k/\*j</sub> he-le yi-bei-bailandi].  
 D signal X drink-PERF one-CL-brandy  
 ‘Dahua signaled Xiaomei that he has drunk a glass of brandy’
- c. Dahua<sub>i</sub> anshi Xiaomei<sub>j</sub> [<sub>i/\*k/\*j</sub> he yi-bei-bailandi le].  
 D signal X drink one-CL-brandy CRS  
 ‘Dahua signaled Xiaomei that he has drunk a glass of brandy’

Related to the phenomenon of variable control is the phenomenon of ‘control shift’ (Růžička 1983, 1999, Comrie 1984, 1985, Farkas 1988, Wegener 1989, Sag & Pollard 1991, Panther 1993, Petter 1998): the controller of polyvalent control predicates shifts from subject to object control (e.g. with *versprechen* ‘promise’) or vice versa (e.g. *bitten* ‘ask’). Unlike variable control, control shift is generally triggered in marked environments, i.e. the shift is typically induced by modal predicates such as ‘be allowed’, by passivization of the embedded verb or by the embedding of non-agentive, i.e. recipient-oriented verbs. In (4a) the shift from object to subject control is triggered by passive, in (4b) by the context which renders the subject referent the more likely candidate for control. In German the modal *dürfen* ‘be allowed to’ is the strongest trigger for control shift. (4c) shows that *bitten* ‘ask’ may shift, whereas this shift is not plausible for *raten* ‘advise’ (see (4d)).

## (4) Control shift

- a. Mary<sub>i</sub> asked Peter<sub>j</sub> [<sub>i</sub> to be invited to the party].
- b. The pupil<sub>i</sub> asked the teacher<sub>j</sub> [<sub>i</sub> to leave early].
- c. Maria<sub>i</sub> bat Peter<sub>j</sub> [<sub>i</sub> zur Party gehen zu dürfen].  
 M asked P to.the party go.INF to be.allowed.INF  
 ‘Mary asked Peter to be allowed to go to the party’
- d. ? Maria<sub>i</sub> riet Peter<sub>j</sub> [<sub>i/j</sub> zur Party gehen zu dürfen].  
 M advised P to.the party go.INF to be.allowed.INF  
 ‘Mary advised Peter to be allowed to go to the party.’

The ‘shift’ is actually a shift on the syntactic surface; in semantic terms, the controller does not shift: Farkas (1988), Sag & Pollard (1991), Pollard & Sag (1994) and Jackendoff & Culicover (2003) have assumed a semantic coercion of the embedded predicate such that it is enriched with a causative-like component. The controller is identified with the implicit causer of the coerced predicate. Let me show this with a control shift in directive verbs based on the trigger *dürfen*.

These predicates have the simplified representation in (5a), ignoring potential non-exhaustive readings. The embedded predicate P may be extended as in (5b). Semantic composition will then yield (5c).

- (5) a.  $\lambda P \lambda y \lambda x V(x,y,P(y))$   
 b.  $\lambda u P(u) \rightarrow \lambda v \exists u \text{ ALLOW}(v,u,P(u))$   
 c.  $\lambda P \lambda y \lambda x \exists u V(x,y,\text{ALLOW}(y,u,P(u)))$  with  $u = x$

That P's highest argument u is identified with x and not projected independently yields a reading in which x benefits from the situation denoted by the embedded predicate.

The availability of control shift is language-specific, as has been already pointed out by Ružička (1983) and Comrie (1984, 1985).<sup>1</sup> Germanic languages seem to be more prone to control shift than other languages. That English displays less control shift than German has been observed by Comrie (1985) and studied by Panther (1993), who tested several control predicates with native speakers of English and German and found out that German control predicates are more likely to shift than their English equivalents. Słodowicz (2006) has shown that control shift is not available in Polish.

Since control shift seems to depend on the sketched implicit coercion mechanisms, languages that avoid these implicit operations are expected to avoid control shift as well.

## 2.2. Control readings

Orthogonally to the simple contrast of subject vs. object control, other dimensions of control relations have to be taken into account. Whereas in the simple case, controller and controllee overlap completely in terms of their reference (= 'exhaustive control'), other control readings occur as well, namely 'split control' and 'partial control'. Split control occurs if the two individual arguments of a polyvalent matrix predicate jointly control the controllee, which is indicated by '+':

- (6) German: split control  
 Peter<sub>i</sub> vereinbarte mit Maria<sub>j</sub> [ <sub>-i+j</sub> am Abend (gemeinsam) ins  
 P agreed with M at.the evening together in.the  
 Kino zu gehen]  
 cinema to go.INF  
 'Peter and Mary agreed on going to the cinema together'

1 There are even control predicates that require a control shift context. The German verb *verhindern* 'prevent', derived from the object control verb *hindern* 'prevent s.o. from', can only take an infinitival complement with a control shift context that renders the subject referent a possible controller; the internal argument present in *hindern* is no longer available in *verhindern*.

Predicates that denote a cooperative behavior typically allow split control, but other predicates may do as well, especially if modifiers such as *together* support the split control reading. In general, split control is not the only reading available with the respective matrix predicate, although it may be the preferred reading. In Mandarin Chinese (Yi-Chun Yang p.c.) there are some predicates that obligatorily require split control, namely *bang(mang)* ‘help’, *qing* ‘invite’, *yao* ‘invite/ask’ and *yue* ‘ask’.

(7) Chinese: obligatory split control (Yi-Chun Yang p.c.)

- a. Dahua<sub>i</sub> yue Xiaomei<sub>j</sub> [ <sub>-i+j/\*k</sub> zai tushuguan kan shu].  
 D ask X at library see book  
 ‘Dahua asked Xiaomei to study together with him in the library.’
- b. \* Dahua<sub>i</sub> yue Xiaomei<sub>j</sub> [ <sub>-j</sub> lai ta<sub>i</sub> jia].  
 D ask X come 3SG home  
 ‘Dahua asked Xiaomei to come to his home.’

Another control pattern, which has been put into focus by Landau (2000), is the so-called ‘partial control’, in which the controllee refers to an entity that includes the referent of an argument of the matrix verb and a further participant (i+v) not included in the referents of the arguments of the matrix predicate. As the examples in (8) show, the admissibility of partial control is a lexical property of the matrix verb: *manage* excludes it, *want* allows it. According to Landau (2000) factive, propositional, desiderative, and interrogative predicates allow partial control in English.

(8e) Partial control

- a. \*John<sub>i</sub> managed [ <sub>-i+v</sub> to meet at six].  
 b. John<sub>i</sub> wanted [ <sub>-i+v</sub> to meet at six].

Partial control involves a semantic plural in the controllee, which is enforced by the embedding of a collective predicate. Split control, in contrast, involves a syntactic plural in the controllee, as has been pointed out by Landau (2000). Collective predicates typically come in two patterns: they either select a plural subject (*they meet at six*) or a comitative structure (*John met with Mary*). In order to test the availability of partial control, one has to look for collective predicates that do not allow the comitative NP/DP to remain implicit; otherwise, the test for the complex reference of the controllee (i+v) fails to be conclusive. Partial control is less common in German than in English. The German correspondences of *meet* and *gather* (*sich treffen* and *sich versammeln*) are inherently reflexive verbs. Since German reflexives bear phi-features (person and number), feature clashes, as triggered by the partial control reading, are not tolerated by many speakers. The German equivalent of (8b) is not really acceptable: A sentence with the third person reflexive, which is underspecified in terms of num-

ber, is already hardly acceptable (see (9a)); in case of a person/number clash as in (9b) it is completely ungrammatical.

- (9) a. ?? Jan<sub>i</sub> will [<sub>i+v</sub> sich um 6 Uhr versammeln].  
           John wants                   3.REFL at 6 o'clock gather.INF  
           ‘John wants to gather at six’.
- b. \* Ich will [ mich/uns/sich um 6 Uhr  
       I want       1SG.REFL/1PL.REFL/3.REFL at 6 o'clock  
       versammeln].  
       gather.INF

The class of German predicates that allow partial control seems to be restricted to propositional attitude predicates such as *befürworten* ‘approve’, *ablehnen* ‘decline’, *dagegen/dafür sein* ‘to be against/for it’. The common interpretation of (10a) and similar examples is that the subject referent of the embedded predicate includes the subject referent of the matrix predicates and other referents. A reading with the exclusion of the matrix subject referent is not available, as is demonstrated in (10b): If the embedded object pronoun is interpreted as co-referential with the controller, the controllee must have a partial reading; a generic reading (indicated as ‘gen’) is impossible.

- (10) German
- a. Die IHK<sub>i</sub> befürwortet, [<sub>i+v</sub> an den Standorten im Osten  
    the board.of.trade approves at the locations in.the east  
    Deutschlands Lehrstellen zu schaffen]. [IDS-corpus]  
    Germany.GEN apprentice.position to create.INF  
    ‘The board of Trade approves of creating new positions for apprentices in East Germany’
- b. Peter<sub>i</sub> befürwortet [\*gen/i+v ihn<sub>i</sub> zu nominieren].  
    P approves him to nominate.INF  
    ‘Peter approves of nominating him’

Whereas *ablehnen* may occur with exhaustive control readings, *befürworten* and *dagegen/dafür sein* preferentially occur with partial control readings. Usually, there are hardly any predicates that are restricted to a partial control reading. According to Yang (p.c.), Chinese *shandong* ‘abet’ is a predicate that requires partial control readings. In Polish and Turkish (Ślódowicz 2006, this volume), partial control is not available.<sup>2</sup>

As already mentioned in the context of (10b), ‘generic control’ represents a further reading – besides ‘arbitrary control’, both of which are sometimes not

2 Although Ślódowicz (this volume) excludes partial control for Turkish, propositional attitude predicates, similar to those discussed for German, seem to be potential candidates for partial control. This, however, has to be checked systematically.

clearly distinguished. I will distinguish these two notions: Generic control is control by a generically understood argument, whereas arbitrary control is the label for non-control; the referent of the controllee must be determined otherwise. I will return to these notions in the context of implicit control (2.3) and control in subject clauses (2.4).

Generally, exhaustive control readings allow a simple semantic analysis, e.g. the single abstraction over multiple occurrences of a variable in the Semantic Form (SF) of the control predicate, as shown in (11a) for an intransitive subject control predicate and in (11b) for a transitive object control predicate.

(11) Representation of exhaustive control

a.  $\lambda P \lambda x \lambda s V(x, P(x))(s)$

b.  $\lambda P \lambda y \lambda x \lambda s V(x, y, P(y))(s)$

In all the other cases, additional mechanisms are required. In case of non-exhaustive control I will make use of the following representation, in which the controllee is represented as the variable *z*. Argument identification between *z* and the controller is subject to further interpretational mechanisms.

(12) Representation of non-exhaustive control<sup>3</sup>

a.  $\lambda P \lambda x \lambda s V(x, \lambda z P(z))(s)$

b.  $\lambda P \lambda y \lambda x \lambda s V(x, y, \lambda z P(z))(s)$

### 2.3. Implicit control

Another aspect that has to be considered is the fact that the controller does not necessarily have to be overt; in some cases it can remain implicit. Generally, the

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3 Note that the representation in (12) suggests an analysis of control complements as properties, not as propositions. The issue whether control predicates embed properties (e.g. Chierchia 1983, 1985, Dowty 1985, Asudeh 2005) or propositions (e.g. Higginbotham 1992, Landau 2000, 2004, most syntacticians) has not been settled yet because there is no completely conclusive evidence for either case. Both groups mainly argue on the basis of syntactic arguments (propositional analyses: e.g. the syntactic integration of PRO, finite control; property analysis: sloppy identity under ellipsis). The basic assumption seems to be that all control complements either have to be properties or propositions, not regarding the alternative that some predicates presumably select a proposition (e.g. factive predicates) and some a property (e.g. predicates like *get used to* etc., which select for event types, not event tokens). I would like to argue that the issue has to be decided on semantic grounds, testing the compatibility of sentence adverbs such as *probably* with infinitival complements, which, for instance, are grammatical with SOA-arguments of factive predicates:

(i) weil sie bedauert, wahrscheinlich eine Fehlentscheidung getroffen zu haben.  
 because she regrets probably a wrong.decision made to have  
 ‘because she regrets to have made a wrong decision’

control relation is not affected if the potential controller is left implicit (see (13a/b)). However, some predicates show a control shift if the potential controller argument is left implicit, as Jackendoff & Culicover (2003) have shown for *ask* (see (13c/d)).

- (13) a. John<sub>i</sub> shouted to Sally<sub>j</sub> [ <sub>j</sub>/\*<sub>i</sub> to take care of herself. ]  
 b. John<sub>i</sub> just shouted [ <sub>j</sub>/\*<sub>i</sub> to look out for him<sub>i</sub> ].  
 c. John<sub>i</sub> asked Sally<sub>j</sub> [ <sub>j</sub>/\*<sub>i</sub> to take care of herself<sub>j</sub> ].  
 d. John<sub>i</sub> asked [ <sub>i</sub> to take care of himself<sub>i</sub>/\*him<sub>i</sub> ].

Jackendoff & Culicover attribute the difference between these two verbs to the admissibility of a ‘bring about coercion’, which is compatible with *ask*, but not with *shout*.

There are even cases of obligatory implicit control. The German particle verb *an-ordnen* ‘order’ does not allow the addressee of the order to be mentioned explicitly. However, the implicit argument obligatorily controls the controllee.<sup>4</sup>

- (14) Obligatory implicit control  
 Sie<sub>i</sub> ordnete (\* den Mitarbeitern<sub>j</sub>) an, [ <sub>j</sub> die Eingangstüren um  
 she ordered the.DAT employees PT the entrance.doors at  
 20 Uhr zu schließen ].  
 8 o'clock to close.INF  
 ‘she ordered (her employees) to close the entrance doors at 8 p.m.’

Implicit control has often been mistaken as generic or arbitrary control (see also Landau 2000). Superficially, (15a) seems to involve arbitrary control, i.e. non-control (indicated by the index ‘arb’) due to the lack of a controller. (15b), however, reveals that the predicate has an implicit controller that may surface as PP.

- (15) a. Es ist leicht [ <sub>arb</sub> das Fahrrad-fahren zu er-lernen ].  
 it is easy the bicycle-ride.INF to PX-learn.INF  
 ‘it is easy to learn to ride a bike’  
 b. Es ist leicht für Kinder<sub>i</sub>, [ <sub>i</sub> das Fahrrad-fahren zu er-lernen ].  
 it is easy for children the bicycle-ride.INF to PX-learn.INF  
 ‘it is easy for children to learn to ride a bike’

Therefore, (15a) has to be interpreted as to involve an implicit generic controller (i.e. *Es ist leicht* [ <sub>j=gen</sub> [ <sub>j</sub> *das Fahrradfahren zu erlernen* ] ).

