

to their distribution in the series, since their distribution is fixed. Since the syntactic template is also finite, there is a finite classification of functional projections. Hence, the typology of functional projections is limited and the properties of functional projections are constrained by their classification.

Poepfel & Wexler propose the Full Competence Hypothesis, which contends that children possess *a priori* knowledge of complete clause structure. They argue that children do not gradually deduce syntactic structure from the interaction of experience and innate principles of well formedness, but rather children begin language acquisition with innate knowledge of syntactic structure itself. This approach to the learnability conundrum requires the universality of clause structure. The present study pursues the idea that large components of clauses are atomic, and that natural language gets a great deal of mileage out of a few syntactic configurations. According to this hypothesis, the smallest building block of syntactic structure is much larger than the traditional X" projection of Chomsky (1970). The existence of atomic series of syntactic structure lends credence to approaches to learnability such as Poepfel & Wexler's, in which such series have a significant utility function; they are a crucial part of the pre-given portion of the language faculty.

Atomicity in the sense used here refers to the level of organization at which language is perceived, and not necessarily to an objectively basic level of organization. Much linguistic research indicates that the basic unit of syntactic organization is the phrasal projection of a single morpheme. The hypothesis investigated here is not that such phrasal projections do not exist, but rather that syntactic structure is not perceived in units smaller than a series of several such phrases. An illustrative parallel comes from geometry. A point is a geometrically basic object. A line is a complex object which consists of a set of points. However, a human does not perceive a line as a set of points. A line is a perceptually basic object. Likewise, a series of phrasal projections which is perceptually basic may be broken down into objectively smaller categories, which nonetheless do not act independently in the perception of syntactic structures. The hypothesis introduced here concords with the existence of X" categories in an analogous manner.

Empirical motivation for the hypothesis will be introduced at length. The first part of this paper discusses the fine structure of complementizers in dialects of German that display complementizer inflection. In such dialects, a complementizer may bear agreement morphology. I will discuss the data in more detail below. The second part of this paper shows that the syntactic positions available within the complex complementizer superstructure are available lower in the phrase structure in the same hierarchical order as they appear in the complementizer superstructure. These data show that the CP-IP system of Chomsky's

(1993) basic clause structure is split in German (massively) into at least two reiterations of the same set of functional projections in the same ordering relation. This set is that in (2), in which 'CONJP' houses coordinating conjunctions, WHP houses WH-elements, AGRP houses arguments and triggers agreement, and CP represents a general A-bar position.

(2) [CONJP [WHP [CP [AGRP [CP]]]]]

The present study does not show that German phrase structure consists exclusively of reiterations of the series in (2). A number of considerations, including data presented here, show that there is more structure in German finite clauses than two reiterations of (2) make available. The hypothesis discussed here predicts that such additional structure falls into the pattern displayed in (2), but this prediction remains to be investigated. The paper concludes with a discussion of the hypothesis in light of the analysis of German clause structure presented below, as well as the Full Competence Hypothesis, and the formulation of Abraham (1995) of the semantic utility of reiteration of syntactic structure.

1.1 *Methodological assumptions*

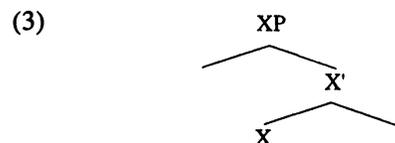
Certain assumptions will guide the argumentation in this paper which I will abide by axiomatically by virtue of their generative power for a large class of constructions in natural language, but more importantly by virtue of their lack of generative power outside of this class. The formulation of an analysis of a linguistic phenomenon amounts to discovering how the properties of this class are manifested in the phenomenon under study. These assumptions are definitions of structural configurations and their functions within syntactic structure which have strong appeal as facets of a constrained theory. They are listed below.

1.1.1 *Theoretical framework*

The analysis formulated in this paper belongs to the class of analyses broadly referred to as the Government-Binding framework, exemplified in Chomsky (1981). I use the Government-Binding framework as a foundation for what follows, in particular the X-bar schema and the binding theory. I adopt certain aspects of the contemporary version of this framework, the Minimalist Program, which I will discuss when relevant.

1.1.2 *Antisymmetry*

I adopt the constraints on syntactic representations presented in Kayne (1994) under the rubric of 'antisymmetry.' The most important of these is the Linear Correspondence Axiom (LCA), which states that asymmetric c-command maps directly onto linear order. From this axiom, and on the basis of several other assumptions, Kayne formulates the following corollaries: (i) in the configuration in (3):



there is no adjunction to XP, and (ii) adjunction to X is to the left. As a result, movement operations on phrases may target only a specifier position, and movement operations on heads may target only an adjunction site to the left of the category being adjoined to, never to its right. See Kayne (1994) for a complete discussion of these and related issues.

1.1.3 *Head Movement Constraint*

I adopt Travis's (1984) Head Movement Constraint (HMC), which states that an X^0 category may not move over another X^0 category. A head may move to an immediately c-commanding head position. Further movement of the displaced head obtains only through movement of the category to which it is adjoined.

1.1.4 *Generalized doubly filled comp filter*

I adopt Koopman's (1996) restriction on spec-head configurations which states that the head and specifier positions of a projection cannot simultaneously be filled with lexical material (see also Sportiche 1992). I will refer to this principle as the 'generalized doubly filled comp filter'. It requires the specifier of a projection to be non-overt when its head is overt, and its head to be non-overt when its specifier is overt. This principle constrains analyses of doubly filled comp effects in a crucial way. For example, sentences such as (4a) below, reported by Henry (1995) to be grammatical in Belfast English, cannot be analyzed as in (4b), which violates the generalized doubly filled comp filter, but rather they must be analyzed as in (4c).

- (4) a. I wonder which dish that they picked.
 b. ...[_{CP} [_{DP} which dish] that [_{IP}...
 c. ...[_{XP} [_{DP} which dish] [_{CP} that [_{IP}...

In (4b), *which dish* occupies the specifier position of CP, which is headed by *that*. In this configuration, both the specifier and the head of CP are overt, a configuration ruled out by the generalized doubly filled comp filter. In (4c), *which dish* occupies the specifier position of a projection XP above CP. The head of XP is non-overt. *That* occupies the head of CP, whose specifier is non-overt. Such a configuration satisfies the generalized doubly filled comp filter. The analysis proposed in this paper conforms to this constraint throughout. See Koopman (1996) for further motivations and consequences for the generalized doubly filled comp filter.

1.1.5 *Agreement licensing*

I assume as in the Minimalist Program that the spec-head relation is the canonical agreement configuration.

- (5) A head agrees in feature content with an element in its specifier position.

I follow Chomsky (1993) and others in assuming that ϕ -feature agreement is licensed in a specialized agreement projection (AGRP), contrary to recent formulations of the Minimalist Program (Chomsky, 1995). In recent formulations, subject-verb agreement is treated as a reflex of a spec-head relation between the subject and verb, regardless of what substructure the relation obtains in. Since the subject and verb are in a spec-head relation in VP across clause types (Koopman & Sportiche 1988), such a treatment requires a mechanism that delays agreement checking until after movement out of VP, lest agreement obtain in, for example, infinitivals. Such a mechanism could take the form, for example, of a principle to the effect 'delay agreement checking' or the form of a stipulation on exactly what substructure mediates agreement. The postulation of agreement projections may viably be construed as a notational variant of the latter approach.

I follow Baker (1985), Johnson (1990), Kayne (UCLA class lectures, 1996), Koopman (personal communication), Sportiche (1992; UCLA class lectures, 1995), and others in adopting a certain implementation of Baker's (1985) Mirror Principle, namely that morphological concatenation—word level and otherwise—occurs during the syntactic derivation of a sentence, not within a pre-

syntactic morphology module. I will term this approach the 'concatenative syntax' approach to morphology, as opposed to the 'morphology checking' approach advocated by the Minimalist Program. This approach has the advantage of unifying the morphology and syntax modules of the grammar, and in so doing, it places a heavy constraint on analyses of morphological phenomena, since it makes such phenomena accountable to constraints on phrase structure. The restriction of morphological concatenation to syntactic operations means that every bound morpheme is either syntactically concatenated to its host by head movement or phonologically concatenated to its host at PF. There is no pre-syntactic affixation. Thus:

- (6) Morphological processes are syntactic or post-syntactic.

2. Structure of complex complementizers

2.1 Data

This section presents a summary of data which will be relevant throughout this article. It discusses verb-second and related phenomena in matrix clauses and in two types of dependent clauses, those headed by subordinating conjunctions and those headed by coordinating conjunctions.

2.1.1 Matrix clauses

German matrix clauses display the well known verb-second phenomenon. The main verb must be the second element in a finite sentence, i.e., it must be separated from the left sentence periphery by exactly one constituent. This element may be the subject, as in (7a), or any other phrasal element, such as another argument, as in (7b), or an adverb, as in (7c).

- (7) a. Der Professor hat dem Studenten gestern ein Buch geliehen.
the professor has the student yesterday a book lent
"The professor lent the student a book yesterday."
b. Ein Buch hat der Professor gestern dem Studenten geliehen.
a book has the professor yesterday the student lent
"The professor lent the student a book yesterday."
c. Gestern hat der Professor dem Studenten ein Buch geliehen.
yesterday has the professor the student a book lent
"The professor lent the student a book yesterday."

As a beginning point, I will adopt den Besten's (1983) analysis of the verb-second phenomenon, according to which the main verb occupies the position C^0 at S-structure in main clauses. This analysis generalizes to a subclass of dependent clauses, in which verb-final word order is required in the dependent clause. In den Besten's account, the verb cannot move to the C^0 position in these cases because C^0 is filled by an overt complementizer.

