

ON THE ABSENCE OF CASE CHAINS IN BAMBARA*

In Bambara, problems concerning transitivity appear in sentences containing perfective aspect, and in causatives. These problems will be shown to arise from the interaction of verb movement and the property specific to Bambara that Case cannot be transmitted along a verbal chain. It will be argued that this property follows from a particular setting of a parameter which either allows Case chains or disallows Case chains in a particular language. Quite generally, Case chains can never be formed in Bambara. In the nominal system, the lack of Case chains will account for the fact that syntactic NP movement occurs in more configurations than in a language like English, and for the absence of expletive pronouns that transmit Case at S-structure. I will also suggest that the absence of Case chains has consequences for the syntax of predicate nominals, and may explain the absence of nominal small clauses. Finally, the absence of Case chains suggests a possible account for the absence of syntactic Wh-movement in Bambara.

1. INTRODUCTION

In this paper, I want to argue that CASE CHAINS are generally absent in Bambara, a Mande language spoken in Mali. Case chains arise when an NP that needs to satisfy the Case filter occurs in a position where it is not governed by the element that assigns Case to it. VERBAL CHAINS arise as a consequence of V movement. For example, when a verb moves to INFL, a verbal Case chain is formed whereby the Case-assigning properties of the head of the chain are transmitted through the chain to the trace of the verb. Case chains also occur in the nominal system when an NP satisfies the Case filter through Chain formation with an expletive pronoun. (Cf. *There are people in the room.*) In the spirit of Koopman (1984), I will argue that in a particular language, Case chains are either absent or present for all types of chains, i.e. both nominal chains and verbal chains.

* This article first circulated in 1987. The present version contains some minor changes and an all new conclusion. I would like to thank the audiences at UCLA where this material was first presented and developed, as well as Mark Baker, Noam Chomsky, Harold Crook, Richard Kayne, Dominique Sportiche and various anonymous reviewers for their comments and suggestions. The Bambara data discussed here are drawn from Bird, Hutchison and Kante (1976), Bird and Kante (1976), Bird (1966), Courtenay (undated), and my own fieldwork. Standard Bambara orthography will be adopted, except for tones, which will not be marked.

Case chains will be argued to be absent in a language like Bambara, but present in languages like French or English.¹ In this paper I will first focus on the description and analysis of certain aspects of the verbal and nominal syntax in Bambara. Discussion of parametric variation will be confined to Section 4.

Before turning to the actual discussion and analysis of the data, I will make explicit the particular theoretical assumptions I adopt, and present some necessary background information on the properties of surface word order in Bambara, as well as an analysis.

The theoretical assumptions underlying the analysis presented here are the standard theoretical assumptions of the so-called GOVERNMENT-BINDING THEORY, unless indicated otherwise. The THETA CRITERION, the PROJECTION PRINCIPLE and the CASE FILTER will be presupposed. I further assume the EXTENDED X-BAR THEORY and the definition of GOVERNMENT of Chomsky (1986a), according to which both a head and its specifier position ([SPEC, XP]) are governed by an external governor. I will also assume the now-standard VP-INTERNAL-SUBJECT hypothesis (Koopman & Sportiche 1985, 1991; Kuroda 1986; Kitagawa 1985; Larson 1988; Fukui 1986; Speas 1990; among others), in which thematic subjects originate as sisters to their maximal projection, i.e. as sisters to XP. In languages with an obligatory [SPEC, IP] position, like English, the subject must raise to [SPEC, IP] (a non-theta position). This movement is forced by Case theory, [SPEC, IP] being the position to which nominative Case is assigned by INFL. The treatment of external arguments as sisters to maximal projections makes it possible for the [SPEC, XP] position, which is in principle available, given X-bar theory, to contain other material. I will argue below that this is the case in Bambara: the direct object occurs in the [SPEC, VP] position.