Another pattern of implicit control can be found with passivized control predicates in German and other languages, in which the external argument is existentially bound and not realized. Since German has impersonal passives, subject control verbs can be passivized, as shown in (16a). Subject control verbs

4 The nominalized form *Anordn-ung* allows the controller to be realized within an oblique phrase (headed by the preposition *an* ‘at’).

with an overt internal argument (e.g. *versprechen* ‘promise’) show a specific behavior when they are passivized: they have to undergo a control shift (compare (16b/c)). This is not necessary if the internal argument is left implicit as in (16d).

- (16) a. Es wurde versucht, [ \_ das Auto zu reparieren].  
 it was tried the car to repair.INF  
 ‘it was tried to repair the car’
- b. ?? Ihm<sub>i</sub> wurde versprochen, [ \_<sub>j</sub> das Auto zu reparieren].  
 he.DAT was promised the car to repair.INF  
 lit. ‘he was promised to repair the car’
- c. Ihm<sub>i</sub> wurde versprochen [ \_<sub>i</sub> das Auto reparieren zu  
 he.DAT was promised the car repair.INF to  
 dürfen].  
 be.allowed.INF  
 ‘he was promised to be allowed to repair the car’
- d. Es wurde versprochen, [ \_ das Auto zu reparieren].  
 it was promised the car to repair.INF  
 ‘it was promised to repair the car’

Since the patterns of implicit control do not differ from those of overt control, there is no reason to exclude implicit control from the core domain of complement control.

#### 2.4. Control in subject clauses

Control readings also occur in case of SOA-‘subjects’.<sup>5</sup> Many linguists who have dealt with control in subject clauses (e.g. Williams 1980, Manzini 1983) have assumed that there is no true control in subject clauses, which, however, is false as a general claim. One can find predicates that impose a control reading on a SOA-subject. Typically, these are predicates of Belletti & Rizzi’s (1988) *preoccupare*-class or Levin’s (1993) *amuse*-class, which denote the causation of an experience, hence, exhibit an internal experiencer argument; the higher SOA-argument denotes the stimulus. As (17a/b) show, *thrill* requires its internal argument to be identified with the controllee in the subject clause, independent of the position of the subject clause.

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5 There are two possibilities to define SOA-arguments as subjects: a) Pronominalization of the SOA-Argument yields the typical subject properties, e.g. ‘subject case’. b) Alternatively, a SOA-argument that is the highest argument in the argument structure - apart from the referential event argument - is analyzed as subject (= logical subject). I will use the latter criterion.

- (17) Control in subject clauses
- a. [<sub>i/\*j</sub> to win the prize] would thrill me<sub>i</sub>.
  - b. It would thrill me<sub>i</sub> [<sub>i/\*j</sub> to win the prize].

The same applies to German *ärgern* ‘annoy, make angry’. Its internal argument must control the covert subject of the subject clause, shown in (18a). It is not possible to interpret the controllee generically, as shown in (18b).<sup>6</sup>

- (18) a. [<sub>i</sub> bei der Stellen-planung nicht berücksichtigt worden zu sein]  
           at the job-planning not consider.PTC AUX.PTC to be.INF  
           ärgert Peter<sub>i</sub>.  
           annoy.3SG not  
           ‘it annoys Peter not to have been considered in the staff planning’
- b. \* [<sub>arb=gen</sub> die Wände mit Graffiti zu besprühen] ärgert Peter.  
           the walls with graffiti to spray.INF annoy.3SG P  
           intended reading: ‘it annoys Peter that people spray graffiti on the walls’

In general terms, these predicates have the simplified Semantic Form in (19): Regarding the experiencer argument *x*, the SOA-stimulus argument is both higher – in terms of CAUSE – and lower – in terms of the EXPERIENCE-relation.

- (19)  $\lambda x \lambda p$  CAUSE(*p*, EXPERIENCE(*x*, *p*))

That the SOA-argument is lower than the experiencer argument in terms of the EXPERIENCE relation may explain the unexpected obligatory control because this is the semantic structure found with SOA-objects. So far, no systematic studies have been carried out to exhaustively determine the class of predicates that show obligatory control in subject clauses.

### 3. The notion of obligatory control

An important prerequisite for the analysis of complement control is the characterization of obligatory vs. non-obligatory control. Generally, different mechanisms are assumed for these two types of control. One can observe the general tendency to analyze obligatory control as control proper, whereas non-obligatory control is resorted to ‘elsewhere strategies’. The various definitions take control relations as well as structural properties into account. There are different notions of obligatory control in the literature, depending on the perspective taken by the authors. The most influential characterization has been provided by Williams

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6 Generic readings can be either induced by a generic controller or by a generic interpretation in case of arbitrary control, especially if there is no indication that the infinitival clause refers to a specific event as in [<sub>arb=gen</sub> *smoking in the presence of babies<sub>i</sub>*] is dangerous for them<sub>i</sub>.

(1980); his rather strict characterization of obligatory control has been taken over by most syntacticians:

- (20) Williams' (1980:211f.) characterization of obligatory control
- a. A lexical NP cannot replace PRO.
  - b. The controller must c-command the controlled structure.
  - c. The controller must precede the controlled structure.
  - d. The controller must be thematically or grammatically unique.
  - e. The controller must be overt.

In general, obligatory control encompasses structures in which control is exhaustive and invariant and the controller is overt; moreover, the controllee must be covert. Thus, Williams excludes partial and split control as well as variable and implicit control from the notion of obligatory control. In addition, subject clauses are exempted from exhibiting obligatory control because the controller cannot c-command the controlled structure. Note that Williams' precedence requirement cannot be maintained; it is not even valid in English. The conditions in (20) do not apply in non-obligatory control.

Hornstein (1999) adds the following properties to the characterization of obligatory control: a) the controller must be local (i.e. an argument of the matrix predicate), b) the controllee (PRO) receives a sloppy reading under ellipsis of the verb complement as in (21), and c) the controllee receives a *de se* interpretation.

- (21) John<sub>i</sub> expects [<sub>i</sub> to win] and Bill<sub>j</sub> does too. (= expects [<sub>j</sub> to win])

Hornstein, who aims at a unification of control and raising in terms of syntactic movement, needs this rather strict notion of obligatory control because he wants to reduce obligatory control to structures that can be conceived of as movement of the control argument in various  $\theta$ -positions. All non-exhaustive control readings could not be accounted for, i.e. could not be derived under standard assumptions of movement. For all cases of non-obligatory control Hornstein assumes *pro* in the position of the controllee. This analysis, however, fails to explain the lack of disjoint readings in the relevant examples: partial or split control cannot be replaced by non-control readings.<sup>7</sup>

Jackendoff & Culicover (2003) deviate from the dichotomy of obligatory/non-obligatory control. They distinguish between free, nearly free and

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7 Hornstein's approach has been extensively criticized (Culicover & Jackendoff 2001, Jackendoff & Culicover 2003, Landau 2003, Kiss 2005). An argument that I would like to add is the following: The unification of raising and control under movement is not plausible for German; here, raising verbs show obligatory clause union, whereas control verbs only optionally allow clause union. Some control verbs do not allow clause union at all. A movement approach would predict that there should not be such structural differences.

unique (= obligatory) control: In contrast to unique control, free and nearly free control allow generic and split control. Free control includes non-local control and control by discourse or speech act participants, which is not allowed in nearly free control.

Landau (2000) analyzes all instances of local control as obligatory control, thus including partial and split as well as implicit control. I will follow his notion of obligatory control as local control and define complement control as follows:

(22) Definition of obligatory control (OC)

OC applies to structures in which a predicate  $P_1$  selects an SOA-argument and requires one of its (individual) arguments to be (improperly) included in the set of referents of an argument of the embedded predicate  $P_2$  heading the SOA-argument.

$[X_i P_1 (Y_j) [Z_k P_2 \dots]_{SOA}]$  with  $k \cap \{i, j\} \neq \emptyset$

The controllee  $Z$  may have  $X$  or  $Y$  as its controller – with the referential indices  $i, j, i+j, i+v, j+v$  or  $i+j+v$ . The definition in (22) is open as to how the control reading is obtained: either structurally or semantically/lexically. A verb like *hoffen* ‘hope’ requires a control reading with an infinitival complement; this, however, is not necessary with a finite complement. Therefore, (23a) is a case of structural control, i.e. control is induced by the structure of the clausal complement. I will discuss this more thoroughly in section 5. A predicate like *ermutigen* ‘encourage’ invariably requires a control reading, being, thus, a predicate of inherent control. There is a strong preference for infinitival complements; the finite complement is hardly acceptable. In any case, the only possible reading is a control reading, as indicated in (23d). Nominalized complements, which are not barred from realizing all arguments within the PP (*Peters Teilnahme am Rennen* ‘Peter’s participation in the race’), likewise only admit control readings, as shown in (23e).

(23) German: structural vs. lexical/inherent control

- a. Maria<sub>i</sub> hofft, [<sub>i</sub>/\*<sub>j</sub> im Lotto zu gewinnen].  
Mary hopes in.the lottery to win.INF  
‘Mary hopes to win in the lottery’
- b. Maria hofft, [daß ihr Sohn im Lotto gewinnt].  
Mary hopes that her son in.the lottery wins  
‘Mary hopes that her son will win in the lottery’
- c. Maria<sub>i</sub> ermutigt ihren Sohn<sub>j</sub> [<sub>j</sub>/\*<sub>i</sub>/\*<sub>k</sub> am Rennen teilzunehmen].  
Mary encourages her son at.the race participate.INF  
‘Mary encourages her son to participate in the race’

- d. ?? Maria<sub>i</sub> ermutigt ihren Sohn<sub>j</sub> (da-zu) [daß er<sub>j/\*k</sub> am Rennen  
 Mary encourages her son there-to that he at.the race  
 teilnimmt].  
 participates  
 ‘Mary encourages her son to participate in the race’
- e. Maria<sub>i</sub> ermutigt ihren Sohn<sub>j</sub> [zur <sub>j/\*i/\*k</sub> Teilnahme am  
 Mary encourages her son to.the participation at.the  
 Rennen].  
 race  
 ‘Mary encourages her son to participate in the race’

Another, though far less common pattern of instantiating a control reading can be found in Korean (see Gamerschlag, this volume). Here, utterance predicates select a finite clause marked by the complementizer suffix *-ko*. This suffix does not block modal markers on the embedded predicate. With a complement in the declarative mood, the utterance predicate does not restrict the reading of the embedded subject, as shown in (24a). Certain modal markers, however, only allow control readings. The volitional marker, for instance, only allows subject control readings, as indicated in (24b).

(24) Korean: control reading induced by modal marker

(Gamerschlag, this volume)

- a. Chelswu-nun<sub>i</sub> Yenghi-eykey<sub>j</sub> [ <sub>j/i/k</sub> caknyen-ey safari-yehayng-ul  
 C.-TOP Y.-DAT last.year-in safari-trip-ACC  
 hay-ss-ta-ko] malhay-ss-ta.  
 do-PAST-DECL-COMP say-PAST-DECL  
 ‘Chelswu told Yenghi that he/she/s.o. did a safari trip last year’
- b. Chelswu-nun<sub>i</sub> Yenghi-eykey<sub>j</sub> [ <sub>i/\*j/\*k</sub> naynyen-ey safari-yehayng-ul  
 C.-TOP Y.-DAT next.year-in safari-trip-ACC  
 ha-keyss-ta-ko] malhay-ss-ta.  
 do-VOL-DECL-COMP say-PAST-DECL  
 ‘Chelswu told Yenghi that he wants to go on a safari next year’

The control reading is determined by aspects of semantic compatibility between the matrix predicate and the modalized embedded predicate.

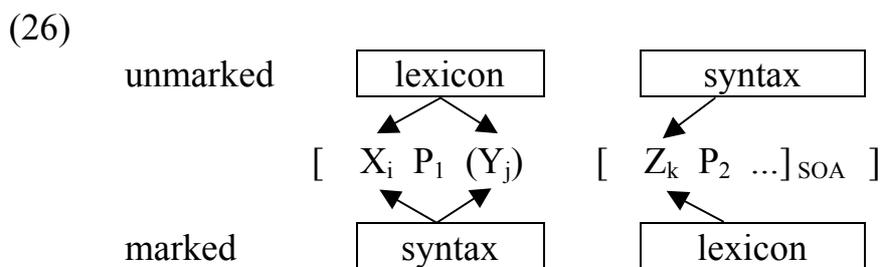
The definition in (22) does not preclude pronominal controllees (as long as their reference is restricted in the indicated sense) – either as free or bound pronouns, as illustrated in (25) for bound pronouns in the Mayan language Jakalteq and in the Oceanic language Mangap-Mbula.

- (25) a. Jakaltek (Grinevald Craig 1977:312)  
 xc-ach w-iptze [ \_ **ha**-munlayi]  
 ASP-2.N 1.E-force 2.E-work  
 ‘I forced you to work’
- b. Mangap-Mbula (Bugenhagen 1995:273)  
 aŋ-maŋga [ \_ be **aŋ**-po ruumu]  
 1SG-stand.up NONFACT 1SG-tie house  
 ‘I started to build the house’

Likewise, (22) does not exclude control into subject clauses. This semantic definition enhances cross-linguistic comparison of complement control. It aims at two goals: a) to determine the structures that induce local control (‘control-inducing structures’), and b) to determine the class of predicates that invariantly require control independent of the instantiated subordination structure (‘inherent control’). In languages such as German or English, in which many SOAA-taking predicates may select a control-inducing structure, there is a big class of predicates that exhibit control only in control-inducing structures.

#### 4. Syntax vs. lexicon

Complement control underlies an intricate interaction of lexicon and syntax. Whereas some approaches have emphasized the syntactic nature of complement control (e.g. Rosenbaum 1967, Williams 1980, Manzini 1983, Hornstein 1999), others have focused on the semantic influence of the various control predicates on the actual control relation (e.g. Comrie 1984, 1985, Foley & van Valin 1984, Farkas 1988, Panther 1993, van Valin 1993, Ružička 1999, Jackendoff & Culicover 2003). The interesting question is to which extent complement control is determined by syntax and to which extent by the lexical properties of the predicates involved. Cross-linguistic data suggest that in the unmarked case, the controller is determined by semantic/lexical properties of the control predicate, whereas the selection of the controllee is determined by syntax. In the marked case, however, the controller may be determined by syntax and the lexicon may influence the selection of the controllee. Both scenarios are sketched in (26).