2.1.2 Dependent clauses: subordinating conjunctions

The basic set of facts I will be concerned with in the first part of this paper is exemplified in the data that follow.

- (8) a. Wir haben gewußt, daß-st du in Salzburg war-st
we have known that-2S you (S) in Salzburg were-2S
"We knew that you (SG) were in Salzburg."
b. Wir haben gewußt, daß-ts ihr in Salzburg war-ts
we have known that-2PL you (PL) in Salzburg were-2PL
"We knew that you (PL) were in Salzburg."
c. Wir haben gefragt, ob-st du in Salzburg war-st
we have asked whether-2S you (S) in Salzburg were-2S
"We asked whether you (SG) were in Salzburg."
d. Wir haben gefragt, ob-ts ihr in Salzburg war-ts
we have asked, whether-2PL you (PL) in Salzburg were-2PL
"We asked whether you (PL) were in Salzburg."

Complementizers such as *daß* or *ob*, traditionally termed 'subordinating conjunctions,' may bear an inflectional morpheme that agrees in ϕ -features with the subject. The inflection is not obligatory. There are no first or third person agreement markers in the complementizer agreement paradigm. The complementizer agreement paradigm and the verbal agreement paradigm are illustrated comparatively in (9) (see also Bayer 1984).

(9)	Subject feature content	Complementizer agreement marker	Verb agreement marker
	1S	∅	-e
	1PL	∅	-en
	2S	-st	-st
	2PL	-ts	-ts
	3S	∅	-t
	3PL	∅	-en

The complementizer agreement paradigm is therefore deficient with respect to the verbal agreement paradigm.

Two additional properties are characteristic of clauses introduced by a complementizer. First, they obligatorily display verb final word order. Hence, e.g.:

- (10) a. * Wir haben gewußt, daß-st du war-st in Salzburg
we have known that-2s you (s) were-2s in Salzburg
("We knew that you were in Salzburg.")
- b. * Wir haben gefragt, ob-st du war-st in Salzburg
we have asked whether-2s you (s) were-2s in Salzburg
("We asked whether you were in Salzburg.")

Again, as a beginning point I assume den Besten's (1983) analysis of these phenomena discussed briefly above.

Second, topicalization is prohibited in clauses introduced by an overt complementizer. Hence, e.g.:

- (11) a. * Wir haben gewußt, das Buch daß-st du gelesen hast
We have known the book that-2s you (s) read have
("We knew that you read the book.")
- b. * Wir haben gefragt, das Buch ob-st du gelesen hast
We have asked the book if-2s you (s) read have
("We asked whether you read the book")

2.1.3 *Dependent clauses: coordinating conjunctions*

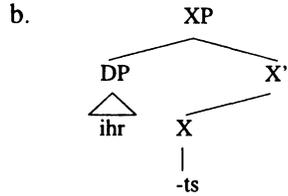
As opposed to the complementizers, there is a class of clause-introducing elements exemplified by *denn* "because" or *aber* "however" traditionally termed the 'coordinating conjunctions', which differ from the subordinating conjunctions in all three properties described above. They may never bear an inflectional morpheme, as in (12a & b), they require verb-second word order within the clause they introduce, as in (12a & b), and the preverbal element in the clause they introduce may be a topic, as in (12c & d).

- (12) a. Hans kommt nicht mit, denn-(*st) du <hast> ihn beleidigt <*hast>.
Hans comes not with, because-(*2s) you <have> him offended <*have>
"Hans isn't coming with us, because you offended him."
- b. Hans ist in der Universität, aber-(*st) du <kannst> ihn anrufen <*kannst>.
Hans is in the university, however-(*2s) you <can> him call <*can>
"Hans is at the university, but you can call him"
- c. Hans fährt nach Salzburg, denn die Berge hat er gern.
Hans travels to Salzburg, because the mountains has he fond
"Hans is traveling to Salzburg, because he is fond of the mountains."
- d. Hans trinkt Tee, aber Kaffee hat er auch gern.
Hans drinks tea, but coffee has he also fond
"Hans drinks tea, but he is fond of coffee also."

2.2 *Analysis of complementizer agreement*

Per assumption (5), I propose that complementizer agreement is a manifestation of a structural relation between the subject and the subject agreement morpheme. The proposal is that in (13a), for example, the subject pronoun is in a spec-head configuration at some level of representation with the agreement morpheme, as illustrated in (13b).

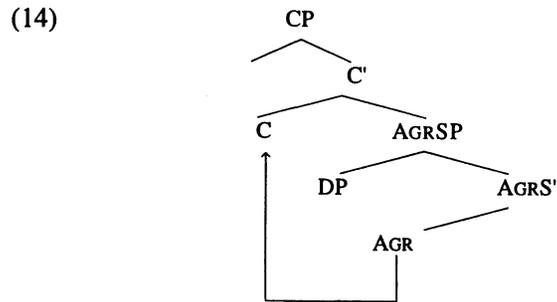
- (13) a. daß-ts ihr komm-ts
that-2PL you come-2PL
"that you (PL) come"



What remains to be clarified in this proposal is the relation between XP and CP. Below I discuss two formulations of this relation. The first is Zwart's (1993) analysis of complementizer inflection in Dutch. The second is a revision of Zwart's analysis which I propose in light of conflicts between Zwart's analysis and certain of the methodological assumptions discussed above, but which preserves desirable aspects of Zwart's analysis.

2.2.1 Zwart

Zwart proposes that XP in (13) is the canonical subject position AGRSP. In the configuration illustrated in (14), the head AGRS⁰ with which the subject is in a spec-head relation raises to C⁰ licensing agreement inflection on the complementizer.



Structure (14) relates complementizer inflection directly to AGRSP. This formulation of the phenomenon has the advantage of explaining why complementizer agreement is exclusively with the subject. Complementizers never agree with any element other than the subject, as the data below illustrate.

- (15) a. daß-st du das Buch gelesen hast
that-2s you the book read have
"that you read the book"

- b. * daß-st der Hans dir das Buch geliehen hat
that-2s the Hans you-DAT the book lent has
("that Hans lent you the book")
c. * daß-st der Hans dich gelobt hat
that-2s the Hans you-ACC praised has
("that Hans praised you")

In (15), the grammatical example (15a), in which the complementizer agrees with the subject, contrasts with the ungrammatical (15b), where it agrees with the indirect object, and (15c), where it agrees with the direct object. An analysis in which the position for licensing complementizer agreement is distinct from the canonical subject position must also include a restriction that insures that only the subject may occupy this position. Such a restriction is a peculiar redundancy that suggests that there is only one position involved.

For example, suppose that complementizer agreement is licensed in an agreement projection dominating CP, which in turn dominates AGRSP, as illustrated below.

- (16) [AGRP [CP [AGRSP]]]

C⁰ raises to AGR⁰ to license complementizer agreement morphology. The subject moves at LF from its surface position in [SPEC·AGRSP] to [SPEC·AGRP] in order to form an agreement configuration in AGRP. (16) raises the question of what prevents other arguments from moving into [SPEC·AGRP] at LF in lieu of the subject, i.e., the question of what rules out (15b & c).

A possible candidate for such a restriction is a prohibition on A-movement over an A-position. If any agreement projection qualifies as an A-position, then both AGRSP and AGRP in (16) are A-positions, and movement to each from an A-position qualifies as A-movement. Rizzi (1990) discusses configurations such as this and their binding theoretic properties. According to the theory of relativized minimality, an element in an A-position is a potential binder of a trace in an A-chain which the A-element c-commands. If the antecedent of the trace c-commands the A-element, the A-element interrupts antecedent government of the trace. Such an A-chain is illicit, since it does not respect relativized minimality, a necessary condition of antecedent government. Therefore, for example, a topicalized object in AGRP in the diagram in (16) will fail to antecedent govern its trace in AGRSP, since the subject in AGRSP is a minimal governor for the trace of the object. The object and its trace belong to an A-chain, since both occupy A-positions. The subject is in an A-position and c-commands the trace of the object, while the antecedent of the object trace c-commands the subject. Hence, the

subject is a minimal governor interrupting antecedent government of the object trace, rendering the chain between the object and its trace illicit. Hence the ungrammaticality of object movement to AGRP. The subject itself, however, may move to AGRP and unproblematically A-bind its trace in AGRSP, since no other potential antecedent governor intervenes.

However, the relativized minimality account of the exclusivity of subject agreement on complementizers is problematic in light of the similarity of the structure in (16) to the structure in (17).

(17) [AGRSP [TP [AGROP]]]

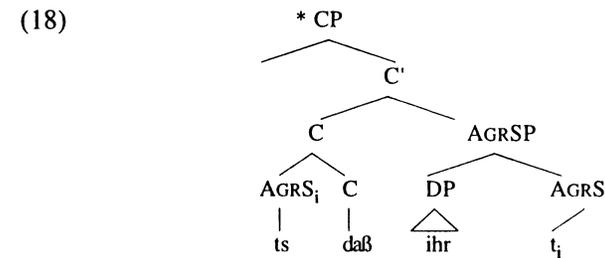
(17) is the partial clause structure of English according to Chomsky (1993). The subject originates as the specifier of VP and the object originates as the complement of VP. At LF, the subject occupies [SPEC-AGRSP] and the object occupies [SPEC-AGROP]. At LF, therefore, the subject c-commands the object and the object c-commands the VP internal trace of the subject. The object is therefore a minimal governor for the subject trace, a violation of relativized minimality. Chomsky (1993) formulates a solution to this problem in terms of domain extension and 'equidistance'. All positions within the domain of the verb are equidistant. Verb movement from VP to AGROP extends the domain of the verb to AGROP, rendering the canonical object position [SPEC-AGROP] equidistant to the subject and object traces in VP. Since the subject and object traces are equally close to the object, the object may bind its trace without the subject trace technically intervening. Hence, the subject trace is free with respect to the object and may be bound by the subject in spite of the syntactic intervention of the object.