Bambara is a language with extremely rigid word order. The linear word order in tensed sentences is presented in (1):

- (1) (AdvP/S') NP1 INFL (NP) V (PP) (ADV) S'

Tensed sentences must contain an overt NP (indicated as NP1 in (1)) preceding an INFL (for a complete list of elements occurring in INFL and

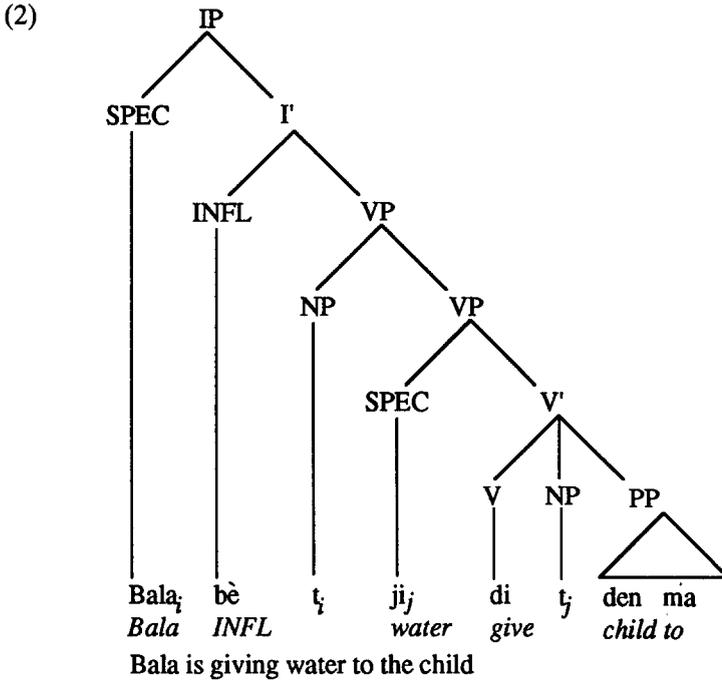
¹ Case chains have been argued to exist by Safir (1985), Chomsky (1986), Hoekstra and Mulder (1990) among others. Belletti (1988), Borer (1984), Chomsky (1991), and Pollock (1981) argue that there is no Case chain between the existential pronoun *there* and the NP that is related to *there* in existential constructions.

their properties, see Tables I and II below). This shows that [SPEC, IP] must contain lexical material. (Affirmative imperative clauses form the only exception: these lack both NP1 and INFL.) Bambara is neither a null-subject nor a null-object language.

There is no person or gender marking, nor overt subject-verb agreement. There is no overt Case marking, and the pronominal system shows no reflexes of the abstract Case relations. NPs always occur to the left of their Case assigners (i.e. I, V, P and N). Direct objects, or more precisely, NPs that depend on the verb for structural (accusative) Case, must precede the verb. Furthermore, only one NP can precede the verb, and all other complements must follow. I adopt a variant of my earlier analysis (Koopman, 1984) of similar facts in Mahou, namely that all internal arguments follow the verb at D-structure, that [SPEC, VP] precedes the verb, and that NPs which must be licensed by structural Case move to [SPEC, VP]. Accusative Case assignment now parallels nominative Case assignment, and structural Case is now uniformly assigned to SPEC positions. Movement to [SPEC, VP] is an instance of NP movement: movement is forced by Case theory, the head of the chain is Case marked, and the tail of the chain is theta marked.²

Given these particular theoretical assumptions about subjects, and the properties discussed above, the surface word order in (1) is assigned the following S-structure:

² This proposal seems well integrated into the theory now (cf, Larson (1988) Sportiche (1990), and Chomsky (1991), who suggests that the object in Bambara could actually be in [SPEC, AGR-0], the position that triggers object agreement. In an earlier version of this paper, I suggested that the idea that direct objects can appear in [SPEC, VP] has direct consequences for the analysis of languages in which the verb agrees with the direct object. If agreement is always the reflection of a SPEC-Head relation, the direct object must appear in [SPEC, VP] when the verb agrees with it. Kayne (1985) essentially argues for the same point: he argues that what looks like object agreement in past participle constructions in Romance is, in fact, better analyzed as agreement with the structural subject of the participle.