The lexical nature of complement control is already evident in view of the fact that the potential control readings (exhaustive/partial/split control; subject vs.

object control) are a specific property of the respective predicate or its lexical class. Likewise, the admissibility of control shift is lexically determined: only a subclass of the control predicates may license control shift.

In the next two subsections I will discuss the role of lexicon and syntax for controller and controllee and deal with the scenarios displayed in (26). Though backward control and WH-control provide further evidence for the dual nature of control, I will postpone their discussion to section 7.

In this section I also want to take up the issue of the consequences of an exclusive syntactic account of control: If complement control were determined exclusively or to a very large extent by syntax, one would expect structural properties such as argument realization to play a crucial role for controller choice. I will show in 4.3 with examples from German that no strict correlations between argument realization and control can be established (see also Jackendoff & Culicover 2003 for arguments against a syntactic/configurational approach to control).

#### 4.1. The controllee

Since Keenan's (1976) seminal paper on subject properties, controllee choice has been taken as one of the central subject properties, i.e. the argument that is controlled in complement control is considered to be the subject. Languages mainly follow two patterns: the controllee corresponds to the highest-ranked argument of the embedded predicate ('logical subject') or to the argument that would receive the default linker (usually nominative/absolute). This distinction does not play such an important role in languages in which all highest-ranked arguments receive the default linker. However, languages that exhibit quirky case either show sensitivity to the argument role of the embedded predicate or to its linking pattern. Whereas German only allows arguments to be controlled that would receive the default linker (NOM), Icelandic (Andrews 1990) seems to allow quirky subjects to be controlled. (27b) shows that it is impossible in German to embed a dative-subject verb such as *grauen* 'dread' (see (27a)) under a control verb. Note that *hoffen* 'hope' does not require the embedded verb to be agentive; therefore, semantic inconsistencies between matrix and embedded predicate are ruled out as the explanation for the unacceptability of the example.

(27) German

- a. Mir graut vor der nächsten Prüfung.  
 I.DAT dread.3SG before the next exam  
 'I'm dreading the next exam'

- b. \* Ich hoffe [ \_ nicht vor der nächsten Prüfung zu  
 I hope.1SG Ø.DAT not before the next exam to  
 grauen].  
 dread.INF  
 ‘I hope not to be dreading the next exam’

(28b) shows that an Icelandic verb with an ACC-subject can be embedded under a control verb; it is the ACC-subject that is controlled.

(28) Icelandic (Andrews 1990:198)

- a. stelpuna vantar efni í ritgerðina  
 girl.DEF.ACC lacks material in paper.DEF  
 ‘the girl lacks material for the paper’
- b. stelpun/ \*stelpuna vonast [til að \_ vanta ekki  
 girl.DEF.NOM/ girl.DEF.ACC hopes toward to Ø.ACC lack not  
 efni í ritgerðina]  
 material in paper.DEF  
 ‘the girl hopes not to lack material for the paper’

The syntactic selection of the controllee argument is not strictly parameterized such that languages either only select the highest argument or the default linker argument. In a few languages, e.g. Tagalog (Kroeger 1993), both options are available in principle. Usually the highest (actor) argument is controlled – independent of the verbal voice morphology. Thus, the actor argument may be controlled in the actor voice (AV) as in (29a), corresponding to an overt NOM-argument, or it may be controlled in the instrumental (IV) or dative voice (DV) as in (29b)/(29c), corresponding to an overt GEN-argument. Note that the various voice markers render a specific verbal argument as most prominent; this argument receives the default linker: in (29a) the actor, in (29b) the theme and in (29c) the recipient.

(29) Tagalog (Kroeger 1993:39)

- a. binalak niya=ng [mag-bigay ng=pera  
 PERF.plan.OV 3SG.GEN=COMP AV-give GEN=money  
 sa=Nanay \_]  
 DAT=mother Ø.NOM  
 ‘he planned to give money to Mother’
- b. binalak niya=ng [i-bigay \_ sa=Nanay  
 PERF.plan.OV 3SG.GEN=COMP IV-give Ø.GEN DAT=mother  
 ang=pera]  
 NOM=money  
 ‘he planned to give money to Mother’

- c. binalak            niya=ng            [bigy-an            \_            ng=pera  
 PERF.plan.OV    3SG.GEN=COMP    give-DV    Ø.GEN    GEN=money  
 ang=Nanay]  
 NOM=mother  
 ‘he planned to give money to Mother’

Control of the NOM-argument is obligatory in the non-volitive mood, marked by *ma-*:

(30) Tagalog: control in non-volitive mood (Kroeger 1993:95)

- a. \* in-utus-an            ko            si=Maria=ng            [ma-halik-an            \_  
 PERF-order-DV    1SG.GEN    NOM=M=COMP    NONVOL-kiss-DV    Ø.GEN  
 si=Pedro]  
 NOM=P  
 ‘I ordered Maria to kiss Pedro’
- b. in-utus-an            ko            si=Maria=ng            [ma-halik-an  
 PERF-order-DV    1SG.GEN    NOM=M=COMP    NONVOL-kiss-DV  
 ni=Pedro    \_ ]  
 GEN=P            Ø.NOM  
 ‘I ordered Maria (to allow herself) to be kissed by Pedro’

As (30a) shows, it is not possible in the non-volitive mood to control a genitive argument; only control of NOM-arguments as in (30b) is possible; the dative voice renders the patient argument accessible to the default linker. Balinese, another Austronesian language, shows consistent NOM control (Wechsler & Arka 1998), whereas Madurese (Davies 2004) instantiates both actor and NOM control.

Tagalog also provides evidence that the selection of the controllee may be influenced lexically, which is strongly marked and which has to do with its two options for controllee choice. As mentioned above, Tagalog has a pattern of actor control (in the general case) and of NOM control if the embedded verb is realized in the non-volitive mood. Interestingly, some verbs allow both NOM and actor control, the former even in volitive mood (NOM control in (31a), actor control in (31b)):

(31) Tagalog: verbs allowing actor and NOM control (Kroeger 1993:97/98)

- a. nagpilit                    si=Maria=ng            [bigy-an            ng=pera  
 PERF.AV.insist.on    NOM=maria=COMP    give-DV            GEN=money  
 ni=Ben            \_ ]  
 GEN=Ben            Ø.NOM  
 ‘Maria insisted on being given money by Ben’

- b. nagpilit                      si=Maria=ng      [bigy-an    ng=pera       $\bar{\text{Ø}}$ .GEN  
 PERF.AV.insist.on    NOM=M=COMP    give-DV    GEN=money  
 si=Ben]  
 NOM=B  
 ‘Maria insisted on giving money to Ben’

Kroeger characterizes the verbs that allow both types of control as ‘orientation’ verbs in the sense of Sag & Pollard (1991), with *himukin* ‘persuade’ being the only exception. The potential selection of the controllee is thus lexically influenced to some extent, a phenomenon that needs further cross-linguistic study.

In languages that lack quirky or lexical case, voice operations may reveal the nature of the controllee: Does passivization, for instance, shift the controllee (the argument that would be realized with the default linker) or does it leave the controllee unchanged (e.g. the agent argument)? In the first case, there is NOM control, in the second actor control. The second option also implies that an oblique argument (or an argument that would surface obliquely) may be controlled. The Mayan language Tojolabal provides a case in question. Here, only intransitive verbs can be embedded under control verbs. Therefore, transitive verbs must be passivized in order to be embedded under a control verb. However, passivization does not change the control relation as it would, for instance, in English and most other languages; it is still the (implicit) agent that is controlled.

- (32) Tojolabal (Robertson 1980:226)
- a. h-moh-t-ay-a                      [ \_    way-el]  
 1SG.E-accompany-TR-TH-2SG.N      sleep-NOML  
 ‘I accompanied you to sleep’
- b. ha-kol-t-ay-on                      [ \_    y-ahn-a-he-el]  
 2SG.E-help-TR-TH-1SG.N              3SG.E-cure-TH-PASS-NOML  
 ‘you helped me cure him’

McCloskey & Sells (1988) discuss instances of control of oblique arguments in Irish. In contrast to the examples considered so far, the controllee is overt in Irish.

#### 4.2. The controller

The fact that controllers may be oblique or implicit, which affects the syntactic representation of the respective argument but not its semantic representation, suggests that the controller is determined semantically/lexically, given that cross-linguistically, semantically equivalent predicates show equivalent control patterns. Differences in the syntactic realization of the controller do not show strong effects (see also Jackendoff & Culicover 2003).

Further evidence for a semantic basis of control comes from control predicates in which the controller is a possessor argument; possessors do not c-command the controllees. Therefore, the control relation can be ruled out on syntactic grounds. The Mayan language Q'eqchi', for instance, exhibits complex predicates with body-part expressions in which the possessor (of the body part) functions as controller; it is marked by ergative agreement (E; see (33)). Similar expressions can be found in other Mayan as well as non-Mayan languages.

- (33) Q'eqchi' Maya: possessor controller (Kockelman 2003:30)
- |           |        |             |       |
|-----------|--------|-------------|-------|
| x-naq     | sa'    | in-ch'ool   | chalk |
| PERF-drop | inside | 1SG.E-heart | come  |
- 'I remembered to come' (lit. 'it has dropped into my heart to come')

These data imply that at least in some languages a purely syntactic account of control cannot be maintained.

The fact that many languages have lexically/semantically determined structures of complement control does not rule out languages in which control is determined exclusively in syntactic terms. There is sparse evidence for a syntactic organization of control. Syntactic controller choice has been claimed for the Austronesian language Kavalan and some closely related languages (Chang & Tsai 2001). Here, the controller must always be the actor subject, which implies that directive verbs cannot surface as object control verbs. According to Chang & Tsai, Kavalan chooses a strategy of causativization of the embedded predicate to maintain actor subject control. (34a) shows the respective pattern, in which the actor subject is identified with the newly added causer argument in the embedded clause; (34b) shows the pattern that would correspond to the familiar pattern of object control.

- (34) Kavalan (Chang & Tsai 2001:3)
- |    |   |        |              |              |       |                    |
|----|---|--------|--------------|--------------|-------|--------------------|
| a. | pawRat  | a      | tina-na      | tu           | suni  | [ _ pa-qaynəp]     |
|    | force   | NOM    | mother-3SG.P | ACC          | child | CAUS.AV-sleep      |
|    | 'his mother forces her child such that she causes him/her to sleep' |        |              |              |       |                    |
| b. | ??  | pawRat | a            | tina-na      | tu    | suni [ _ m-aynəp]. |
|    |   | force  | NOM          | mother-3SG.P | ACC   | child AV-sleep     |
|    | 'his mother forces her child to sleep'                              |        |              |              |       |                    |

(34a) suggests that the structure of directive control structures must be that of (35a); directive predicates cannot instantiate a structure such as (35b), evidenced by (34b).

- (35) a.  $\lambda P \lambda y \lambda x$  [FORCE(x,y) & CAUSE(x,P(y))]  
 b.  $\lambda P \lambda y \lambda x$  FORCE(x,y,P(y))

Unfortunately, the authors do not discuss cases in which causativization of the embedded predicate would be semantically inadequate: a) with negation of the matrix predicate, b) with non-implicative directive verbs such as ‘ask’. In these cases, Kavalan should resort to some other strategy.

A further case for a syntactic restriction on controllers is attested in the Mayan language Mam (England 1989): Here, control is restricted to controllers in the absolutive (= nominative) case if the matrix predicate selects an infinitival complement; this restriction does not apply to finite clausal complements. In (36a) the controller is an internal argument, indexed by N(OM)-agreement. With a controller indexed by E(RG)-agreement, only a finite clausal complement is possible; an infinitival complement is excluded (compare (36b/c)).

(36) Mam (England 1989:291f.)

- a. ma        tz'-ok        t-laj-o-'n                    Kyel    [tx'eem-al sii']  
       REC.PAST 3SG.N-DIR 3SG.E-oblige-TH-DIR Miguel cut-INF wood  
       ‘Miguel obliged him to cut wood’
- b. w-ajb'el-a            [chin        aq'n-a-an-a]  
       1SG.E-want-1SG 1SG.NOM work-THV- ANTIPASS-1SG  
       ‘I want to work’
- c. \* w-ajb'el-a            [aq'n-a-al]  
       1SG.E-want-1SG work-TH-INF

For a certain type of sentential complementation, Mam thus shows a correlation between argument linking and controller choice.

The literature on complement control does not reveal how wide-spread syntactic restrictions on controllers may be. There is no systematic evidence for such a pattern. The Kavalan case, however, already indicates the ‘expenses’ of syntactic control: In order to maintain certain structural configurations for control, lexical predicates have to be accommodated in order to exhibit the adequate syntactic potential. It is also likely that in languages with a purely syntactic control pattern, lexical control predicates are more homogeneous than in languages with semantically based control because in the latter no syntactic requirements restrict possible control predicate classes.

### 4.3. Control and argument realization

Unlike Mam, German (and other languages) do not show any strict correlation between argument linking and controller choice, which would be expected under a purely syntactic regulation of control. In order to understand the linking patterns of control predicates, it is helpful to distinguish between canonical and non-canonical linking patterns. According to the assumptions of *Lexical Decomposition Grammar* (Joppen & Wunderlich 1995, Wunderlich 1997, Stiebels 2002), canonical linking in German encompasses the linking patterns in

(37) with predicates that do not take an SOA-argument. The order of the case markers from left to right refers to the argument hierarchy lowest-medial-highest argument.

(37) Canonical linking in German

intransitive		$\lambda x$	$V(x)$	
		NOM		
transitive	$\lambda y$	$\lambda x$	$V(x,y)$	
		ACC NOM		
ditransitive	$\lambda z$	$\lambda y$	$\lambda x$	$V(x,y,z)$
		ACC DAT NOM		

If the lowest argument is an SOA-argument, one expects a STRUCT-NOM or STRUCT-DAT-NOM pattern in the canonical case, with STRUCT representing the structural, hence non-oblique, realization of the SOA-argument. If one of the arguments is realized obliquely, the pattern is non-canonical; the same is true for lexical case marking, e.g. DAT (like *gefallen* ‘like’) or ACC (like *reuen* ‘regret’) on the highest argument. (38) shows the canonical and some non-canonical patterns in German.