The notion of equidistance or any comparable way of licensing the configuration in (17) at LF is extendible to the configuration in (16). Verb movement to AGRSP extends the domain of the verb in (16), rendering the trace of the subject in VP equidistant from a trace in AGROP of an object topicalized to AGRP. Since the two traces are equally distant from the subject in AGRSP, the subject may bind its trace in VP leaving the object trace free. The object trace may in turn be bound unproblematically by its antecedent in AGRP. A subject in AGRSP therefore does not represent a minimal governor for a trace of a topicalized object for the same reason that an object does not represent a minimal governor for a trace of a subject. Due to the *a priori* structural similarity of the two configurations (16) and (17), any foreseeable solution that applies to one is extendible to the other. This paradox suggests that the problem is not with the notion of domain extension and equidistance, or any particular resolution to the problem of subject raising over AGROP. Rather, it indicates that the structural distinction between the canonical subject position and the configuration in which complementizer

agreement obtains is not parallel to the structural distinction between AGRSP and AGROP.

Zwart's analysis does not include such a parallel. Whereas AGRSP and AGROP are distinct projections, the projection in which complementizer agreement obtains is non-distinct from the canonical subject position. AGRSP licenses complementizer agreement morphology. Zwart's analysis has the advantage that it explains the strict association of complementizer agreement with the subject to the exclusion of other arguments. It explains this requirement by relating complementizer agreement directly to AGRSP, the canonical subject position. Due to the strong explanatory force of this proposal, I will retain it in the analysis I propose in what follows.

As such, however, Zwart's analysis is incompatible with certain of the methodological assumptions guiding the present analysis. Namely, it is incompatible with the assumption that word concatenation is syntactic and that adjunction is left-branching. The assumption that word concatenation is syntactic requires that the complementizer and the subject agreement morpheme associate syntactically at S-structure. The considerations discussed above indicate that the subject agreement morpheme associated with the complementizer heads AGRSP. Since adjunction is to the left, the association of the agreement morpheme and the complementizer through head movement of AGRS⁰ to C⁰, as proposed by Zwart, will yield the form in (18), which displays the incorrect linear order of stem and affix.

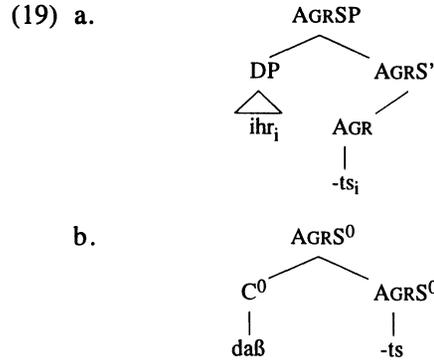


In what follows, I propose a formulation of Zwart's proposal that retains the insight that complementizer inflection is triggered by AGRSP, but which is compatible with the methodological assumptions guiding the present analysis.

2.2.2 Revisions to Zwart

In accordance with the structural restriction on morphological covariation between heads and phrases discussed in §1.1.5, subject agreement obtains in a

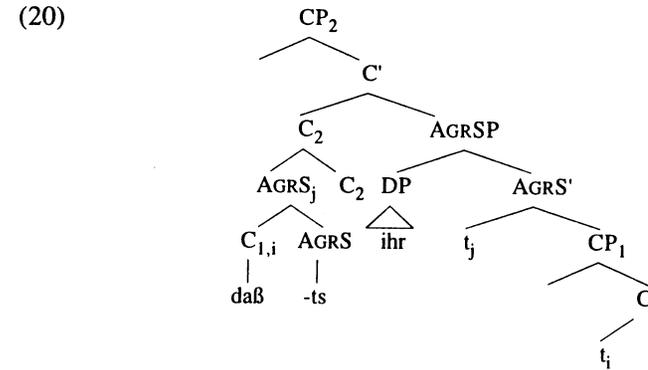
spec-head configuration in an agreement projection between the subject and the head of the agreement configuration, the terminal element of which is the inflection itself, as illustrated in (13b). I retain Zwart's conclusion that XP in (13b) is AGRSP. The derivation of complementizer inflection in a string such as (13a) begins with the configuration in (19a), in which c_iindexation indicates agreement, and derives the configuration in (19b).



In (19b), the complementizer has left adjoined to the head $AGRS^0$, and *daßts* is syntactically represented as a complex head of the category $AGRS$.

The LCA and the HMC restrict the form of this derivation in an extreme way. In fact, (19b) can only be derived from (19a) in one way. C^0 must raise to $AGRS^0$ from within the complement domain of $AGRSP$. That is, under the LCA and the HMC, (19b) can only be derived in the configuration in (20):

According to this proposal, the surface position of the complementizer to the left of the subject is derived. The complementizer is base generated in CP_1 structurally below $AGRSP$, the canonical subject position. It head moves to $AGRS^0$, where it picks up the inflectional suffix for subject agreement. Then, the complex dominated by $AGRS^0$ head moves to C_2^0 , a functional position that asymmetrically *c*-commands the subject position [SPEC- $AGRSP$], hence linearly precedes it. In this manner the string *daßts ihr* in (13a) is derived.



The conclusion that complementizers are base generated below $AGRSP$ is forced by the methodological assumptions constraining this analysis as well as the desire to capture the strict relation between the inflectional morpheme associated with the complementizer and the subject in terms of a syntactic relation between CP and $AGRSP$. But this proposal faces certain problems, one of which it shares with Zwart's analysis, which is the issue of how the verb acquires the subject agreement suffix with which it obligatorily appears in finite constructions. In the analysis I have proposed, $AGRS^0$ is monopolized by the complementizer. But the main verb never fails to bear agreement for the subject. In the analysis I have proposed, the trace of the complementizer in CP below $AGRSP$ prohibits verb movement to $AGRS^0$ whenever a complementizer is present. I will address this issue in detail below.

2.3 Verbal agreement morphology

I will broach the issue of how the verb acquires subject agreement morphology by examining briefly subject-verb agreement phenomena in Classical Arabic. I will then show how the Arabic data bear on the issue of German verb agreement.

2.3.1 Subject-verb agreement in Classical Arabic

Classical Arabic word order alternates more or less freely between Verb-Subject-Object word order and Subject-Verb-Object word order. The subject agreement paradigm that the verb displays is apparently sensitive to the position of the subject. When the subject precedes the verb, the verb displays an agreement suffix which covaries with the subject with respect to the ϕ -features per-

son, number, and gender. However, when the subject follows the verb, the verb displays an agreement suffix which covaries with the subject with respect to only the feature gender, displaying default third person singular morphology regardless of the ϕ -feature content of the subject. This alternation is illustrated below.

- (21) a. allaf-a Moen maqaala.
wrote-3MS Moen article
“Moen wrote an article.”
- b. Moen allaf-a maqaala.
Moen wrote-3MS article
“Moen wrote an article.”
- c. allaf-a al-asaatidha maqaala.
wrote-3MS the-professors article
“The professors wrote an article.”
- d. al-asaatidha allaf-uu maqaala.
the professors wrote-3MP article
“The professors wrote an article.”

In (21a & b), in which the subject is singular, the verb bears a third person masculine singular suffix regardless of the position of the subject. When the subject is plural, there is a distinction in agreement marking between the linear orders. In (21c), where the subject follows the verb, the verb agreement suffix matches the subject in gender, but not in number. The suffix appears in the default singular form. In (21d), where the subject precedes the verb, the verb agreement suffix matches the subject in all features.

It is unclear *a priori* whether the position of the verb or of the subject is constant in the examples above, if either. I claim that the position of the verb is constant on the basis of the fact that negative subjects occur obligatorily preverbally, as illustrated below.

- (22) <laa ustaadh> allafa <*laa ustaadh> maqaala.
<no professor> wrote <*no professor> article
“No professor wrote an article.”

While it is a mundane corollary of the feature checking theory that properties of phrases such as specificity or negativity correlate with the syntactic position of the phrase bearing the property, it is less clear that a property of a phrase may affect the distribution of a distinct element which does not bear the property. Thus an analysis of (22) in which negative and non-negative subjects occur in

the same position, but with negative subjects disallowing verb raising to a pre-subject position, is unwarranted in light of the availability of an analysis in which the position of the verb is fixed and negativity is licensed preverbally. The verb, whose interpretation does not differ according to whether its subject is negative or non-negative, is stationary in every case, whereas the subject, whose interpretation depends dramatically on whether it is negative or non-negative, instantiates this distinction syntactically. Negativity is licensed pre-verbally, making post-verbal negative subjects illicit. The position of the verb, however, is fixed.

In light of the parallels between Arabic and German that will be discussed in §2.3.2 and in lieu of evidence to the contrary, I propose that Arabic and German are parallel with respect to the position of the verb as well, and that they differ in that German requires a preverbal constituent whereas Arabic does not. That is, the Arabic verb is fixed in CP₂, preceding the canonical subject position AGRSP. According to these considerations, the distinction between SVO and VSO sentences in Arabic is a distinction in the landing site of the subject. Post-verbal subjects occupy AGRSP and preverbal subjects occupy a position above CP₂, whereas the verb is fixed in CP₂.

Classical Arabic is a pro-drop language. When the subject is non-overt, the verb agreement suffix must display agreement for all features of the subject, i.e., the verbal agreement paradigm for non-overt subjects is the same as that for preverbal subjects, as the example below demonstrates.

- (23) allaf-uu maqaala
wrote-3MP article
“They wrote an article”

The generalization that accounts for these data in the most uniform way, that is, making the fewest distinctions, is that the distinction in the agreement paradigm between pre-verbal and post-verbal subjects is not a sensitivity to the linear order of the subject and verb, but rather a sensitivity to the overtness of the element occupying the post-verbal subject position. This proposal avoids a distinction in the distribution of empty and non-empty categories (that empty categories must be preverbal whereas non-empty categories may be post-verbal), and it avoids reference to linear order, i.e., the distinction between ‘pre-verbal’ and ‘post-verbal.’ It reduces both of these distinctions to one distinction, that between ‘overt’ and ‘non-overt.’ In (23), full agreement is triggered by the empty category *pro* in the canonical subject position, which the verb precedes. In (21d), full agreement is triggered by the empty category *NP-trace* in the canonical subject position which is related by movement to the subject which has

raised to a topic position preceding the verb. In (21c), the overt category *al-asaatidha* ‘the professors’ in the canonical subject position triggers degenerate (gender only) agreement morphology on the verb.

This solution is not typical of analyses of agreement phenomena in Arabic. Typical analyses, exemplified by Ouhalla (1994), and Coopmans (1994), assume that agreement is always complete, but that agreement for distinct ϕ -features may be split between distinct projections. Coopmans (1994), for example, offers an alternative analysis of the data above which follows this line of reasoning. He claims that AGRP is split between projections licensing person, number, and gender respectively. Nominative case is assigned by a person licensing head either in a spec-head configuration with the subject in [SPEC:PERP] or under government to the subject in [SPEC:NUMP] in the configuration below.

(24) [TP [PERP [NUMP [GP [VP]]]]]

The verb obligatorily moves at least to PER⁰. The subject moves from [SPEC:VP] to the nearest subject landing site [SPEC:GP]. Since it does not receive case in this position, but rather only in [SPEC:NUMP] or [SPEC:PERP], it continues to move to the nearest case position [SPEC:NUMP]. The ECP requires the subject trace in [SPEC:GP] to obligatorily be coindexed with the head G⁰, forcing gender agreement. The trace of the subject in [SPEC:GP] is antecedent governed by the subject in [SPEC:NUMP] only if NUM⁰ is not a minimal governor. Verb movement through NUM⁰ extends the domain of G⁰ for antecedent government of the trace in [SPEC:GP], but only if G⁰ and the trace are coindexed. See Coopmans (1994:fn 4) for more detail. Verb-subject word order with only gender agreement falls out from this configuration. The subject has the additional option of movement to [SPEC:PERP]. Movement of the subject from NUMP to PERP activates number agreement in the same manner as movement from GP to NUMP activates gender agreement. Subject-verb word order with full agreement falls out from this configuration.

Coopmans does not discuss non-overt subjects. Since movement from a projection activates agreement for the feature the projection represents, then pronominal subjects, non-overt elements which instantiate person as well as number and gender distinctions, must move out of PERP. Non-overt subjects therefore have a distribution distinct from overt subjects. Hence, proposals of the type Coopmans formulates do not dispense with the distinction between overt and non-overt elements. Not only does the grammar refer to overtness, it is the source of a vacuous syntactic transformation. If the differentiation of AGRP were to eliminate the necessity of referring to overtness as a property of subjects, this would represent an advantage over the approach discussed previously.

But it does not. However, this approach has the advantage that agreement is never partial, rather, it is always complete with respect to the position of the subject. The difference between degenerate and full agreement is therefore related directly to a visible distinction in the distribution of overt subjects.

However, an additional problematic attribute of the structure in (24) is its similarity to the structures in (16) and (17) with regard to the multiplicity of A-positions. In (24), verb movement extends the domain of the verb to GP, making both the subject and the object base positions equidistant from [SPEC:GP]. Hence, an object in GP may bind its trace in VP leaving the subject trace free. A subject in the nominative case position NUMP may bind the subject trace without the object in GP constituting a minimal governor. Movement of the subject to PERP and topicalization of the object to a high A'-position leaves traces in NUMP and GP triggering agreement for these features. Such a structure is sanctioned by the partial grammar of Arabic described by Coopmans but it does not generate grammatical sentences, but rather sentences in which the verb bears an agreement morpheme with the number specification of the subject and the gender specification of the object.

The split-AGR hypothesis endemically problematizes the mechanism of subject mapping from D-structure to S-structure along the lines demonstrated above. For this reason, it does not represent a genuine alternative to the analysis presented here, and I assume that distinct ϕ -features are not distributed among distinct projections. In view of the implausibility of syntactic dependencies between degenerate and full agreement, I retain the proposal argued for above that degeneracy of agreement is related directly to overtness of the argument for which agreement obtains. When an argument in an agreement position is overt, it triggers degenerate agreement; when it is non-overt, it triggers full agreement.

With this generalization about the agreement distinction between pre- and post-verbal subjects in mind, consider the following data (‘b’ refers to the number feature ‘dual’):

- (25) a. allaf-a Moen wa Faatima maqaala.
wrote-3MS Moen and Faatima article
‘Moen and Faatima wrote an article.’
b. allaf-at Faatima wa Moen maqaala.
wrote-3FS Faatima and Moen article
‘Faatima and Moen wrote an article.’

- c. Moen wa Faatima allaf-aa maqaala.
Moen and Faatima wrote-3MD article
“Moen and Faatima wrote an article.”
- d. Faatima wa Moen allaf-aa maqaala.
Faatima and Moen wrote-3MD article¹⁰⁶
“Faatima and Moen wrote an article.”

In (25a & b), the verb fails to agree in number with the post-verbal subject, conforming to the generalization already established. However, these two examples display a new property, namely that the verb agrees with only the first of the two members of the conjunct. In (25a), it bears masculine morphology for agreement with *Moen*, and in (25b), it bears feminine morphology for agreement with *Faatima*. When the conjoined subject is pre-verbal, the verb bears a subject agreement suffix that agrees with the subject in number, namely dual. A conjoined subject as a constituent is treated as masculine when at least one of the conjuncts is masculine, hence the verb bears masculine dual agreement.

An explanation for the fact that a verb agrees with only one conjunct of a post-verbal subject is beyond the scope of this paper (but see Aoun, Benmamoun & Sportiche 1994). Whatever accounts for first-conjunct agreement with post-verbal subjects, the fact that pre-verbal subjects do not trigger first-conjunct-only agreement is predicted by the present analysis. A verb that displays degenerate agreement with a post-verbal conjoined subject agrees with a portion of the constituent in [SPEC-AGRSP], namely the first conjunct. A verb that displays full agreement with a preverbal conjoined subject agrees with an NP-trace in [SPEC-AGRSP]. A trace is not a conjoined constituent, hence the impossibility of first-conjunct agreement in this case. Agreement with a trace requires agreement with the entire constituent the trace represents. The fact that a trace is not a conjoined constituent results in the distinction between pre- and post-verbal subjects with respect to the possibility of first-conjunct agreement. These data therefore also fall under the generalization that the Arabic verb agrees in only gender with (the first conjunct of) overt elements in the canonical subject position, and in gender, number, and person with non-overt elements in the canonical subject position. In the following section I will show that sensitivity to features of individual conjuncts in overt elements and failure of sensitivity to features of individual conjuncts in non-overt elements (NP-traces) for agreement extends to the present analysis of German agreement phenomena.

2.3.2 Subject-verb agreement in German

The distinction demonstrated in (25) for Arabic in the agreement paradigm with respect to the position of the subject relative to the agreeing element, as well as first-conjunct agreement with a conjoined constituent, is attested in German in the distinction between the complementizer agreement paradigm and the verbal agreement paradigm. The complementizer agreement paradigm is degenerate with respect to the verbal agreement paradigm, as the table in (9) illustrates. Correlatively, subjects precede verbs, whereas they follow complementizers. German therefore instantiates the generalization that agreement is degenerate for an argument that follows the agreeing element and complete for an argument that precedes the agreeing element.

Further, the German agreement paradigm exhibits sensitivity to the features of the first conjunct of an argument that follows the agreeing element, but not of an argument that precedes the agreeing element. The data below illustrate.

- (26) a. daß-st du komm-st
that-2S you come-2S
“that you come”
- b. daß-st du und Hans komm-ts
that-2S you and Hans come-2PL
“that you and Hans come”

When the subject of a clause introduced by a complementizer is an unjoined pronoun, as in (26a), the same inflection appears on both the complementizer and the verb. However, when the subject is a coordinate structure, the first member of which is a pronoun, as in (26b), a distinction arises between complementizer agreement morphology and verb agreement morphology. Like the post-verbal subject pattern in Classical Arabic, the complementizer agrees only with the first conjunct, displaying second person singular agreement morphology. Like the pre-verbal subject pattern in Classical Arabic, the verb agrees with the coordinate structure as a constituent, displaying second person plural agreement morphology.

The analysis I argued in favor of for the Classical Arabic agreement phenomena relates degenerate agreement and first-conjunct agreement to the overt-ness of the element in the agreement morphology licensing position. For German I propose the same. Just as the Arabic verb bears degenerate agreement with (the first conjunct of) an overt element in the canonical subject position, the complementizer in the German example in (26b) bears degenerate agreement with (the first conjunct of) an overt element in the canonical subject position.