(38) Canonical vs. non-canonical linking patterns in German SOAA-taking predicates

a. bivalent

	$\lambda P$	$\lambda x$	$V(x, \lambda z P(z))$
canonical	STRUCT	NOM	
non-canonical	OBL	NOM	
	N.STRUCT	ACC	
	N.STRUCT	DAT	

b. trivalent

	$\lambda P$	$\lambda y$	$\lambda x$	$V(x,y, \lambda z P(z))$
canonical	STRUCT	DAT	NOM	
non-canonical	N.STRUCT	ACC	NOM	
	N.STRUCT	OBL	NOM	
	OBL	ACC	NOM	

I distinguish between three types of linking of SOA-arguments: structural, non-structural (N.STRUCT) and oblique. Non-structural SOA-arguments differ from oblique SOA-arguments in that the latter show an oblique marking in terms of an oblique correlative pronoun in the matrix clause (a compound of the deictic adverb *da* and a preposition) or of a correlative expletive in the matrix clause. German SOA-arguments are not case-marked directly because they are verbal projections.

(39) shows corpus examples of oblique SOA-arguments: (*dar-auf*) *achten* ‘pay attention to’, (*da-nach*) *streben* ‘strive for’, (*da-vor*) *bewahren* ‘protect from’, (*es*) *aushalten* ‘stand’. *Bewahren* is an object control verb, the others are subject control verbs.

(39) Oblique SOA-arguments [IDS-corpus]<sup>8</sup>

- a. ... die Kultur<sub>i</sub> muß dar-auf<sub>j</sub> achten, [ \_i sich nicht  
 the culture must there-on pay.attention REFL not  
 allzu unbedacht in die Arme der Wirtschaft zu  
 too.much thoughtlessly in the arms of commerce to  
 werfen]<sub>j</sub>.  
 throw  
 ‘Culture must pay attention not to throw itself into the arms of commerce that thoughtlessly’
- b. der Außenseiter, der<sub>i</sub> immer da-nach<sub>j</sub> strebte, [ \_i der Größte zu  
 the outsider who always there-after strived the greatest to  
 werden]<sub>j</sub> ...  
 become  
 ‘the outsider who always strived to become the greatest’
- c. Wie die Frau<sub>i</sub> es<sub>j</sub> aus-hält, [ \_i stundenlang im warmen  
 how the woman it out-hold.3SG for.hours in.the warm  
 Kostüm in glühender Sonne zu agieren]<sub>j</sub> ...  
 costume in heating sun to act  
 ‘how does the woman stand acting for hours in the burning sun in her warm suit’
- d. Wir wollen die Welt<sub>i</sub> doch nur da-vor<sub>j</sub> bewahren, [ \_i  
 we want the world but only there-in.front.of keep.from  
 zu einem einzigen großen ‘Bush’ zu werden]<sub>j</sub>. [Google]  
 to one unique great Bush to become  
 ‘we want to protect the world from becoming one unique great Bush’

Non-structural SOA-arguments do not exhibit oblique marking, but show another non-structural property: Non-structural SOA arguments cannot undergo restructuring (see also Sabel 1996, who has already discussed some aspects of argument linking and restructuring), which is also true for oblique SOA-arguments.<sup>9</sup>

German – as well as other languages – exhibits numerous predicates that take an oblique controller. Oblique controllers usually surface as PPs, as shown for

8 ‘IDS-corpus’ refers to the morphosyntactically annotated corpus (TAGGED) of the *Institut für Deutsche Sprache* in Mannheim.

9 In languages that exhibit object agreement, lack of agreement with an SOA-object may also be an indication for its non-structural character (besides clause union).

the verbs (*an jemanden*) *appellieren* ‘appeal at’ in (40a), (*auf jemanden*) *einwirken*: ‘have an effect on’ in (40b) and (*von jemandem*) *erwarten* ‘expect from’ in (40c). So far there is no evidence that a control reading is blocked by an oblique realization of the respective argument.

(40) Oblique controllers [examples from IDS-corpus]

- a. Er<sub>i</sub> appellierte an die Länder<sub>j</sub>, [□<sub>j</sub> mit den Forderungen maßvoll zu bleiben].  
 he appealed at the states with the demands modest to remain  
 ‘He appealed to the states to remain modest with their demands.’
- b. Die USA<sub>i</sub> wollen auf den Irak<sub>j</sub> einwirken, [□<sub>j</sub> seine Grenzen im Norden des Landes zu öffnen].  
 the USA want on the Iraq in-effect its borders in.the north the.GEN country.GEN to open.INF  
 ‘The US want to influence Iraq to open its borders in the north of the country.’
- c. Erwartet man<sub>i</sub> von uns<sub>j</sub>, [□<sub>j</sub> gesünder zu leben]?  
 expect.3SG one from us.DAT healthier to live  
 ‘Does one expect from us to live healthier?’

Regarding the control properties, almost no strict correlations between linking pattern and control can be observed. Among the polyadic verbs with the canonical STRUCT-DAT-NOM linking pattern, one can find subject control verbs with an optional DAT argument (e.g. *versprechen* ‘promise’) as well as object control verbs (e.g. *an-kreiden* ‘accuse of’, *ab-verlangen* ‘demand’, *an-lasten* ‘make responsible for’, *be-scheinigen* ‘certify’, *auf-tragen* ‘instruct’, *bei-bringen* ‘teach’, *ein-schärfen* ‘impress’, *vor-werfen* ‘reproach’). Therefore, the canonical pattern does not induce any preferred control pattern. Among the non-canonical patterns there is a strong preference for object control in the N.STRUCT-ACC-NOM pattern. However, if the SOA-argument is oblique, one can also find predicates with subject control (OBL-ACC-NOM: (*da-mit*) *abtun* ‘dismiss’, (*dar-aus*) *beziehen* ‘draw from’, (*da-mit*) *bedrohen* ‘threaten’, (*dar-an*) *setzen* ‘put energy into’).

Moreover, there is no correlation between the control reading and the structural or oblique status of the controller argument or the SOA-argument in German. The scattered data from other languages point into the same direction. The only correlation to be observed has to do with another syntactic property, namely clause union (restructuring): oblique SOA-arguments block restructuring, which also does not correlate with any control property because some control predicates allow restructuring, others do not (see Bech 1955/57, Sabel 1996, Wurmbrand 2001, Reis & Sternefeld 2004).

## 5. Control-inducing vs. control-neutral structures

If one takes into account the various possible types of subordination cross-linguistically available, one has to distinguish structures that ‘induce’ control (due to their need of argument identification) from those that do not. The need for argument identification is either motivated structurally, due to the deficiencies of argument linking (e.g. with infinitival or other infinite complements), i.e. not all arguments may be realized within the linking domain of the SOA-head, or semantically, due to the requirement of denoting coherent events; situational coherence is commonly established by shared participants in the various subevents of a complex event (e.g. with serial verbs). In the case of structurally motivated argument identification, argument raising is an alternative to control. The predicate *want*, for instance, may instantiate subject control as well as ‘object raising’ (another label being ACI or ECM construction). Generally, infinitival/infinite complements, serial verb constructions, and verb incorporation are structures of argument identification. In contrast, nominalizations and finite clauses do not require argument identification in most languages; all arguments may be realized overtly within the linking domain of the nominalized or finite head. I will call structures that require argument identification ‘control-inducing’ structures. The other structures of sentential complementation will be called ‘control-neutral’.

Cross-linguistically there is no strict correlation between the semantic class of the SOAA-taking predicate and its sentential complementation pattern. This is due to the fact that languages make use of different structures of sentential complementation. There are some tendencies which have been pointed out in the typological literature: Givón (1990), van Valin (1993), and Cristofaro (2003) – among others – have already proposed some correlations concerning the semantic coherence of SOA-arguments with their matrix predicate and the corresponding syntactic realization. Givón (1990) predicts that finite SOA-complements are less likely in case of argument sharing:

(41) Referential cohesion and event integration (Givón 1990:527)

The more the two events coded in the main and complement clauses share their referents, the more likely they are to be semantically integrated as a single event; and the less likely is the complement clause to be coded as an independent finite clause.

Givón ranks the syntactic realization of SOA-arguments according to their syntactic coherence as in (42). Predicate raising (i.e. co-lexicalization such as verb incorporation) is assumed to exhibit the strongest syntactic coherence.

- (42) Syntactic scale of SOA-arguments (Givón 1990:519)  
 Predicate raising > bare stem > infinitive > *for-to* > Subjunctive > indirect quote > direct quote

Givón assumes the following hierarchy of predicate classes, starting with predicates of ‘successful intended causation’ on top. The predicates high in the hierarchy are predicted to show co-lexicalization or higher syntactic coherence along (42).

- (43) Scale from manipulation to cognition (Givón 1990:530)  
 successful intended causation > attempted manipulation > preference/aversion > epistemic anxiety > epistemic certainty/uncertainty > utterance

Van Valin (1993) distinguishes structures of co-subordination, subordination and coordination for all three levels of nuclear, core, and clausal juncture, with structures of nuclear co-subordination exhibiting the strongest syntactic coherence and clausal coordination the weakest. He likewise aligns the hierarchy of syntactic coherence with a hierarchy of predicate classes, given in (44).

- (44) van Valin’s (1993:112) hierarchy of predicates in terms of semantic coherence  
 causative > aspectual > psych-action > purposive > jussive > direct perception > propositional attitude > cognition > indirect discourse ...

Like in Givón’s account, predicates high in the hierarchy are expected to show the strongest syntactic coherence. There are differences in the terminology and the ranking of the predicate classes. Cristofaro (2003) assumes the hierarchy of argument ‘deranking’ in (45), in which modals and phasals are ranked higher than causatives/manipulatives; ‘deranking’ refers to structural asymmetries found in comparison to independent clauses. Predicates high in the hierarchy are likely to make use of non-deranking means (verb incorporation, verb cluster etc.).

- (45) The Complement deranking-argument hierarchy (Cristofaro 2003)  
 Modals, Phasals > Manipulatives, Desideratives > Perception > Knowledge, Propositional attitude, Utterance

According to Cristofaro, this hierarchy also accounts for the presence/absence of tense/aspect/mood and agreement markers and the overt coding of arguments. The various approaches do not deal with complement control per se and in detail.

In this section I will discuss the various structures of sentential complementation in terms of their possible structural influence on control. I will first discuss the potential control-inducing structures (infinite/infinitival complements, verb

incorporation and serial verb constructions) and then the potential control-neutral structures (nominalization and finite complements). Finally, I will deal with switch-reference systems.

### 5.1. Infinite/infinitival complements

In many languages, infinitives/infinite verb forms are not able to license the realization of all arguments. Typically, the unmarked structural linker (nominative/absolute) cannot be assigned in an infinitival complement, although there are well-known counter-examples from Romance: These languages show an intricate variation concerning lexical subjects with infinitives: In Portuguese, lexical subjects are possible with inflected infinitives (Raposo 1987, Mensching 2000; see (46a)), whereas in Spanish adverbial PPs and subject clauses may show lexical subjects with infinitival heads. The intricacy of the phenomenon is displayed by the fact that subject clauses only allow postverbal lexical subjects (compare (46b/c)); this restriction does not apply with adverbial PPs (see (46d)). Mensching (2000) gives a good overview for the major Romance varieties.

(46) Portuguese/Spanish: lexical subjects in infinitival clauses  
(Mensching 2000:6f.)

a. Portuguese

a. para as mulheres chegar-\*(em)  
for the women arrive.INF-3PL  
'for the women to arrive'

b. Spanish

[Haber=se Julia presentado a las elecciones] fue un error.  
have.INF=REFL J present.PTC at the elections] was a mistake  
'the fact that Julia presented herself at the elections was a mistake'

c. \* [Yo presentar=me a las elecciones] fue un error  
1SG present.INF=1SG.REFL at the elections] was a mistake  
'the fact that I presented myself at the elections was a mistake'

c. [Para yo presentar=me a las elecciones] sería  
for 1SG present=1SG.REFL at the elections] be.COND.3SG  
necesario mucho dinero  
necessary much money  
'to present myself at the elections, a lot of money would be necessary'

The Romance data indicate that structural aspects of the syntactic context may influence the admissibility of lexical subjects in infinitival clauses.

Besides the infinitive there are other types of infinite complements, e.g. supine complements, which do not allow the use of the default linker in their linking domain. In Kolma Yukaghir, some predicates select supine complements. According to Maslova (2003), this pattern is restricted to structures of

subject control (including split control) and to cases in which the situation denoted by the SOA-argument is not implied (Maslova 2003). The controllee has to be covert. (47) is an example for split control.

- (47) Kolma Yukaghir: supine complement (Maslova 2003:415)
- |             |                        |                                   |                  |            |
|-------------|------------------------|-----------------------------------|------------------|------------|
| titte       | es'ie-ŋin <sub>i</sub> | qamie-d'ā-nu-l'el-ŋj <sub>j</sub> | [ <sub>i+j</sub> | kereke-n'e |
| their       | father-DAT             | help-DETR-IMPF-INFER-3PL.ITR      |                  | Koryak-COM |
| kimd'ī-din] |                        |                                   |                  |            |
| fight-SUP   |                        |                                   |                  |            |
- ‘they helped their father to fight with the Koryaks’

## 5.2. Languages without a finite-infinite distinction

Languages that lack a finite-infinite distinction on the morphological level typically lack control-inducing structures such as infinitival complements. However, they may exhibit verb incorporation or verbal compounding (see below). Among this type of language one can find isolating languages such as Chinese, but also polysynthetic languages such as Nahuatl. In Nahuatl, the embedded verb is inflected for tense/modality and agreement; therefore, the controllee is overtly expressed by subject agreement markers; however, there is generally no overt marker for 3SG subject agreement. In (48a/c) the embedded predicate is marked with future tense, in (48b) with optative mood. Note that Nahuatl is a pro-drop language.

- (48) Nahuatl
- |    |  |                                    |
|----|--|------------------------------------|
| a. | ō -k-ilkāw                             | [ki-čīwa-s]                        |
|    | ANT-3SG.A-forget.SST                   | 3SG.A-make-FUT                     |
|    | ‘he forgot to do it’                   |                                    |
| b. | ni-mits-λāλawtia                       | [in mā ši-k-čīwa]                  |
|    | 1SG.N-2SG.A-ask                        | DET OPT 2.IMP-3SG.A-do             |
|    | ‘I ask you to do it’                   |                                    |
| c. | ayāk mo-λāpaloā-ya                     | [in oksē om-m-īš-ketsa-s]          |
|    | nobody REFL-dare-IMPF                  | DET another DIR-REFL-eye-stand-FUT |
|    | ‘nobody dared to propose a substitute’ |                                    |

Some control predicates in Nahuatl may instantiate verb incorporation (see below); however, this pattern is not available as a general option for all control predicates.

In Chinese, control structures are distinguished from non-control structures by the lack of overt pronouns. Chinese is a pro-drop language as well. (49a) can only have the indicated control reading, whereas an overt pronoun as in (49b) is free in its reference. An inherent control predicate such as *bi* ‘force’ does not allow the controllee to be overt (see (49c/d)).