2.4.2 *Topic licensing*

In keeping with the original observation of den Besten (1983) with which I began this analysis, that the complementizer in embedded clauses and the main verb in root clauses are associated with the same surface position, I propose that main verbs in root clauses also occupy CP₂, just as do complementizers in embedded clauses. The verb in this position may be preceded by exactly one constituent. Thus, preverbal WH-elements and topics exclude each other. While this dependency suggests that WH-elements and topics share the same S-structure landing site, namely WHP, such an analysis fails to capture another dependency, namely the fact that only WH-elements, and not topics, may cooccur with a complementizer, as below.

- (36) a. Was hat der Hans dem Professor geliehen?
 what has the Hans the professor lent
 "What did Hans lend the professor?"
- b. Das Buch hat der Hans dem Professor geliehen.
 the book has the Hans the professor lent
 "The book, Hans lent to the professor."
- c. Ich frage mal was daß der Hans dem Professor geliehen hat
 I ask once what that the Hans the professor lent has
 "I'll ask what Hans lent to the professor."
- d. * Ich glaube das Buch daß der Hans dem Professor geliehen hat
 I believe the book that the Hans the professor lent has
 ("I believe the book, that Hans lent the professor")

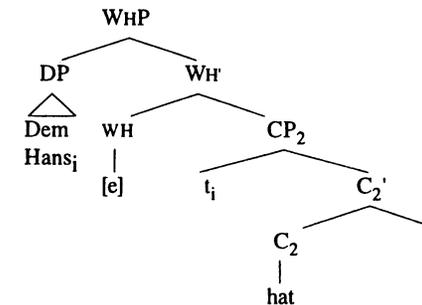
(36d) is ungrammatical because a topic, unlike a WH-element, may not occur with a complementizer. This distinction between topics and WH-elements with respect to licitness of cooccurrence with complementizers is not captured in a phrase structure in which topics and WH-elements are licensed in the same position. There is a dependency between topics and complementizers, namely mutual exclusivity. There is no dependency between WH-elements and complementizers; they may cooccur freely. The dependency between complementizers and topics is evidence of a locality relation between the topic licensing position and the complementizer which does not obtain between the WH-licensing position and the complementizer.

On this basis I propose that topics are licensed in the S-structure landing site of complementizers, CP₂, and that complementizers, unlike verbs, are lexically non-topic-licensors. Thus, an element with the feature [+topic] cannot be licensed in a clause introduced by a complementizer. The proposal that comple-

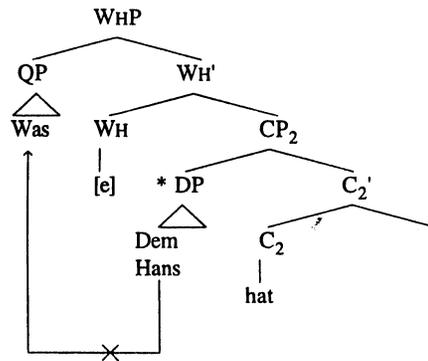
mentizers are lexically non-topic-licensors is a somewhat *ad-hoc* formulation of a dependency that may relate to a deeper incompatibility between topicalization and subordination. It remains to be seen if this mutual exclusivity in German is typical elsewhere. In lieu of a more principled formulation, I will leave the matter here.

Verbs, in any case, license topics. As argued above, topics are licensed in CP₂. CP₂ is also the S-structure landing site of main verbs. Note that the generalized doubly filled comp filter, which prohibits the head and specifier of a projection from simultaneously containing lexical material, disallows the configuration in which the topic and verb both occupy CP₂ at S-structure. For this reason, topics cannot remain in their checking position. I claim that it is precisely this prohibition that characterizes the mutual exclusivity of WH-elements and topics in the initial position in verb-second constructions, even though they have different licensing positions. I claim that WHP functions as an unselective A-bar landing site in non-WH-sentences. In topic constructions, the topic moves from its licensing position [SPEC-CP₂] into [SPEC-WHP] to avoid a violation of the doubly filled comp filter, as in (37a). The topic's monopolization of the WH-licensing position excludes WH-elements from the clause. Alternatively, a WH-element in [SPEC-WHP] monopolizes the only alternative landing site for a topic in [SPEC-CP₂], forcing a violation of the doubly filled comp filter, as illustrated in (37b). For this reason, a WH-element and a topic may not cooccur, even though they have distinct licensing positions.

- (37) a. Dem Hans hat Thomas das Buch gegeben.
 the Hans has Thomas the book given
 "Thomas gave Hans the book."



- b. * Was dem Hans hat Thomas gegeben?
 What the Hans has Thomas given
 ("What did Thomas give Hans?")



In (37a), the topic *dem Hans* has moved out of its licensing site [SPEC:CP₂], the head of which is overt, into the specifier position of the inert WH-projection, the head of which is non-overt, yielding a licit structure. In (37b), the topic *dem Hans*, which is illicit in its licensing site, the head of which is overt, cannot move to the specifier position of the WH-projection, which is occupied by the WH-element *was*. Hence the ungrammaticality of (37b).

The proposal that a [-wh] WHP is an unselective landing site into which topics are forced by the generalized doubly filled comp filter resolves the apparently paradoxical fact that WH-elements and topics are in complementary distribution in spite of data as in (36) which represent evidence that the topic licensing position and the WH-licensing position are syntactically distinct.

2.4.3 Coordinating conjunctions

A verb-second clause may be introduced by a so-called coordinating conjunction such as *denn* or *aber*, as described in §2.1.3. I will discuss *denn* in what follows; *aber* has the same distribution. *Denn* is semantically parallel to the English particle *for* meaning loosely *because*.

- (38) Ich habe Maria getroffen, denn wir waren beide in Rom.
 I have Maria met *denn* we were both in Rome
 "I met Maria, for we were both in Rome."

Denn, like *for*, denotes a relation of indirect causation between the clause following *denn* and the clause preceding. *Denn* may also introduce a clause with a topic or a WH-element in the pre-verbal position.

- (39) a. Ich gehe nicht in den Zoo, denn vor Tieren habe ich Angst.
 I go not to the zoo, *denn* of animals have I fear
 "I'm not going to the zoo, for I'm afraid of animals."
 b. Ich habe nur Milch gekauft, denn was soll ich sonst
 gekauft haben?
 I have only milk bought, *denn* what should I else bought have
 "I only bought milk, for what else should I have bought?"

The position which *denn* occupies is therefore to the left of the S-structure topic- and WH-landing site WHP. By Kayne's (1994) LCA, which I presuppose throughout this paper, this precedence relation indicates that a node dominating *denn*, which I assume in lieu of counterevidence to be the node immediately dominating *denn*, occupies a position asymmetrically c-commanding and therefore hierarchically superior to WHP. These considerations indicate that the form of the complementizer superstructure in the German dialects under examination in the present study is the following, in which CONJP (conjunction phrase) houses *denn* and *aber*.

- (40) [CONJP [WHP [CP₂ [AGRSP [CP₁ ...]]]]]

Subjects occupy AGRSP. Complementizers are base generated in CP₁ and move to CP₂ visibly. In lieu of a complementizer, the verb main verb moves to CP₂ visibly. WH-elements are licensed in WHP. Topics are licensed in CP₂ and move to WHP visibly to avoid a doubly filled comp violation in CP₂. *Denn* or *aber*, and possibly other particles, may or may not appear in CONJP without affecting subordinate material.

3. Structure reiteration

In the second part of this paper, I will show that the structure in (40) instantiates itself twice in main clauses in German. It appears once clause initially, as discussed hitherto, and once clause medially, above VP. The argument begins with the observation that *denn* and *aber* may appear clause medially.

3.1 *Clause medial CONJP*

As distinguished from its clause initial instantiation as a coordinating conjunction, *denn* may appear clause medially as a so-called 'modal particle'. The modal particles are a set of lexical items with a fixed clause medial distribution which fulfill certain (notoriously difficult to formalize) illocutive or discourse pragmatic functions. Modal particles include *denn* (indirect causation), *ja* (emphasis), *doch* (affirmation or focus), *schon* (affirmation), *eigentlich* "actually", *eh* "anyway" and others. I will discuss only *denn* in what follows. See Thurmair (1989) for a more complete discussion. As a modal particle (in which usage it is distinct but similar to its usage as a coordinating conjunction), *denn* signals that the reason for the utterance is contextually dependent. The examples below demonstrate.

- (41) a. Wer ist denn nach Innsbruck mitgefahren?
 who is *denn* to Innsbruck with-driven
 "So who went with you to Innsbruck?"
- b. Ich habe nur Milch gekauft. Was soll ich denn sonst
 gekauft haben?
 I have only milk bought what should I *denn* else bought have
 "I only bought milk. After all, what else should I have bought?"

In both cases, *denn* means that there is a specific reason for the question containing the particle *denn*, and that this reason is evident from the context. (41a) is natural in a context in which the addressee has been discussing the fact that a certain friend could not travel to Innsbruck with himself and others, but has not mentioned who the others are, and the speaker wishes to know who did travel to Innsbruck with the addressee. *Denn* indicates that the question arises because an aspect of the discourse representation is underspecified in that a certain set of individuals is unidentified. (41b) is natural in a context in which the addressee has asked if the speaker bought only milk. *Denn* indicates that the question is a response to the implication that the speaker should have bought something else in addition to milk. In each case, *denn* ties the question to an aspect of the discourse context.

In declarative clauses, the semantic contribution of *denn* to the sentence is as in WH-questions like those in (41), but its phonological form is different. *Denn* is spelled out as *dann* in declarative clauses. This dependency has the appearance of a polarity effect mediated by force.

- (42) a. Thomas ist dann nach Innsbruck mitgefahren.
 Thomas is *dann* to Innsbruck with-driven
 "So Thomas went with us to Innsbruck."
- b. Ich habe dann Milch gekauft
 I have *dann* milk bought
 "So I bought milk."

In each case, *dann* connects the utterance to an aspect of the previous discourse and indicates that the utterance is a response to an unresolved point in the discourse context.

Further, *denn* may appear both clause initially and clause medially simultaneously, as in (43a). The fact that no cooccurrence restrictions hold between clause initial and clause medial *denn* suggests that the position occupied by clause medial *denn* is not related at S-structure to the position occupied by clause initial *denn*. They are distinct positions. In light of these data, I propose that *denn* clause medially occupies a CONJP distinct from clause initial CONJP, as illustrated in (43) b.

- (43) a. Natürlich habe ich nur Milch gekauft, denn was soll ich
 denn sonst gekauft haben?
 naturally have I only milk bought *denn* what should I *denn*
 else bought have
 "Of course I only bought milk, for what else should I have
 bought, then?"
- b. [CONJP *denn* was soll ich [CONJP *denn* sonst gekauft haben]]

Finally, note that parallel to the clause initial CONJP, the clause medial CONJP may also house *aber*.

- (44) a. Thomas ist aber nach Innsbruck mitgefahren.
 Thomas is however to Innsbruck with-driven
 "However, Thomas went with us to Innsbruck."
- b. Ich habe aber Milch gekauft.
 I have however milk bought
 "However, I bought milk."

3.2 *Clause medial WHP*

A clause medial conjunction may immediately precede a WH-element, as in (45).

- (45) Wer hat denn was gekauft?
 who has *denn* what read
 "Who bought what?"

(45) illustrates an apparent instance of WH *in situ*. Since the clause initial WH-landing site is monopolized by the subject WH-phrase *wer*, the object WH-phrase *was* seems to remain in the canonical object position. However, data which follow indicate that the position occupied by *was* in (45) is not the canonical object position, but rather a clause medial WH-landing site.

Denn may be separated from a following non-WH-object by adverbial material, as in (46a & c), but it may not be separated from a following WH-object by adverbial material (when controlling intonation; see below), as (46b & d) show.

- (46) a. Wer hat denn <das Buch> gestern <das Buch> gelesen?
 who has *denn* <the book> yesterday <the book> read
 "Who read the book yesterday?"
 b. Wer hat denn <was> gestern <*was> gelesen?
 who has *denn* <what> yesterday <*what> read
 "Who read what yesterday?"
 c. Wer hat denn <die Maria> gestern <die Maria> angerufen?
 who has *denn* <the Maria> yesterday <the Maria> called
 "Who called Maria yesterday?"
 d. Wer hat denn <wen> gestern <*wen> angerufen?
 Who has *denn* <who> yesterday <*who> called
 "Who called who yesterday?"

A non-WH-object may directly follow clause medial *denn*. A non-WH-object may also alternatively appear lower, following adverbs such as *gestern*. A WH-object does not have the option of appearing lower than the position directly following *denn*. Example (46) shows that while a lower object landing site exists than the position directly following *denn*, WH-objects do not appear in it. These data, which show that the distribution of WH-elements *in situ* is restricted, indicate that the position directly following clause medial *denn* is, in double-WH-constructions, a WH-licensing position for non-subjects.

Intonation is crucial with regard to (46). When the object WH-element bears stress, it may appear in positions lower than the position directly following clause medial *denn*, for example when it bears emphatic stress (see below). Confoundingly, the object normatively bears main stress in unmarked sentence intonation. The judgments in (46) reflect abstraction away from intonation. The judgment is more salient in, for example, contexts where the clause medial WH-

element is not an object and where a distinct element bears focal stress, which deflects whatever stress the WH-element does carry. In the following example, the medial WH-element is the indirect object and the direct object is focused.

- (47) a. Wer hat denn <Hans> das BUCH <Hans> gegeben?
 who has *denn* <Hans> the book <Hans> given
 "Who gave Hans the BOOK?"
 b. Wer hat denn <wem> das BUCH <*wem> gegeben?
 who has *denn* <who> the book <*who> given
 "Who gave who the BOOK?"

Conversely, when a medial WH-element itself bears emphatic stress it is grammatical in positions other than the position directly following clause medial *denn*. This fact points to a parallel between movement to the clause initial WH-position and movement to the clause medial WH-position which supports the proposal of a clause medial WH-position, namely that neither operation is obligatory at S-structure in echo questions. Echo questions represent instances of 'genuine' WH *in situ*, and are characterized by emphatic stress on the WH-word and rising intonation from the WH-word to the end of the string. Without emphasis and rising intonation, the word order displayed in echo questions is illicit. Instances of WH *in situ* in this sense are illustrated below.

- (48) a. A: Gestern ist Thomas angekommen.
 yesterday is Thomas arrived
 "Thomas arrived yesterday."
 B: Gestern ist WER/*wer angekommen?
 yesterday is WHO/*who arrived
 "WHO arrived yesterday?"
 b. A: Wer hat denn gestern abend 'Das Kapital' gelesen?
 who has *denn* yesterday evening the Capital read
 "Who read 'Capital' last night?"
 B: Wer hat denn gestern abend WAS/*was gelesen?
 who has *denn* yesterday night WHAT/*what read
 "Who read WHAT last night?"

In (48a [B]), the WH-element receives emphatic stress and the intonation rises at the WH-element. Correspondingly, the WH-element is licit in a position other than the WH-licensing position [SPEC-WHP], namely in the canonical subject position. A non-emphasized WH-element without rising intonation is illicit when it does not occupy WHP. In (48b [B]), the object WH-element *WAS* does not oc-

copy the position directly following *denn*. It is separated from *denn* by the adverb *gestern abend*. This distribution is licensed, as in (48a [B]) by emphasis on the WH-element and rising intonation. A non-emphasized WH-element without rising intonation is illicit in the position it appears in in (48b [B]).

On the basis of the fact that emphasis and rising intonation at the WH-element license a WH-element *in situ*, and that the distribution of object WH-elements in echo questions and unmarked contexts is distinct, I conclude that object WH-elements in unmarked contexts, for example (45) and (46b & d), are not *in situ*. Rather, the object WH-element's distribution in (45) and (46) is derived by movement. These data therefore support the proposal that the surface position of object WH-elements in double-WH-constructions is a specialized WH-landing site, i.e., WHP. According to this proposal, the phrase structure of German sentences as discussed to this point is as follows.

(49) [CONJP [WHP [CP₂ [AGRSP [CP₁ ... [CONJP [WHP ...

3.3 Clause medial CP

Above, I argued that the distinction in the distribution of object WH-elements in double-WH-constructions in echo questions and non-echo questions indicates that the unmarked distribution of object WH-elements in double-WH-constructions is derived. On the basis of the fact that subject WH-elements in echo questions occupy the canonical subject position, I propose that object WH-elements in echo questions occupy the canonical object position. The position occupied by the object WH-element in (48b [B]) is the canonical object position, AGROP.

That clause medial WHP and AGROP are not immediately adjacent is demonstrated by the following example.

(50) Wer hat denn welchem Studenten gestern das Buch gegeben
 who has *denn* which student yesterday the book given
 "Who gave which student the book yesterday?"

In the example above, *welchem Studenten* occupies clause medial WHP, on the basis of the discussion in 3.2. *Das Buch* occupies AGROP, on the basis of the parallel between its position in the example above and the position of the WH-object *in situ* in (48b [B]), which I claimed occupies AGROP. At least one projection intervenes between clause medial WHP and AGROP, namely the projection housing *gestern*. Various other constituents may appear in place of *gestern*, as demonstrated below.

(51) Wer hat denn welchem Studenten gestern / im Kaffeehaus /
 ohne den Professor zu verständigen / trotz Empfehlung des
 Assistenten das Buch gegeben?
 who has *denn* which student yesterday / in-the coffeehouse
 / without the professor to inform / in-spite-of recommenda-
 tion the assistant the book given
 "Who gave the book to which student yesterday/in
 the cafe/without informing the professor/in spite of the recom-
 mendation of the assistant?"

The position in question may be occupied by a temporal (*gestern*), locative (*im Kaffeehaus*), or propositional (*ohne den Professor zu verständigen*) modifier.

It is further the case that all of the possible interveners between the WH-phrase and the object may occur in one sentence:

(52) Wer hat denn welchem Studenten gestern im Kaffeehaus
 ohne den Professor zu verständigen trotz Empfehlung des
 Assistenten das Buch gegeben?
 who has *denn* which student yesterday in-the coffeehouse
 without the professor to inform in-spite-of recommendation
 the assistant the book given
 "Who gave the book to which student yesterday in the cafe
 without informing the professor in spite of the recommen-
 dation of the assistant?"

(52) suggests that a multitude of positions intervene between clause medial WHP and the surface position occupied by the object in e.g., (50). However, I claim that the string *gestern im Kaffeehaus ohne den Professor zu verständigen trotz Empfehlung des Assistenten* in (52) (which I will henceforth abbreviate as *gestern...*) is a single constituent (albeit containing several smaller constituents) occupying a single position between WHP and the surface object position. Evidence for this claim comes from the fact that this string may appear in the initial position in a verb-second clause.

(53) Gestern im Kaffeehaus ohne den Professor zu verständigen
 trotz Empfehlung des Assistenten habe ich das Buch dem
 Thomas gegeben.
 Yesterday in-the coffeehouse without the professor to in-
 form in-spite-of recommendation the assistant have I the
 book the Thomas given

“Yesterday in the coffeehouse, without informing the professor, in spite of the recommendation of the assistant, I gave the book to Thomas.”