- (49) Mandarin Chinese (Yi-Chun Yang p.c.)
- a. Dahua<sub>i</sub> biaoshi [<sub>i</sub> wufa canjia zhe-ge-huodong].  
 D mean cannot participate this-CL-activity  
 ‘Dahua meant not to be able to take part in this activity’
- b. Dahua<sub>i</sub> biaoshi [ta<sub>i/j</sub> wufa canjia zhe-ge-huodong].  
 D mean 3SG cannot participate this-CL-activity  
 ‘Dahua meant that he cannot participate in this activity’
- c. Zhangsan<sub>i</sub> bi Lisi<sub>j</sub> [<sub>j</sub> xie gongke].  
 Z force L write homework  
 ‘Zhangsan forced Lisi to do the homework’
- d. \* Zhangsan<sub>i</sub> bi Lisi<sub>j</sub> [ta xie gongke].  
 Z force L 3SG write homework

Note that careful studies are necessary in languages without finite-infinite distinction in order to find out which predicates that take SOA-arguments only allow control readings.

### 5.3. Verb incorporation

In structures of verb incorporation a verb is morphologically integrated into another verb. The incorporated verb must share at least one argument with the incorporating verb, either semantically and/or structurally. In the following example from the Uto-Aztecan language Sonora Yaqui, the object control verb *su'utoja* ‘allow’ incorporates a transitive verb whose highest argument is identified with the internal argument of the higher predicate.

- (50) Sonora Yaqui: verb incorporation - control (Guerrero 2004)
- U tata#paare ili uusi-ta teopo-ta tu'ute-ne-su'utoja-k.  
 the priest.NOM little child-ACC church-ACC fix-EXPE-allow-PERF  
 ‘the priest allowed the child to clean the church.’

The only alternative to control in case of verb incorporation is raising, as shown in the following example from Sonora Yaqui:

- (51) Sonora Yaqui: raising (Guerrero 2004)
- a. Joan tuuka Tibu-ta siim-maachia  
 J yesterday T-ACC go-believe.PRES  
 ‘Juan believes Tibu to have left yesterday’
- b. Tibu tuuka siim-maachia-wa  
 T yesterday go-believe-PASS.PRES  
 ‘Tibu was believed to have left yesterday’

The accusative DP in (51a) is a semantic argument of *siim* ‘go’, but not of the matrix verb *maachia* ‘believe’. However, due to Functional Composition, it

becomes a structural argument of the resulting complex verb. If the complex is passivized as in (51b), the semantic argument of *siiim* is realized as subject.

Since verb incorporation (or verbal compounding) involves the ‘fusion’ of argument structures of the respective predicates, it can be structurally restricted if the resulting argument structure exhausts the linking resources of the language. However, Sonora Yaqui allows rather complex patterns of verb incorporation. In (52) the desiderative subject control verb incorporates a directive object control verb, which in turn incorporates a causativized transitive verb. Note that two internal arguments are left implicit. (52b) shows the simplified representation of (52a).

(52) Sonora Yaqui (Dedrick & Casad 1999:285)

- a. 'ám bít-tá'aa-tua-tebo-bae-n  
 them see-know-CAUS-order-want-PAST  
 ‘he wanted to give a command to cause (others) to know them by sight’
- b.  $\lambda y \lambda x \lambda u \lambda v \lambda s' \exists s \text{ WANT}[v, \text{ORDER}(v, u, \text{ACT}(u, \text{KNOW}(x,y)(s)))](s')$

Sonora Yaqui exhibits other patterns of sentential complementation as well, even with control predicates. Generally, polysynthetic languages are not confined to verb incorporation in case of complement control. Some predicates, however, are typical candidates for verb incorporation, especially aspectual and desiderative predicates. In Classical Nahuatl the verb *neki* ‘want’ may be used as an incorporating verb; in contrast, the desiderative predicate *elēwia* ‘want’ selects finite complements.

(53) Nahuatl

- a. ni-k-čīwa-s-**neki**  
 1SG.N-3SG.A-make-FUT-want  
 ‘I want to do it’
- b. ni-k-**elēwia** [in mā ni-pa?ti]  
 1SG.N-3SG.A-want DET OPT 1SG.N-recover  
 ‘I want to recover’

In Yupik and other Eskimo languages some suffixal verbs act like control verbs. These structures are specific instances of verb incorporation because the heads are bound forms that have to incorporate another predicate, typically a verb.

(54) Yupik (de Reusse 1994:60/62)

- a. yug-m anengagh-mnun negh-**sqe**-aa kayu  
 man-ERG older.brother-TERM.1SG/SG eat-ask.to-3SG/3SG fish  
 ‘the man asked my brother to eat the fish’

- b. esghagh-na-luku qinuyug-lghii yug  
 see-want-3SG/3SG be.sick-PTC.ITR person  
 ‘he wants to see the sick person’

#### 5.4. Serial verb constructions

Among the various patterns of serial verb constructions (SVC) one can also find structures of complement control – at least in some languages. Besides the typical SVC patterns such as resultatives (e.g. *hit-die*, *hit-kill*), directionals (e.g. *V-go*), argument-extending SVCs (e.g. instrumental *take-V*, beneficiary *V-give*), one also finds types in which an SOAA-taking predicate is the main functor of a SVC. Generally, SVCs require argument sharing between the predicates involved due to situational coherence of the subevents denoted by the predicates of the SVC. Argument sharing may affect the subject, or both subject and object, or the object of one verb and the subject of the other.<sup>10</sup> The required argument identification qualifies SVCs as control-inducing structures. Let me show this with data from the Amazonian language Tariana (Aikhenvald 2003), which exhibits a great variety of SVCs: Like regular SVCs, structures of complement control are monoclausal; the predicates exhibit the same subject agreement, even if the object of the first verb and not its subject is the shared argument as in (55c); here, the subject of the control verb is third person non-female, whereas the subject of the embedded predicate is first person, which is not reflected in verbal agreement.

(55) Tariana: SVC (Aikhenvald 2003:432/433/439)

- a. nese-pida [dhipa di-keta] diha malie-tiki-nuku  
 then-REP 3SG.NF.grab 3SG.NF-meet DET knife-DIM-TOP  
 ‘then he managed to grab the little knife’
- b. [di-ni di-mataRa-pidana] diha  
 3SG.NF-do 3SG.NF-leave-REM.PAST.REP he  
 ‘he stopped doing (this)’
- c. emite-tiki nu-na [dihpani di-adeta-naka]  
 child-DIM 1SG-OBJ 3SG.NF.work 3SG.NF-prevent-PRES.VIS  
 ‘the little boy is preventing me from working’

Languages differ as to which predicates may instantiate SVCs and whether they include SOAA-taking predicates.

<sup>10</sup> In case of ‘ambient serialization’ (Crowley 1987) the situational variables of the predicates are shared. This pattern does not play a role for complement control.

### 5.5. Nominalization

Nominalization is a major means of subordination in many languages or at least an important structural alternative to other structures of complementation (Noonan 1985, Comrie & Thompson 1985, Koptjevskaja-Tamm 1993). Depending on the linking potential of nominalized verbs, all arguments may be realized in the domain of the nominalized head. Therefore, argument identification is not required, at least in those languages without restrictions on the linking of the arguments of the nominalized verb. Note that the nominalization of intransitive verbs does not pose problems for nominal linking because the resulting nominal has the complexity of an inherently relational noun; polyadic predicates, however, may be problematic (see Stiebels 2006).

Turkish SOA-arguments are realized as noun clauses, i.e. clauses based on deverbal nouns. Argument linking is that of a ‘mixed category’, i.e. the highest argument is realized nominally (marked by genitive), the other arguments are realized verbally (marked by the usual verbal cases). Therefore, argument identification is not required. Turkish distinguishes three types of nominals: ‘factive’ nominals (*-dIK*) as in (56a), event nominals with possessor agreement (*-mE*) as in (56b), and event nominals without possessor agreement (*-mEK*) as in (56c/d), the latter also being called ‘infinitive’.

(56) Turkish (Kornfilt 1997:50/51/53)

- a. (ben) [Ahmed-in öl-**düğ**-ün]-ü duy-du-m  
 I A-GEN die-NOML-3SG.P-ACC hear-PAST-1SG  
 ‘I heard that Ahmet died’
- b. (ben) [Ahmed-in öl-**me**-sin]-den kork-uyor-du-m  
 I A-GEN die-NOML-3SG.P-ABL fear-PROG-PAST-1SG  
 ‘I was afraid that Ahmet would die’
- c. lütfen [ \_ pencere-yi aç-**mağ**]-ı unut-ma!  
 please window-ACC open-NOML-ACC forget-NEG  
 ‘please don’t forget to open the window’
- d. (ben) Ahmed-i [ \_ kaç-**mağ**]-a zorla-dı-m  
 1SG A-ACC flee-NOML-DAT force-PAST-1SG  
 ‘I forced Ahmet to flee’

Control predicates typically instantiate the ‘infinitival’ construction as in (56c/d). SOA-arguments realized with agreeing deverbal nouns as in (56b) as well as factive nominals as in (56a) do not induce control readings (see also Słodowicz this volume). Gamerschlag (this volume) demonstrates the control-neutral character of Korean nominalized complements.

Whereas in most languages, structures of nominalization follow the control-neutral pattern of Turkish and Korean, Q’eqchi’ and possibly other Mayan languages exhibit nominalized clausal complements that do not allow all

inherited verbal arguments to be overtly realized because structural linking is restricted here to possessor (ergative) agreement; hence, they are control-inducing in case of polyadic predicates. In the following example, the ergative possessor agreement (E) indexes the lower argument, i.e. the theme *li kabl* ‘the house’; the higher argument has to be controlled.

- (57) Q'eqchi': infinite transitive complements (Kockelman 2003:32)
- |                 |          |                  |     |       |
|-----------------|----------|------------------|-----|-------|
| n-in-lub        | [chi     | x-mesunk-il      | li  | kabl] |
| PRES-1SG.N-tire | OBL.COMP | 3SG.E-sweep-NOML | the | house |
- ‘I’m tired of sweeping the house’

## 5.6. Finite complements

Finite complements are generally control-neutral, although there may be exceptions (see below). They do not require argument identification in structural or semantic terms. A rather common finite structure instantiated by control verbs are so-called subjunctive complements, already discussed by Noonan (1985). The notion ‘subjunctive’ is rather heterogeneous; it may apply to non-indicative verbal categories (e.g. in Spanish or Hungarian) or to specific complementizer forms (e.g. in some Balkan languages, where the verbs do not display a distinct subjunctive mood).

Generally, subjunctive complements do not induce control, which I will show with data from the Balkan languages; in these languages the subjunctive has replaced the infinitive partially or completely. If one compares desiderative predicates, which do not require control, with directive predicates, which show inherent control, one can see that subjunctives may occur with non-control readings if they are compatible with the matrix predicate. This is illustrated with data from Albanian, in which the subjunctive has replaced the infinitive completely: a desiderative predicates and its readings are given in (58a), a directive verb is given in (58b).

- (58) Albanian (Noonan 1985:67)
- |    |   |            |         |                      |                |         |                |
|----|---|------------|---------|----------------------|----------------|---------|----------------|
| a. | Njeriu <sub>i</sub>                             | deshi      | [ta     | _i/j                 | vjedhë         | pulën]  |                |
|    | man   | wanted.3SG | COMP    |                      | steal.3SG.SUBJ | chicken |                |
|    | ‘the man wanted to steal the chicken’/          |            |         |                      |                |         |                |
|    | ‘the man wanted him to steal the chicken’       |            |         |                      |                |         |                |
| b. | Gruaja <sub>i</sub>                             | e          | detyroi | njeriun <sub>j</sub> | [ta            | _j      | vjedhë         |
|    | woman   | PRO        | forced  | man.ACC              | COMP           |         | steal.3SG.SUBJ |
|    | pulën]  |            |         |                      |                |         |                |
|    | chicken   |            |         |                      |                |         |                |
|    | ‘the woman forced the man to steal the chicken’ |            |         |                      |                |         |                |

Serbian and Croatian differ with respect to the use of the subjunctive. Both share the preference for subjunctive complements with directive (object control)

verbs, as shown in (59a). Whereas Croatian favors the infinitival structure in (59b) in case of subject control, Serbian favors the subjunctive structure in (59c).

(59) Serbo-Croatian (Stojanović & Marelj 2004:445f.)

- a. Jovan je naredio Mariji [da \_ dodē /  
 J AUX ordered.PART M.DAT SUBJ.COMP \_ come.3SG/  
 \*doći]  
 come.INF  
 ‘Jovan has ordered Marija to come’
- b. Marija<sub>i</sub> hoće [\_<sub>i</sub>/\*<sub>j</sub> spavati]  
 M want.3SG sleep.INF  
 ‘Marija wants to sleep’
- c. Marija<sub>i</sub> hoće [da \_<sub>i</sub>/ spava]  
 M want.3SG SUBJ.COMP sleep.3.SG  
 ‘Marija wants (someone) to sleep’

The two languages likewise differ regarding their preferences with subject control verbs such as ‘try’. In Serbian (see (60a)), again the subjunctive is used.

- (60) a. Serbian (Stojanović & Marelj 2004:446)  
 Jovan<sub>i</sub> pokušava [da \_<sub>i</sub> vozi bicikl]  
 J try.3SG SUBJ.COMP ride.3SG bike  
 ‘Jovan is trying to ride a bike’
- b. Croatian  
 Jovan<sub>i</sub> pokušava [\_<sub>i</sub> voziti bicikl]  
 J try.3SG ride.INF bike  
 ‘Jovan is trying to ride a bike’

If a language displays a control-inducing as well as a control-neutral structure, there may be a division of labor between the two structures – at least with some predicate classes. In these cases the control-neutral structure encompasses readings not subsumed by the control-inducing structure, namely the disjoint reference readings (see Comorovsky 1985, Kempchinsky 1987, Zec 1987, Ruwet 1991, Farkas 1992, Landau 2004). In Spanish as well as most other Romance languages, control readings are realized with infinitival complements as in (61a). The control reading is blocked in the subjunctive, which, then, has the disjoint reference reading only as in (61b).

- (61) Spanish  
 a. quiero<sub>i</sub> [\_<sub>i</sub> venir]  
 want.1SG come.INF  
 ‘I want to come’

- b. \* quiero [que venga yo]  
 want.1SG COMP come.1SG.SUBJ 1SG  
 lit. 'I want that I come'

Of course, this division of labor only makes sense for predicates that are not inherently bound to control readings; inherent control predicates are incompatible with disjoint reference readings.<sup>11</sup>

The predicate classes that are most likely to occur with subjunctives (or irrealis finite complements) are desideratives and directives, although the former do not belong to the inherent control predicates, whereas the latter do. The language-specific inventory of sentential complementation structures, however, may influence the selection of complementation structures. In the Oceanic language North-East Ambae (Hyslop 2001) directive predicates are very small in number and instantiate SVCs. Here, implicative verbs like 'try' select irrealis complements:

- (62) North-East Ambae (Hyslop 2001:404)  
 na=ni vei lehi [vo na=ni geni=e]  
 1SG.N=IRR do see say 1SG.N=IRR eat=3SG.A  
 'I'll try to eat it'

In Mangap-Mbula, an Oceanic language of Papua New Guinea, both directive and implicative predicates select non-factual complements, as shown in (63). Here, SVCs, although being present, do not include the typical classes of control predicates.

- (63) Mangap-Mbula (Bugenhagen 1995:272f.)  
 a. ti-ruutu yo be aŋ-la som  
 3PL-prevent 1SG.ACC NON.FACT 1SG-go NEG  
 'they prevented me from going'  
 b. i-toombo be i-kot mbun kini  
 3SG-try NON.FACT 3SG-cover debt 3SG.LOC  
 'he tried to repay his debt'

That finite clauses are not control-neutral per se is evidenced by Q'eqchi' and some other Mayan languages. The non-control reading is triggered by the complementizer *naq*, which may be regarded a switch-reference marker.<sup>12</sup> (64a) shows a desiderative predicate with a finite clause in control reading. The disjoint reading requires the complementizer *naq*, as shown in (64b). Note that

11 The disjoint reference effect does not occur with epistemic verbs such as *doubt* etc.

12 The difference between (64a) and (64b) seems to be one of IP vs. CP (pointed out by Aissen p.c.). Lacking further evidence, it is not clear to me whether these domains could be characterized as control-inducing vs. control-neutral.

the matrix predicate may also select an infinitival complement as in (64c), which only allows the control reading.

(64) Q'eqchi' (Kockelman 2003:28/30; Berinstein 1985:257)

- a. n-inw-aj [t-in-xik sa' li k'ayil]  
 PRES-1SG.E-want FUT-1SG.N-go inside the market  
 'I want to go to the market'
- b. ta-cu-aj [naq t-at-xik]  
 TMP-1.E-want COMP.DS FUT-2.N-go  
 'I want you to go'
- c. n-inw-aj [xik sa' li k'ayil]  
 PRES-1SG.E-want go into the market  
 'I want to go to the market'

### 5.7. Switch-reference

Switch-reference systems are orthogonal to the dichotomy of control-inducing vs. control-neutral structures because the respective markers – as important means of reference-tracking in verbal chains/sequences or in the integration of verbal adjuncts – establish referential readings. Usually, they indicate whether the subject of the respective predicate is co-referential with the subject of some higher predicate. This property immediately raises the question as to what extent switch-reference markers are used in complements of control verbs in order to encode control relations. Subject control verbs should instantiate complements with same-subject markers (SS), object control verbs complements with different-subject markers (DS). Quite interestingly, switch-reference markers are rarely attested cross-linguistically in structures of complement control.

Hale (1992) has shown that two relatively related languages may differ as to whether they instantiate switch-reference in complement control. In Hopi, switch-reference markers may occur in complement control. (65a) is an instance of subject control, (65b) an instance of 'object raising', (65c) an instance of object control and (65d) an instance of clause sequencing with identical subjects.

(65) Hopi: switch-reference system (Hale 1992:51/53/67/53)

- a. Nu' 'as [\_ kweewa-t tu'i-ni-qa-y] naawakna  
 1SG PRT belt-ACC buy-FUT-NC-ACC.SS want  
 'I want to buy a belt'
- b. Nu' [i-pava 'inu-ngam kweewa-t yuku-ni-qa-t]  
 1SG my-brother me-for belt-ACC make-FUT-NC-ACC.DS  
 naawakna  
 want  
 'I want my brother to make me a belt'

- c. Taaqa tiyo-t [ \_ kaway-mu-y 'oyato-ni-qa-t] 'ayata  
 man boy-ACC horse-PL-ACC put-FUT-NC-ACC.DS send  
 'the man sent the boy to put the horses back'
- d. Pam wu'ti noes-q (puu') mi taaqa pitu  
 that woman eat-DS then that man arrive  
 'the woman ate and (then) the man arrived'

In the related language Miskitu, the switch-reference markers are not used with control verbs. Instead, infinitival complements are chosen.

(66) Miskitu (Hale 1992:54/ibid./65/66)

- a. yang [witin nani aisi-n] wal-ri  
 1SG they PL speak-DS.3 hear-PAST.1  
 'I heard them speak'
- b. yang sula kum kaik-ri plap-an  
 1SG deer a see-DS.1 run-PAST.3  
 'I saw a deer and it ran'
- c. yang [ \_ Ulwa lan tak-aia] trai kaik-ri  
 1SG Ulwa learn become-INF try see-PAST.1  
 'I tried to learn Ulwa'
- d. [ \_ diara nani atk-aia] ai-wi-n  
 thing PL buy-INF me-tell-PAST.3  
 'he told me to buy things'

The switch-reference markers are used in 'object raising' as in (66a) and in clause sequencing as in (66b), but not in subject control as in (66c) or object control as in (66d).<sup>13</sup>

In Imbabura Quechua control verbs select structures marked with switch-reference markers. Example (67a) shows that the subject control verb *muna* 'want' selects a complement marked with the same-subject marker *-ngapaj*. If the verb *ayuda* 'help' is used as a control verb as in (67b), it embeds a complement with the different-subject marker *-chun* because it behaves as an object control verb.<sup>14</sup>

(67) Imbabura Quechua (Jake 1985:178/181)

- a. [ can [nuca-ta ayuda-wa-ngapaj] muna-na-ta] cri-n  
 2SG 1SG-ACC help-1SG.A-SS want-FUT-ACC think-3  
 'he thinks that you want to help me'

13 Hale provides an example from Miskitu in which the verb for 'begin' is used with a switch-reference marker on its complement. Hale leaves the question open whether this verb is a raising or a control verb.

14 Note that the structure in (67b) seems to be an instance of backward control: the controller is realized within the complement clause of *ayuda*.

- b. [[ can yachachi-wa-chun] ayuda-ngapaj] muna-n  
 2SG teach-1SG.A-DS help-SS want-3  
 ‘he wants to help you teach me’

Scattered instances of switch-reference can also be found in Kolma Yukaghir, as Maslova (2003) has shown: It is restricted to patterns of subject control (hence, it occurs only with SS markers).

- (68) Kolma Yukaghir: switch-reference (Maslova 2003: 414)  
 [čomōlben qaŋī-nu-t] kis'ie-l'el-ŋi  
 elk pursue-IMPF-SS.IMPF learn-INFER-3PL.ITR  
 ‘they learnt how to pursue elk’

The fact that many languages with elaborated devices of switch-reference marking do not use these structures systematically in case of complement control suggests that switch-reference marking seems to be redundant and that the control reading is already determined lexically to some extent. Switch-reference markers could, however, be relevant in encoding control shifts, i.e. marked control readings. So far, I have found evidence for the encoding of control shifts by means of a switch-reference marker only in *Tukang Besi*, for which Donohue (1999) provides a few examples. Further research is needed to check whether other languages allow similar patterns.

## 6. Lexical classes

The classes of control predicates proposed in the literature serve various functions. The classification by Sag & Pollard (1991) and Pollard & Sag (1994) mainly distinguishes between predicates of subject control and predicates of object control: *influence-verbs* (object control, e.g. *persuade, appeal*), *commitment-verbs* (subject control, e.g. *promise, try*) and *orientation-verbs* (subject control, e.g. *want, hate*). The controller corresponds to a class-specific thematic role (INFLUENCED, COMMITTOR, EXPERIENCER).

- (69) a. *try*: [COMMITTOR, SOA-ARG]  
 b. *persuade*: [INFLUENCE, INFLUENCED, SOA-ARG]  
 c. *want*: [EXPERIENCER, SOA-ARG]

Petter (1998) distinguishes between obligatory subject and obligatory object control and intransitive and transitive verbs of variable control. Landau (2000) aims at a classification that singles out predicates of potential partial control – in contrast to predicates that are restricted to exhaustive control.

All these classifications do not take into account whether the control predicates select structures that induce control or whether they also allow for control-neutral structures. A classification of control predicates should aim at a

distinction of predicates that invariably trigger control readings irrespective of the type of sentential complementation, those that only license structures that induce control, and those that do not allow neither inherent nor structural control.

Verbs/predicates are usually not restricted to one pattern of subordination but may allow for various subordination patterns (e.g. allowing a control-inducing structure such as an infinitival clause and a control-neutral structure such as a nominalized complement). Regarding the clausal selection pattern one may distinguish three types, ignoring differences between the various types of control-inducing or control-neutral structures. First, there may be predicates that only select control-inducing structures. Secondly, there may be predicates that allow control-inducing as well as control-neutral structures. Thirdly, there may be predicates that are restricted to control-neutral clausal complements. Control-neutral structures present the test case regarding the lexical control property of the matrix predicate: If a control reading is obligatory even in this case, the matrix predicate must be an inherent control predicate. If there is no obligatory control reading but free reference of the embedded subject, the matrix predicate does not show any inherent control. The types of sentential complementation and their control readings yield five lexical predicate classes.

(70) summarizes the interesting classes of predicates. ‘√’ indicates that the relevant structure is selected by the predicate. [+control] and [-control] denote whether a control reading is required despite the control-neutral character of the SOA-argument.

(70) SOAA-taking predicates

	control-inducing	control-neutral
Strong inherent control	√	*
Weak inherent control	√	√ [+control]
Structural control	√	√ [-control]
Marked inherent control	*	√ [+control]
Non-control	*	√ [-control]

Hence, a weak inherent control predicate is one that allows control-inducing as well as control-neutral clausal complements, but instantiates a control reading in any case. Marked inherent control occurs if the matrix predicates only selects a control-neutral clausal complement despite its inherent control property. I will discuss the various classes more thoroughly below.

Note that the class of structural control predicates could be further differentiated: It may be the case that the readings available in the control-neutral structure have to be complementary to the readings in the control-inducing structure, hence disjoint ([+disjoint]), which has been described as

‘obviation’ effect (Farkas 1992 and the references cited above), or the control-neutral structure is not subject to the disjoint reference effect.

A more fine-grained analysis of control predicate classes could further distinguish between predicates that take SOA-‘objects’ and those that take SOA-‘subjects’. And although the status of the SOA-argument as structural or non-structural/oblique does not seem to play a role for control, but possibly could, one could in addition distinguish between canonical and oblique SOA-arguments. The distinction between subject/object/variable control and between exhaustive/partial/ split control would yield further classes, which, however, would result in a rather complex lexical cross-classification. Therefore, I will confine myself to the classes in (70).

Languages that lack control-inducing structures only distinguish between inherent control predicates and non-control predicates.

### 6.1. Strong inherent control

The class of predicates that only select control-inducing structures is often rather small; many inherent control predicates often allow at least a nominalized SOA-complement as control-neutral structure. Typical instances of this class are phasal and modal verbs, although it has to be shown that they are true control verbs, not just raising verbs. Likewise, implicative verbs like ‘dare’, ‘manage’ or ‘try’ are among the predicates that most likely exhibit strong inherent control.

Among the Polish control verbs that only select infinitival complements are *przestać* ‘quit’, *śmieć* ‘dare’, *spróbować* ‘try’, *zdołać* ‘manage’, *zwyknąć* ‘use to’ (see Słodowicz 2006). In German, *sich weigern* ‘refuse’, *sich erdreisten/erkühnen* ‘have the audacity to do/dare’ are among the few predicates that are restricted to infinitival complements and do not allow nominalized complements; *fort-fahren* ‘continue’, *an-fangen* ‘start’, *wagen* ‘dare’, *sich an-gewöhnen* ‘get used to’, *leicht sein* ‘be easy’, *schwierig sein* ‘be difficult’, *ver-lernen* ‘unlearn’, for instance, all allow a nominalized complement instead of an infinitival complement and, thus, belong to the following class of weak inherent control predicates.

In Q'eqchi' (Kockelman 2003), aspectuals (e.g. *choyok* ‘finish’, *yoobank* ‘begin’), implicatives like *yalok* ‘try’ or *kanabank* ‘desist from’, movement verbs, some psych-predicates (e.g. *lubk* ‘tire of’, *jiq'e'k* ‘choke on’, *xutaanak* ‘be ashamed’), and manipulative predicates constitute the class of strong inherent control predicates, licensing only infinitival or nominalized complements, the latter being control-inducing structures unexpectedly.

### 6.2. Weak inherent control

If nominalized complements are taken into consideration, many inherent control predicates fall into the class of weak inherent control predicates because they

license nominalized complements. This is shown in (71a) for *auffordern* ‘ask/request’ and *überreden* ‘persuade’. Non-control readings are not available, as shown in (71b).

- (71) a. Sie haben ihn zum Verzicht auf das Mandat aufgefordert/  
 they have him to.the renunciation on the mandate ask.PTC/  
 überredet.  
 persuade.PTC  
 ‘they have asked/persuaded him to renounce his mandate’
- b. \* Sie haben ihn zu Marias Verzicht auf das Mandat  
 they have him to Mary’s renunciation on the mandate  
 aufgefordert/ überredet.  
 ask.PTC/ persuade.PTC  
 ‘they have asked/persuaded him that Mary renounces her mandate’

However, there is a difference between nominalized complements and finite complements; the latter are often excluded with inherent control predicates. Polish has inherent control verbs that may take a nominalized complement, but not a finite complement (e.g. *obiecać* ‘promise’, *zdażyć* ‘manage’, *nakazać* ‘order’, *zakazać* ‘forbid’; see Słodowicz 2006).

In German, one only finds scattered instances of finite complements with inherent control predicates such as directive verbs. (72) is an example for *überreden* ‘persuade’ (the only instance in the TAGGED corpus of the IDS).

- (72) Nachdem Mathias Stätter die angeschlossenen Fahrer der Taxi-Vereinigung **überredet** hatte, **daß** doch jeder mit 1000 Mark zur Anschaffung des Datenfunk-Systems beitragen solle...  
 ‘After Matthias Stätter had persuaded the drivers of the taxi organization that everybody should contribute 1000 German marks to the purchase of the radio system’

Note that one has to check carefully if the predicate that occurs with a finite complement has the meaning related to the control variant. German control predicates such as *versprechen* ‘promise’ or *überzeugen* ‘convince’ have additional meanings that do not require control. *Versprechen* can have an epistemic reading in which the subject referent has strong evidence for a certain state of affairs (*versprechen* = ‘know for sure’; see (73)); *überzeugen* can also mean that the subject referent tries to invoke a certain mental state in the object referent. In contrast, *überreden* ‘persuade’ can only mean ‘talk someone into doing something’; there is no meaning shift available that might license non-control readings.