The verb-second phenomenon is characterized by the requirement that exactly one constituent precede the verb, and no more than one. The grammaticality of (53) therefore indicates that the string preceding the verb *habe* is one constituent. Like a topic, furthermore, it is incompatible with a preverbal WH-element.

- (54) * Gestern im Kaffeehaus was hast du getrunken?
yesterday in-the coffeehouse what have you drunk
("What did you drink yesterday in the coffeehouse?")

The preverbal string in (53) is the same string that intervenes between the WH-phrase and the object in (52). I propose that in both cases the string is a single constituent occupying a single A-bar position. Since the elements that occupy this position do not as a group consistently affect a particular semantic parameter such as location or time frame, I assume that this position is an unspecialized A-bar landing site for elements that originate within a thematic configuration elsewhere in the syntax, i.e., it is a CP.

A sentence adverb may follow the string intervening between the WH-phrase and the object, and precede the object, as below.

- (55) Wer hat denn welchem Studenten gestern... vorübergehend
das Buch geliehen?
who has *denn* which student yesterday... temporarily the
book lent
"Who temporarily lent which student the book yesterday...?"

Vorübergehend belongs to the class of adverbs, also including e.g., *notwendigerweise* "necessarily", *kurz* "briefly", etc. In English, it is the class of elements morphologically characterized by the *-ly* suffix. *Vorübergehend* in (55) does not belong to the constituent *gestern...* as evidenced by the fact that it may not cooccur with the constituent *gestern...* in the preverbal position in verb-second clauses:

- (56) <*vorübergehend> gestern... <*vorübergehend> habe ich
dem Thomas <vorübergehend> das Buch geliehen.

<*temporarily> yesterday... <*temporarily> have I the
Thomas <temporarily> the book lent
"Yesterday... I temporarily lent Thomas the book."

Vorübergehend may not appear with the string *gestern...* or any part of it preverbally in verb-second clauses. This fact indicates that *vorübergehend* is not part of the constituent *gestern...* As expected in light of this conclusion, *vorübergehend* may not intervene between any two elements in the constituent *gestern...* clause medially, as illustrated below.

- (57) Wer hat denn welchem Studenten gestern
<*vorübergehend> im Kaffeehaus <*vorübergehend> ohne
den Professor zu verständigen <*vorübergehend> trotz
Empfehlung des Assistenten <vorübergehend> das Buch
geliehen?
who has *denn* which student yesterday <*temporarily>
in-the coffeehouse <*temporarily> without the professor to in-
form <*temporarily> in-spite-of recommendation the assis-
tant <temporarily> the book lent
"Who temporarily lent the book to which student yesterday
in the cafe without informing the professor in spite of the
recommendation of the assistant?"

(56) and (57) show that the position occupied by the sentence adverb *vorübergehend* in these cases is distinct from the position occupied by the string *gestern...* In addition to the general A-bar position following clause medial WHP, therefore, there is an adverb position as well. In (57), the general A-bar position is occupied by the string *gestern...* and the adverb position is occupied by the sentence adverb *vorübergehend*. These considerations indicate that the phrase structure of German as discussed hitherto is as illustrated below. I notate the general A-bar position as 'CP', and the adverb position as 'AdvP'.

- (58) [CONJP [WHP [CP₂ [AgrSP [CP₁ ... [CONJP [·WHP ...
[CP ... [AdvP ...

3.4 Clause medial AGRP

A sentence adverb such as *vorübergehend* may not precede modifiers of the type represented by the string *gestern...* in (57). (59) is therefore ungrammatical.

- (59) * Wer hat denn welchem Studenten vorübergehend gestern...
das Buch geliehen?
who has *denn* which student temporarily yesterday... the
book lent
("Who temporarily lent which student the book yesterday... ?")

Elements in the clause medial CP and AdvP in (58) therefore have a fixed distribution with respect to each other. The ungrammaticality of (59) means that the ordering of the CP occupied by *gestern...* and the AdvP occupied by *vorübergehend* is strict. The fact that *vorübergehend* can move in general, as demonstrated by its acceptability in the clause initial position in verb-second clauses, but may not appear in an intermediary position between *welchem Studenten* and *gestern...* indicates that no such position is available as a landing site. Clause medial WHP and CP are therefore adjacent, and *vorübergehend* occupies AdvP.

It is clear that the object may follow AdvP at S-structure, as in sentences such as (55), and (60) below. The object may also intervene between the clause medial CP and AdvP, as shown in (60).

- (60) Wer hat denn welchem Studenten gestern <das Buch>
vorübergehend <das Buch> geliehen.
who has *denn* which student yesterday <the book> tem-
porarily <the book> lent
"Who gave which student the book yesterday?"

In (60), the object may either precede or follow the adverb *vorübergehend*, which I have argued to occupy AdvP. This fact may mean either that the position of the adverb is stationary while the object has the choice of appearing before or after the adverb, or it may mean that the object is stationary while the adverb has the choice of appearing before or after the object (discounting the possibility of some form of opaque complexity in the ordering relation). I will argue for the former proposal, that the position of the adverb is fixed in AdvP and an object landing site lies between the the clause medial CP and AdvP, on the basis of the fact that the alternation affects the semantic character of the object but not the adverb, indicating that the alternation operates on the object, not on the adverb.

The effect relates to the specificity of the object. When *das Buch* in (60) is replaced by the indefinite DP *ein Buch* "a book", a difference of interpretation arises with respect to whether the object appears before or after the adverb. Compare *ein Buch* in each of its two possible surface positions in (61).

- (61) Wer hat denn welchem Studenten gestern <ein Buch>
vorübergehend <ein Buch> geliehen?
who has *denn* which student yesterday <a book> temporar-
ily <a book> lent
"Who temporarily lent which student a book yesterday?"

When the object *ein Buch* occurs to the right of the adverb *vorübergehend*, it must be interpreted non-specifically. A specific interpretation, in which the DP refers to a certain book available within the discourse context, is unavailable or extremely awkward when the object occupies the post-adverb position. Conversely, when the object appears to the left of the adverb *vorübergehend*, the specific interpretation is both available and preferred. The position of the object with respect to AdvP therefore correlates with specificity.

There is no corresponding effect on the interpretation of the adverb. I assume *a priori* that when an alternation involving two constituents semantically affects one and not the other, then it is reasonable to assume that the semantically affected constituent is the target of the transformation governing the alternation, and the semantically unaffected constituent is not involved. Since the adverb is unaffected by the alternation, I conclude that the transformation operates only on the object. The ordering alternation illustrated in (61) is therefore a manifestation of a movement operation applied to the object. There is therefore an object landing site to the left of the position housing sentence adverbs such as *vorübergehend* and to the right of the position housing elements such as those in the string *gestern...* in (57), in addition to the position below both clause medial CP and AdvP that an object may occupy as shown in (60) and (61).

Mahajan (1990) claims that the specific interpretation of a DP correlates with its occurrence in an agreement projection. Objects in AGROP receive a specific interpretation, whereas objects lower than AGROP do not. On the basis of Mahajan's proposal on the relation between specificity and syntactic distribution and on the basis of the correlation between the position of the object and the interpretation of specificity in German demonstrated in (61), I conclude that the German object landing site correlated with specificity, namely the position to the left of sentence adverbs such as *vorübergehend*, is the canonical object position AGROP. The object is in AGROP in the example below.

- (62) Wer hat denn welchem Studenten gestern ein Buch
vorübergehend geliehen?
who has *denn* which student yesterday a book temporarily lent
"Who temporarily lent which student a book yesterday?"

In (62), the WH-phrase *welchem Studenten* occupies the clause medial WHP subjacent to the clause medial CONJP. *Gestern* occupies the clause medial CP, *ein Buch* occupies AGROP, and *vorübergehend* occupies ADVP. I demonstrated with examples (52), (53), (56) and (57), that whenever material grammatically intervenes between a clause medial WH-element and a high object, then the intervening material forms a single constituent occupying the clause medial CP. Examples where intervening material does not form a single constituent, as evidenced by the incompatibility of the string in question in the clause initial position in a verb-second clause, as in (59) compared to (56), are consistently ungrammatical. Impossibility of intervening material indicates lack of an intervening landing site. I conclude that the clause medial CP and the canonical object position AGROP are adjacent, the former preceding the latter, as illustrated below.

- (63) [CONJP [WHP [CP₂ [AGRSP [CP₁ ... [CONJP [WHP [CP [AGROP ... [ADVP ...

3.5 Low clause medial CP

It is less clear that AGROP is adjacent to ADVP. Examples such as (64) indicate otherwise.

- (64) Wer hat denn welchem Studenten gestern <das Buch> im Kaffeehaus <das Buch> ohne den Professor zu verständigen vorübergehend geliehen
 who has *denn* which student yesterday <the book> in-the coffeehouse <the book> without the professor to inform temporarily lent
 "Who temporarily lent which student the book yesterday in the cafe without informing the professor?"

Though the object *das Buch* may intervene in a string that was demonstrated in examples (52) and (53) to act as a constituent, in the case when the object intervenes, as in (64), the string is not a constituent. The object may not intervene when the string appears in the initial position of a verb-second clause, as below.

- (65) Gestern <*das Buch> im Kaffeehaus <*das Buch> ohne den Professor zu verständigen habe ich dem Thomas <das Buch> vorübergehend geliehen.