- (73) Natürlich kann niemand **versprechen**, **daß** die Ex-DDR in diesem oder im nächsten Jahr einen rasanten wirtschaftlichen Aufschwung nimmt.

[IDS-corpus]

‘Of course, no one can promise (= know for sure) that there will be a rapid boom in the former GDR in this or the following year.’

In Spanish (and some other Romance languages), directive verbs allow infinitival as well as subjunctive complements, which are far more common than finite clauses with inherent control predicates in German. The subjunctive complements of these predicates can only occur with a control reading.

- (74) Spanish

a. te            prohíbo        [que    entres]  
 2SG.ACC    forbid.1SG    COMP    enter.2SG.SUBJ

‘I forbid you that you come in’

b. te<sub>i</sub>            prohíbo        [ \_<sub>i</sub>    entrar]  
 2SG.ACC    forbid.1SG                    enter.INF

‘I forbid you to come in’

### 6.3. Marked inherent control

In some languages directive verbs with an inherent control reading show an unexpected selection pattern: they select a subjunctive complement even though the respective language has a control-inducing structure (e.g. infinitive). This can be observed, for instance, in Hungarian. Most directive verbs (e.g. *meg-kér* ‘ask’, *kényszerít* ‘force’, *meg-győz* ‘convince’) select a subjunctive; the infinitive is impossible.

- (75) Hungarian (Farkas 1988:91, Beata Gyuris, p.c.)

a. János<sub>i</sub> meg-győz-te                    Mariá-t<sub>j</sub> [hogy    \_<sub>j</sub>/\*<sub>i</sub>/\*<sub>k</sub>    men-jen/  
 J            PV-convince-PAST.3SG    M-ACC    COMP                    go-3SG.SUBJ/  
 \*men-ni    vel-e]  
 go-INF        with-3SG

‘János convinced Mary to go with him’

b. Péter<sub>i</sub> meg-kér-te                    Mariá-t<sub>j</sub> [hogy    \_<sub>j</sub>/\*<sub>i</sub>/\*<sub>k</sub>    vegye            meg  
 P            PV-ask-PAST.3SG    M-ACC    COMP                    buy.SUBJ.3SG    PV

az    enivaló-t]  
 the    food-ACC

‘Peter asked Mary to buy the food’

The Nilotic language Lango shows the same pattern: infinitival complements occur in case of subject control, subjunctive complements in case of object control verbs as in (76b).

(76) Lango (Noonan 1985:67)

- a. dákó àmittò [ \_ ryèttò kàl]  
 woman want.3SG winnow.INF millet  
 ‘the woman wants to winnow the millet’
- b. dákó òdiò lócà [ ní \_ 'ryèt kàl]  
 woman pressed.3SG man COMP winnow.3SG.SUBJ millet  
 ‘the woman pressed the man to winnow the millet’

Why do these languages show this marked pattern to encode inherent control? Recall that the same class of predicates may select a subjunctive in Spanish and other Romance languages as well; there, however, the infinitival complement is possible. The first speculation might be that the subjunctive encodes some kind of unrealized event, which is one of the characteristics of the complements of these predicates. However, this raises immediately the question why desiderative predicates do not show the same strong preference for subjunctive complements in these languages.

There are two observations that may provide an alternative explanation. The first observation concerns the fact that Korean utterance predicates are coerced into directive predicates if the complement clause is marked by imperative (see Gamerschlag, this volume), as the following example illustrates. Without the additional modal morphology, the predicate does not necessarily instantiate a control reading (see (77a)); the imperative requires an object control reading, as shown in (77b).

(77) Korean (Gamerschlag, this volume)

- a. Chelswu-nun<sub>i</sub> Yenghi-eykey<sub>j</sub> [ \_<sub>i/j/k</sub> caknyen-ey safari-yehayng-ul  
 C.-TOP Y.-DAT last.year-in safari-trip-ACC  
 hay-ss-ta-ko] malhay-ss-ta.  
 do-PAST-DECL-CMP say-PAST-DECL  
 ‘Chelswu told Yenghi that he/she/s.o. did a safari trip last year.’
- b. Chelswu-nun<sub>i</sub> Yenghi-eykey<sub>j</sub> [ \_<sub>j/\*i/\*k</sub> naynyen-ey safari-yehayng-ul  
 C.-TOP Y.-DAT next.year-in safari-trip-ACC  
 ha-la-ko] malhay-ss-ta.  
 do-IMP-CMP say-PAST-DECL  
 ‘Chelswu told Yenghi to go on a safari trip next year.’

The second observation concerns the interesting fact that the subjunctive in Hungarian and Lango shows a strong overlap with the imperative: In Hungarian, they form a common verbal paradigm, the example (78a) represents a subjunctive (with complementizer) and an imperative (without complementizer). In Lango the imperative corresponds to the subjunctive stem (leaving out



## (79) Grammaticalization

- a. I say to him: “you must go”/“go!”
- b. I say to him, he must go.
- c. I tell him he must go
- d. I tell him to go.

Further typological research must reveal how widespread the syncretism of subjunctive and imperative is in cases in which directive predicates instantiate marked inherent control.<sup>17</sup> In view of the typological literature it is remarkable that directive verbs, which are considered to be rather likely candidates for syntactically coherent structures (see Givón’s (1990) and Cristofaro’s (2003) hierarchies in (43) and (77)), may deviate from the expected pattern.<sup>18</sup> For theoretical approaches such as Hornstein’s (1999), the fact that excellent candidates for obligatory control do not instantiate a structure that is used in subject control and in raising is likewise unexpected.

There may also be other instances of marked inherent control. Słodowicz (2006) reports that Polish *odmówić* ‘refuse’ and some other predicates only select a nominalized instead of an infinitival complement. Since this pattern seems less systematic, it should be regarded a lexical idiosyncrasy, perhaps a relic of a previous diachronic stage.

#### 6.4. Structural control

Unlike the predicate classes of inherent control, the predicate classes that license structural control show more cross-linguistic variation. Since there is no inherent preference for a control-inducing structure because a co-referent reading is only one alternative among various options, other properties of the control-inducing structure may determine whether it will be selected by the respective predicate. Utterance predicates, for instance, which do not trigger any time or world dependence regarding their SOA-argument may select a control-inducing structure according to its potential to encode various temporal and modal relations. The latter aspect will also be relevant for factive predicates (see below).

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17 According to Isac & Jacob (2004) the subjunctive in Balkan languages has imperative force as well.

18 Note that Cristofaro’s hierarchy and her predictions regarding sentential complementation are not valid for Hungarian: Here, perception verbs, which are lower on the hierarchy than directive/manipulative verbs, may take an infinitival complement (see (i)), which is not possible with most directive predicates; they take the syntactically less coherent subjunctive.

(i) Lát-tam                      a    nap-ot    fel-kel-ni  
 see-1SG.PAST.DEF    the    sun-ACC    PT-rise-INF  
 ‘I saw the sun rise’ [Kiss 2002:200]

For a language such as German, structural control predicates are numerous compared to inherent control predicates. German seems to be a ‘control-happy’ language, i.e. almost all predicates that take an SOA-argument (with the systematic exception of interrogative predicates) may select an infinitival complement – though with a varying degree of frequency. Apart from very general utterance predicates such as *sagen* ‘say’, most utterance predicates or predicates of sound emission may take an infinitival complement if they are coerced into a meaning of a transfer of content by means of the utterance or sound omission, as the examples in (80) illustrate. These forms are not very frequent because they belong to a formal register.

- (80) a. Wir können nicht immer nur jammern, [am Rande  
 we can not always only wail at.the edge  
 Baden-Württembergs zu liegen].  
 B-W to lie  
 ‘we cannot always wail over being located at the edge of Baden-  
 Württemberg’ [IDS-corpus]
- b. Er zischte, keine gebratene Blutwurst essen zu wollen.  
 he hissed no fried blood.sausage eat to want  
 ‘he hissed not to want to eat fried blood sausage’

Whereas utterance predicates in German may occur with infinitival complements, other languages exclude utterance predicates from control-inducing structures (e.g. Q’eqchi’, Kockelman 2003).

Factive predicates are also subject to cross-linguistic variation. Whereas Polish factive predicates (Słodowicz 2006) do not allow infinitival complements, German factive predicates may take infinitival complements, especially if the embedded predicates are modalized, as shown in the examples for *bedauern* ‘regret’ in (81a-c). The modals function as stativizers, thus yielding event types which seem to be more in line with the factivity requirement of the matrix predicate. Likewise, the use of the aspectual auxiliary *haben* enhances the embedding of infinitival complements under factive predicates.

- (81) German: infinitival complements of *bedauern* ‘regret’ [IDS-corpus]
- a. Er bedauerte, aufgrund des Steuergeheimnisses keine weiteren  
 he regretted because.of the tax.privacy no further  
 Angaben zu dem Fall machen zu **dürfen**  
 statements to the case make to be.allowed  
 ‘he regretted not to be allowed to make further statements concerning  
 the case because of tax privacy’

- b. Unter den 26, die schriftlich bedauerten, nicht dabeisein zu  
among the 26 who in.writing regretted not participate to  
**können** ...  
be.able  
'among the 26 who regretted in writing not to be able to participate'
- c. Die tschechischen Ermittler bedauern sehr, mitteilen zu **müssen** ...  
the Czech detectives regret very inform to have  
'the Czech detectives regret honestly, to have to inform'
- d. ... sie bedauert es, nicht schon viel früher den Schritt zu einem  
she regrets it not already much earlier the step to a  
Neuanfang gewagt zu **haben** ...  
new.beginning dared to have  
'she regrets not to have dared earlier the move to a new beginning'

A factive predicate like *bereuen*, which roughly corresponds to 'repent' (although in a less religious sense) and which is a predicate of inherent control because one can only show or feel contriteness for one's own actions, shows a slight preference for infinitival complements over finite complements. That some factive predicates require a control reading, whereas others do not, shows that factivity and control are independent from each other.

Structural control is also typically found with predicates that take SOA-'subjects'. The fact that one can observe the disjoint reference effect with subjunctive SOA-'subjects' as in (82) shows both that here control is not inherent but structural and that there *is* control into SOA-'subjects'. Recall that I define SOA-'subjects' as SOA-arguments in highest argument position.

(82) Spanish: obviate effect in subject clauses

- a. Me<sub>i</sub> molesta [<sub>i</sub> venir tan tarde]  
1SG.ACC disturb.3SG come.INF so late  
'it disturbs me to come so late'
- b. Me molesta [que Juan/\*yo haya venido tan tarde]  
1SG.ACC disturb.3SG COMP J/1SG AUX.SUBJ come.PTC so late  
late  
'it disturbs me that Juan/\*I has/have come so late'

## 7. Further evidence for the dual nature of complement control

In the previous sections I have already shown the relevance of the lexicon for complement control. In this section I will discuss two further constructions that

reveal the dual lexical-syntactic nature of control: backward control and control in embedded questions.

### 7.1. Backward control

Another interesting evidence for the double lexical-syntactic nature of complement control is the structure of backward control: Here, the controller is realized in the embedded clause, whereas the unrealized controllee can be postulated for the matrix clause.<sup>19</sup> Backward control has been claimed for Japanese ('counter-equivalency', see Harada 1973), Jakaltek (Grinevald Craig 1977), Brazilian Portuguese (Farrell 1995), Tsez and related Daghestanian languages (Polinsky & Potsdam 2002a), Malagassy (Polinsky & Potsdam 2002b), Korean (Monahan 2003).<sup>20</sup> The Na-Dene language Haida (Enrico 2003) exhibits patterns of backward control as well.

Backward control is per definition only possible in structures of sentential complementation in which the argument to be identified with an argument of the matrix predicate is realized overtly. Hence, the structures are not control-inducing, which is also true for the matrix clause. This, however, means that backward control should be restricted to inherent control predicates; otherwise, the notion of control would not make sense.

The lexical character of backward control is documented in the class of verbs that trigger backward control; only a small subset of control predicates license structures of backward control. With the majority of verbs, all respective languages display forward control, which reflects the marked character of backward control. Cross-linguistically, the respective class of control predicates is not homogeneous. In Tsez and other Daghestan languages as well as Malagassy, backward control can be found with aspectual verbs such as 'begin', 'continue', 'stop'. Korean exhibits backward control with directive verbs such as 'persuade'. In Jakaltek, movement verbs optionally seem to trigger backward control.

The following example from Korean illustrates backward object control. (83a) shows the typical pattern of forward control: the controller is realized in the matrix clause as accusative object of the verb *seltukhata* 'persuade'. In (83b) the controller is realized in the complement clause; here, it receives the subject

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19 The notion of 'backward control' is rather unfortunate because it covers, in linear terms, backward as well as forward control. 'Upward control' would be more adequate. However, since the notion of backward control has been established in the literature, I will use it in the following.

20 As far as I can see, Brazilian Portuguese is misanalyzed. The evidence provided by Farrell (1995) is not striking. I assume that the two verbs *mandar* 'send' and *fazer* 'do' are potential ECM-verbs in which the subject of the embedded verb is not raised into the matrix clause.

linker nominative. Monahan (2003) provides ample evidence (case marking, scrambling, temporal adverbs) that the controller is realized within the subordinate clause.

(83) Korean: Backward control vs. forward control (Monahan 2003:357)

- a. Chelswu-nun Yenghi-lul<sub>i</sub> [ <sub>i</sub> kakey-ey ka-tolok ]  
 Ch-TOP Y-ACC store-LOC go-COMP  
 seltukha-ess-ta  
 persuade-PAST-DECL  
 ‘Chelswu persuaded Yenghi to go to the store’
- b. Chelswu-nun <sub>i</sub> [Yenghi-ka<sub>i</sub> kakey-ey ka-tolok ]  
 Ch-TOP Y-NOM store-LOC go-COMP  
 seltukha-ess-ta  
 persuade-PAST-DECL  
 ‘Chelswu persuaded Yenghi to go to the store’

Haida shows an interesting case of ‘case transfer’ in backward control: The matrix verb selects an inactive subject, whereas the embedded verb selects an active subject. However, in the embedded clause the inactive pronominal marker (INACT) is used. Word order facts – the controller stands between embedded object and embedded verb – and especially the interpretation of the clitic =*?isan* ‘too’ – provide evidence for backward control.