Yesterday <*the book> in-the coffeehouse <*the book> without the professor to inform have I the Thomas <the book> temporarily lent
 "I temporarily lent Thomas the book yesterday in the cafe without informing the professor."

A string preceding the main verb in a verb-second clause must represent exactly one constituent. The fact that the object may not appear in the preverbal string in (65) shows that the object does not form a constituent with the rest of the string. Nor does it form a constituent with any part of the string, for example the portion *ohne den Professor zu verständigen*, as demonstrated below.

- (66) * Das Buch ohne den Professor zu verständigen habe ich dem Thomas geliehen.
 the book without the professor to inform have I the Thomas lent
 ("I lent Thomas the book without informing the professor.")

In (64), therefore, the object does not form a constituent with the material that follows it. Demonstrably, therefore, a separate constituent intervenes between the object and the adverb *vorübergehend*.

This constituent is of the same type as that occupying the clause medial CP. As (64) shows, what may appear as a string or as part of a string preceding the object in AGROP may appear as a string or as part of a string following the object, but preceding sentence adverbials such as *vorübergehend*. These facts show that a position with the identical character of the clause medial CP, i.e., another CP, exists directly subjacent to AGROP and superjacent to ADVP. These observations indicate the following phrase structure for German finite clauses:

- (67) [CONJP [WHP [CP₂ [AGRSP [CP₁ ... [CONJP [WHP [CP [AGROP [CP ...

where ADVP discussed above and the additional subject agreement projection discussed in §2.3.2, as well as TP and VP, lie below the rightmost CP in (67). A discussion of the relation of ADVP, the low subject agreement projection, and TP to the template exemplified in (67) or the possibility of material intervening between the two instantiations of the template would take the present study somewhat afield of its original intent. I therefore leave these issues for future work.

4. Conclusion

The hypothesis investigated in the preceding sections is that syntactic structure reiterates within clauses. (67) shows that a weak version of this hypothesis holds for finite clauses in dialects of German displaying complementizer agreement. The strong version of the hypothesis, that syntactic structure in German consists exclusively of iterations of the template below or something close to it, obviously remains to be investigated.

(68) [CONJP [WHP [CP [AGRP [CP]]]]]

If there is truth to the strong version of the hypothesis, then the occurrence of functional projections in German is restricted by their distribution in a fixed template. The template in (68) represents a strict typology of functional projections.

The impact of such a typology is manifold. For example, I argued in §2.3.1 that AGR is not split, but rather that a single agreement projection is sensitive to all ϕ -features of its specifier, though it may not reflect all of them morphologically. The unified-AGR hypothesis relates the features person, number and gender to a single category, i.e., it typologizes them in a classification system well known to linguistic inquiry, namely syntactic category. The idea that functional projections occur in a template disallows analyses in which every feature may head its own syntactic projection and forces functional projections to be somewhat general with respect to their licensing properties. This generalization of licensing properties in turn groups features relevant to grammar together according to their licensing site, resulting in a typology of features on the basis of distribution. The existence of such a typology answers the intuition that for example features such as person, number and gender 'go together' in a sense that excludes for example [+wh].

Further, Abraham (1995) has proposed that the semantic value of a particular functional category may be related to other instantiations of the same category through operator movement. He claims that sentence operators which determine illocutive force and which are licensed in a complex complementizer superstructure at LF, appear at S-structure as clause medial modal particles. The positions in which the clause medial modal particles are fixed with respect to each other mirror the order of their LF licensing positions in the left periphery. Specifically, Abraham claims that the complementizer superstructure in Germanic consists of three positions—C1, C2, and C3, which function as LF licensing positions for the modal particles, and that these three positions recur clause medially. The

modal particles have a fixed distribution within the clause medial instantiation of the complex CP, as below.

(69) [C1 [C2 [C3 ... [C1 [C2 [C3 ...

At LF, the modal particles raise from their base position in one of the three clause medial comp positions to the corresponding position in the clause initial complementizer superstructure. They raise in order to fulfill their operator function by occupying a position with sentential scope that determines illocutive properties of the utterance. They are parallel to WH-operators in this respect, which raise from a thematic position to a specialized WH-landing site in order to fulfill properties of the landing site that relate to the determination of sentence type. Abraham's proposal that the recurrence of syntactic structure is connected to semantic functions relating iterations of a category sheds some light on the semantic ramifications of reiterative syntax.

In addition to theories of syntax and semantics, reiterative syntax has utility in the theory of learnability as well, as discussed in §1. The utilization of the same syntactic template in different regions of a sentence reduces the number of basic building blocks of which the sentence consists while still allowing for a great deal of fine structure. It also significantly narrows the spectrum of possible linear combinations of syntactic categories. In the strong version of the hypothesis, it eliminates variation in the ordering of projections as a parameter from the grammar. Thus, in addition to constraining functional projections by type, as mentioned above, it constrains their ordering also. Such restrictions on the number of options available in the process of language acquisition simplify the task of the language learner. The innateness of syntactic templates therefore has the functional utility of reducing complexity in the grammar in several respects. Whether natural language capitalizes on this utility generally remains to be shown. But Poeppel & Wexler's (1993) experiments indicating that clause structure is innate, the results of the present study showing that German clause structure includes reiterations of large blocks of structure, and Abraham's conclusions suggesting that the reiteration of syntax may have semantic relevance, lend credence to the hypothesis that natural language exploits the utility of reiterative syntax generally. The present study is limited to the attempt to show that syntactic structure reiterates within clauses in German. Extensions of this idea to other clause types and other languages, as well as to semantics and learnability, remain to be investigated. This paper is intended to provide some groundwork for further inquiry into these matters.

REFERENCES

- Abraham, Werner. 1995. "Warum stehen nicht alle Modalpartikel in allen Satzformen"? *Deutsche Sprache* 23,2.124-146.
- Aoun, Joseph, Abbas Benmamoun & Dominique Sportiche. 1994. "Agreement, Word Order, and Conjunction in Some Varieties of Arabic". *Linguistic Inquiry* 25,2.195-220.
- Baker, Mark. 1985. "The Mirror Principle and Morphosyntactic Explanation". *Linguistic Inquiry* 16,3.373-416.
- . 1995. *The Polysynthesis Parameter*. Oxford: Oxford University Press.
- Bayer, Joseph. 1984. "COMP in Bavarian Syntax". *Linguistic Review* 3,3.209-274.
- Besten, Hans den. 1983. "On the Interaction of Root Transformations and Lexical Deletive Rules". *On the Formal Syntax of the Westgermania*, ed. by Werner Abraham, 47-131. Amsterdam: John Benjamins Ltd.
- Chomsky, Noam. 1970. "Remarks on Nominalization". *Readings in English Transformational Grammar*, ed. by Roderick Jacobs & Peter Rosenbaum, 184-221. Waltham, Mass.: Ginn & Company.
- . 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam. 1993. "A Minimalist Program for Linguistic Theory". *The View from Building 20. Essays in Linguistics in Honor of Sylvain Bromberger*, ed. by Ken Hale & Samuel J. Keyser, 1-52. Cambridge: MIT Press.
- . 1995. *The Minimalist Program*. Cambridge: MIT Press.
- Coopmans, Peter. 1994. "Comments on the Paper by Ouhalla". *Verb Movement*, ed. by David Lightfoot & Norbert Hornstein, 73-85. Cambridge: Cambridge University Press.
- Henry, Alison. 1995. *Belfast English and Standard English: Dialect Variation and Parameter Setting*. Oxford: Oxford University Press.
- Hoekstra, Eric. 1993. "Dialectal Variation inside CP as Parametric Variation". *Dialektsyntax*, ed. by Werner Abraham & J. Bayer, 161-179. Linguistische Berichte Sonderheft 5. Opladen: Westdeutscher Verlag.
- Johnson, Kyle. 1990. "The Syntax of Inflectional Paradigms". ms., University of Wisconsin, Madison.
- Kayne, Richard S. 1994. *The Antisymmetry of Syntax*. Cambridge: MIT Press.
- Koopman, Hilda. 1996. "The Spec-Head Configuration". *Syntax at Sunset: UCLA Working Papers in Linguistics, 1996*, ed. by Edward Garrett & Felicia Lee, 37-65. University of California, Los Angeles.
- & Dominique Sportiche. 1988. "Subjects." ms, University of California, Los Angeles.
- Mahajan, Anoop. 1990. *The A/A' Distinction and Movement Theory*. PhD dissertation, MIT, Cambridge, Mass.
- Ouhalla, Jamal. 1994. "Verb Movement and Word Order in Arabic". *Verb Movement*, ed. by David Lightfoot & Norbert Hornstein, 41-72. Cambridge: Cambridge University Press.
- Poepfel, David & Kenneth Wexler. 1993. "The Full Competence Hypothesis of Clause Structure in Early German". *Language* 69.1-33.

- Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge: MIT Press.
- Sportiche, Dominique. 1992. "Clitic Constructions". ms., University of California, Los Angeles.
- Thurmair, Maria. 1989. *Modalpartikeln und ihre Kombinationen*. Linguistische Arbeiten 223. Niemeyer Verlag: Tübingen.
- Travis, Lisa. 1984. *Parameters and Effects of Word Order Variation*. PhD dissertation, MIT, Cambridge, Mass.
- Zwart, C. Jan-Wouter. 1993. *Dutch Syntax. A Minimalist Approach*. PhD dissertation, University of Groningen.
- . 1993. "Clues from Dialect Syntax: Complementizer agreement". *Dialektsyntax*, ed. by Werner Abraham & Joseph Bayer, 246-270. Linguistische Berichte Sonderheft 5. Opladen: Westdeutscher Verlag.