(84) Haida: backward control (Enrico 2003:888)

- [’laa-Caa dii=?isan guusuw-ee-rii] <sub>i</sub>/\*dii kilsda-ang  
 3-OBL 1SG.INACT=too talk-INF-OBL <sub>i</sub>/1SG be.tired.of-PRES  
 ‘I am tired of talking to him too’/ \*‘I too am tired of talking to him’

The following properties of backward control have to be taken into account: a) The admissibility of backward control is cross-linguistically parameterized. So far, backward control has only been reported for a small number of languages. b) Backward control seems only to allow a reduced range of control readings (compared to forward control). Up to now, only exhaustive readings have been documented.<sup>21</sup> c) Backward control can be found in verb-final (e.g. Korean, Tsez) as well as verb-initial languages (e.g. Malagassy). In verb-final languages, backward control could be characterized as a kataphoric relation between con-

21 The restriction to exhaustive readings allows movement analyses as those proposed by Polinsky & Potsdam (2002a/b).

In semantic terms, the restriction to exhaustive readings corresponds to the simplified semantic representation of control (see page 8), illustrated here for a control verb such as *force*:  $\lambda P \lambda x \lambda y \text{ FORCE}(x,y,P(y))$ . The specific effect of backward control would thus be a systematic syntax-semantics mismatch. The saturation of the arguments must be bound to the embedded clause, indicated by bracketing on the theta-grid:

$[\lambda P \lambda y]_{IP} \lambda x \text{ FORCE}(x,y,P(y))$ .

troller (filler) and controllee (gap), whereas in verb-initial languages this could be characterized as an anaphoric relation:

- (85) a. [  $\_i$  [NP<sub>i</sub> V] V]                      [verb-final = ‘kataphoric’]  
 b. [ V [V NP<sub>i</sub>]  $\_i$ ]                              [verb-initial = ‘anaphoric’]  
 c. [  $\_i$  V [NP<sub>i</sub> V]]                                [mixed structures]

d) Backward control occurs preferentially in languages with surface orders that are potentially ambiguous between forward and backward control (see also Potsdam & Polinsky 2002a). If no matrix clause element (e.g. an adverb) intervenes between the controller/controllee and the embedded clause, forward and backward control cannot be distinguished in terms of word order, although they may be distinguished in terms of case marking.

(86) Control type	verb-initial	verb-final	mixed
BC	[ V [V NP <sub>i</sub> ] $\_i$ ]	[ $\_i$ [NP <sub>i</sub> V] V]	[ $\_i$ V [NP <sub>i</sub> V]]
FC	[ V [V $\_i$ ] NP <sub>i</sub> ]	[ NP <sub>i</sub> [ $\_i$ V] V]	[ NP <sub>i</sub> V [ $\_i$ V]]

e) The presence of backward control does not necessarily correlate with the presence of other deep-embedding structures (e.g. internally headed relative clauses, which occur in Korean, Japanese and Haida, but not in Tsez, Jakaltek or Malagassy).

f) Backward control preferentially occurs in languages in which the matrix predicate does not need to agree with the control argument (with the exception of Tsez and its close relatives). Tsez is peculiar in that it allows non-local agreement in other structures as well (see Polinsky & Potsdam 2001, Polinsky 2003).

Structures that remind of backward control can also be found in German. In contrast to *zwingen* ‘force’, the derived variant *er-zwingen* ‘force’ preferentially selects a clausal structure in which the person put under pressure is realized as an overt argument of the embedded predicate (see (87b)).

- (87) German
- a. Gerhard zwang Joschka, [  $\_$  das Training wieder auf-zu-nehmen].  
 G            forced J                                      the training again up-to-take.INF  
 ‘Gerhard forced Joschka to take up his training again’
- b. Gerhard er-zwang, [dass Joschka das Training wieder auf-nimmt].  
 G            PX-forced COMP J                                      the training again up-take.3SG  
 ‘Gerhard forced from Joschka to take up his training again’

The ‘backward control’ structure is used if the manipulation is of a more indirect nature, involving possibly an intervening authority.<sup>22</sup>

<sup>22</sup> Cross-linguistically, directive verbs often comprise two classes: a class that only allows readings of direct manipulation (e.g. *force*, *persuade*) usually instantiated by structures

## 7.2. Control in embedded questions

Since in some languages interrogative predicates select control-inducing structures besides finite clauses, the question arises which control patterns emerge. The syntactic aspect of control in embedded questions is the general admissibility of control-inducing structures, which is language-specific. Whereas English interrogative predicates allow control-inducing structures, i.e. WH-infinitives, Standard German does not: (88a/b) shows extensional and intensional interrogatives in English, (88c/d) their German translations, which are ungrammatical. Since the controllee has to be covert in English, subject questions are ungrammatical as in (88e).

- (88) a. She cabled Helen [when \_ to send the package].  
 b. He wondered [how \_ to reach the summit].  
 c. \*Sie telegraphierte Helen [wann \_ das Paket zu schicken].  
 d. \*Er fragte sich [wie \_ den Gipfel zu erreichen].  
 e. \*I don't know [who to go first].

Sabel (1996) attributes the admissibility of WH-infinitives to the option of filling the infinitival C-system with a base-generated overt element (e.g. *for* in English); Standard German lacks this option. Gärtner (2006) observes that there is a strong correlation between the admissibility of WH-infinitives and the uniqueness of the WH-pronoun in the respective language: If there is an overlap between the WH-pronoun and an indefinite/unspecific pronoun and, thus, potential ambiguity between a declarative and interrogative reading, WH-infinitives are ruled out. Since the overlap often does not affect the whole set of interrogative pronouns, further research is needed to establish the basis of the observed correlation.

According to Kornfilt (1997) Turkish does not allow structures of embedded questions that would resemble WH-infinitives; only factive nominals such as (89) are possible, no 'infinitival' structures, which would be nominalized verb forms without possessor agreement (see also (56)):

- (89) Turkish (Kornfilt 1997:52f.)  
 a. (sen) ban-a [Ahmed-in öl-üp öl-me-**diğ**-in]-i  
 2SG 1SG-DAT A-GEN die-and die-NEG-NOML-3SG.P-ACC  
 sor-ma!  
 ask-NEG  
 'don't ask me whether Ahmet has died (or not)'

---

such as [ ... DP<sub>i</sub> V<sub>1</sub> DP<sub>j</sub> [ \_<sub>j</sub> V<sub>2</sub> ...]] and a class that allows readings of indirect/mediated manipulation as well (e.g. *order*), often instantiated in structures such as [ ... DP<sub>i</sub> V<sub>1</sub> [DP<sub>j</sub> V<sub>2</sub> ...]]. The latter structures remind of backward control (see Tomić 2006 for examples in Balkan languages).

- b. Hasan ban-a [kim-in öl-**düğ**-ün]-ü sor-du  
 H 1SG-DAT who-GEN die-NOML-3SG.P-ACC ask-PAST  
 ‘Hasan asked me who had died’

Besides the fact that the general admissibility of embedded questions with control-inducing structures is language-specific, there is also evidence for a lexical factor in WH-infinitives. In English the set of predicates that license WH-infinitives seems to be a subset of the predicates that select finite embedded questions, as the following data show; among Huddleston’s (2002) ten classes of interrogative predicates, four do not allow WH-infinitives, namely predicates that express disbelief, surprise, dependence, or significance:

- (90) English: unacceptable WH-infinitives; Huddleston (2002a:985)
- a. I doubt [whether I should accept].
  - a’. \*I doubt [whether \_ to accept].
  - b. It was amazing [what they offered].
  - b’. \*It was amazing [what \_ to offer].
  - c. It depends on [how much I must pay].
  - c’. \*It depends on [how much \_ to pay].
  - d. I don’t care [whether I go or not].
  - d’. \*I don’t care [whether \_ to go or not].

Another potential lexical factor has not been studied thoroughly, namely the question of whether there are predicate-specific control readings. There is no consensus in the literature regarding the potential control readings in WH-infinitives. In the syntactic literature, WH-infinitives have been assumed to show arbitrary control, typically illustrated by examples like the following, in which the anaphor *oneself* is taken as indication for arbitrary control.

- (91) John<sub>i</sub> asked [how \_<sub>j</sub> to behave oneself<sub>j</sub>].

In contrast, Landau (2000) assumes partial control for WH-infinitives because arbitrary control should render the following example grammatical; here, the controller is co-referential with the pronominal object of the embedded predicate. The blocking of pronominal binding can only be explained if the subject referent of the embedded clause is a potential binder of the object pronoun.

- (92) \*Sue<sub>i</sub> asked [what \_<sub>arb</sub> to buy her<sub>i</sub> in Rome].

Jackendoff & Culicover (2003) show that generic readings are excluded for embedded infinitival polar questions:

- (93) Harry<sub>i</sub> asked Sally<sub>j</sub> [whether \_<sub>i</sub>/\*gen/\*<sub>j</sub> to take care of himself/\*oneself/\*herself].

One can also find instances of split control, for instance in Spanish WH-infinitives:

(94) Spanish: split control in WH-infinitives

Mi novia<sub>i</sub> no me<sub>j</sub> especificó [dónde <sub>-i+j</sub>  
 my girl.friend NEG 1SG.ACC tell.PRET.3SG where  
 encontrar=nos]  
 meet.INF=1PL.ACC]  
 ‘my girl-friend didn’t tell me where to meet’

The unclear status of the potential referential readings in WH-infinitives is due to the fact that an exhaustive study of all interrogative predicates and their admissible readings regarding WH-infinitives still has to be carried out. One might speculate that there may be predicate-specific control readings as in the case of embedded declaratives. Nevertheless, restrictions on potential readings of the controllee seem to be loosened compared to control declaratives.

So far there is no attested case of an interrogative predicate with inherent control, which suggests that interrogative predicates are either structural control predicates or non-control predicates, the latter being predicates that exclude WH-infinitivals (see (90)). It is very difficult to think of an interrogative predicate with inherent control, at least with an inherent subject control reading. A potential candidate would be a predicate with a meaning such as ‘wonder about one’s own perspectives in life’ with the SOA-argument denoting the question regarding a specific aspect, e.g. regarding ‘when winning the lottery’. An interrogative predicate with inherent object control could, for instance, be a predicate such as ‘interrogate someone regarding SOA’ in which the predicate only refers to situations of interrogation in which the interrogated person can only be someone accused of something, not a person having witnessed something. So far, no such predicates have been highlighted in the discussion of interrogative predicates.

## 8. Summary

In this paper I have shown the complex interplay of lexicon and syntax in complement control. The lexicon mainly determines the control readings (especially the selection of the controller and the referential readings), whereas the syntax determines the syntactic complementation pattern (the structure of subordination, the admissibility of backward control and control in embedded questions) and in most languages the selection of the controllee.

An important distinction in complement control is that of structural vs. inherent control. Due to the focus on languages with infinitival complements, no strong attention has been paid to the question whether the control is induced by

the structure or by the lexical meaning of the matrix predicates. Only research on languages with different complement patterns or on the structural alternatives of predicates that may show control will reveal whether the control reading is due to structural requirements of argument identification or due to semantic requirements in terms of the situation denoted by the matrix predicate.

Inherent control predicates are more homogeneous cross-linguistically than structural control predicates because their control property is determined by their meaning. Therefore, equivalent predicates in languages should show equivalent control properties. This, however, does not imply that they should have the same sentential complementation pattern, which is especially evident in terms of directive predicates, which in some languages constitute a separate class of marked inherent control, i.e. they select a control-neutral structure although a control-inducing structure is available in the respective language. Inherent control predicates include directive predicates, (agentive) phasal predicates and implicative predicates. These predicates share the property that the event denoted by the SOA-argument is in some way dependent on the event denoted by the control predicate (being, for instance, a bring-about relation or a implicative relation). This kind of event dependency seems to require argument sharing (as in the case of event coherence in serial verb constructions).

Regarding structural control, more emphasis and cross-linguistic research is needed with respect to the question of which predicates may select a control-inducing structure. Moreover, one may wonder why arbitrary control is hardly possible with SOAA-taking predicates in the context of control-inducing structures. The potential exceptions are SOA-subjects, though not generally. The avoidance of arbitrary control may be due to locality, i.e. a local controller is preferred over a non-local controller. Therefore, there is the strong tendency in non-inherent control predicates to select one of its arguments as controller in case of control-inducing structures.

Since most grammatical descriptions do not acknowledge the role of the lexicon in sentential complementation, there are no exhaustive lists of predicates including their syntactic properties. Therefore, an exhaustive lexical typology of control predicates is far from being achieved in the near future. Since the lexicons of languages differ (partly from environmental and cultural factors), a language may lack certain predicate classes. It can be observed that Australian and Oceanic languages do not exhibit the richness of directive predicates found in European languages (confirmed by Peter Austin p.c.). They often only exhibit a few causative-like verbs that do not encode the manner of manipulation. These languages, however, do not lack inherent control predicates in principle.

## Abbreviations

=	clitic boundary	NF	non-feminine gender
A	‘accusative’ agreement	NOM	nominative/default linker
ABL	ablative	NOML	nominalization
ACC	accusative	NONFACT	non-factual
ANT	anteriority	NONVOL	non-volitive
ANTIPASS	antipassive	NONSTRUCT	non-structural realization
AUX	auxiliary	OBL	oblique
AV	actor voice	OBJ	object case
CAUS	causative	OPT	optative
CL	classifier	OV	object voice
COM	comitative	P	possessor agreement
COMP	complementizer	PASS	passive
CRS	‘current relevant state’ marker	PAST	past tense
DAT	dative	PERF	perfective
DECL	declarative	PL	plural
DEF	definite	PRES	present
DET	determiner	PRET	preterite
DETR	detransitivizer	PRO	pronominal form
DIM	diminutive	PROG	progressive
DIR	directional	PRT	not explained by Hale (1992)
DS	different subject	PT	particle
DV	dative voice	PTC	participle
E	‘ergative’ agreement	PX	prefix
ERG	ergative	REFL	reflexive
EXPE	expected	REM.PAST	remote past
FUT	future	REP	reported evidential
GEN	genitive	SG	singular
IMP	imperative	SS	same subject
IMPF	imperfective	SST	short stem
INACT	inactive	STRUCT	structural realization
INF	infinitive	SUBJ	subjunctive
INFER	inferential	SUP	supine
IRR	irrealis	TERM	terminative case
ITR	intransitive	TH	thematic element
IV	instrumental voice	TMP	tense marker
LOC	locative	TOP	topic
N	‘nominative’ agreement	TR	transitive
NC	not explained by Hale (1992)	VIS	visual (evidential)
NEG	negation	VOL	volitional

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