Both subject and direct object must undergo A-movement in order to satisfy the Case filter (to [SPEC, IP] and [SPEC, VP], respectively).³

2. THE VERBAL SYSTEM

2.1. *The Realization of Perfective Aspect*

Bambara has a rich system of morphologically distinct elements occurring in tensed INFL; all but one (the perfective aspect *-ra*) are realized as independent INFL (which I also will call AUXILIARIES). The phonological shape of INFL varies not only with the tense/mood/aspect features of a clause, but also with the categorial features of the complement of INFL. Table I presents the INFLs that are followed by a VP complement. The syntax of INFL will be completed in Table II in Section 3, which contains all INFL taking XP complements other than VP.

³ The rigid word order of Bambara seems to be related to the limited use Bambara can make of A'-positions. A'-positions can only contain adjuncts and internally headed relative clauses. Syntactic Wh-movement is absent (except for one particular case: *why* adjuncts, cf. Section 3.2).

TABLE I. INFL followed by VP complements

Affirmative	Negative	Meaning
bè	tè	(. . imperfective, generic, immediate future . .)
<i>ye/-ra</i>	ma	(. . perfective . .)
(bè) na	tèna	(. . future . .)
mana	-	(. . hypothetical future . .)
ka	kana	(. . hortative, subjunctive . .)

Table I shows the forms of the affirmative INFL and their negative counterparts, and indicates in purely descriptive terms the particular tense/aspect they express. All elements in INFL can be preceded by the past tense marker *tun*.⁴

Table I shows that INFL contains an independent auxiliary, *except with perfective aspect in affirmative clauses*. Perfective aspect is realized either as an independent INFL (*ye*), or as a suffix (*-ra*, with the variants *-la*, *-na*, depending on the phonological properties of the verb it is suffixed to). The choice of *ye* or *-ra* depends on the syntactic properties of the main verb; the determining factor is whether the verb is transitive (an accusative Case assigner) or not: *-r-* must be used with all verbs, except with transitive verbs that license an NP that they govern. With these verbs *ye* must be used.

(3) Intransitive verbs: *-ra/*ye*

- a. A kasi-*ra*.
s/he cry PERF
 S/he cried.

- b. *A *ye* kasi.
s/he PERF cry

(4) Unaccusative verbs: *-ra/*ye*

- a. A taa-*ra*.
s/he go PERF

- b. *A *ye* taa.
s/he PERF go

⁴ I will refer to INFL as one syntactic constituent, although, following Pollock (1989) and others, it is presumably made up of several heads (Tense, Negation, Aspect, and so on). I will refer to INFL as either INFL or I.

- (5) Passive verbs:⁵ -ra/*ye
- a. Ji min- na sisan (den fè).
water drink PERF now child by
 The water has been drunk now (by the child).
- b. *Ji ye min sisan (den fè).
water PERF drink now child by

The examples in (3), (4) and (5) show that the perfective suffix appears on all types of intransitive verbs; the perfective with *ye* may not be used. The feature that characterizes the verbs in (3), (4) and (5) is that they do not assign accusative Case.

Let us next look at the distribution of the perfective with transitive verbs, where I use TRANSITIVE to refer to a verb which assigns both an external theta-role and an internal one. The pattern which obtains with the core case of transitive verbs (i.e. those verbs which c-select an argument of the category NP) is presented in (6); the pattern of those that c-select for PPs is presented in (7);

- (6) Verbs c-selecting NP: *-ra/ye
- a. Den ye ji min.
child PERF water drink
 The child drank water.
- b. *Den min- na ji. /*Den ji min- na.
child drink PERF water child water drink PERF
- c. Den ye cè ye.
child PERF man see
 The child saw the man.
- d. *den ye- ra cè. /*Den cè ye- ra.
child saw PERF men child man saw PERF

⁵ Although there is no overt passive morphology in Bambara, these verbs behave exactly like passive verbs: the external argument can optionally be reassigned through a *by*-phrase, the [SPEC, IP] is a non-thematic position, and accusative Case is not assigned.

- (7) Verbs c-selecting a PP: -ra/*ye
- a. N bò- ra i ye.
I visit PERF you at
I visited you.
- b. *N ye bò i ye.
I PERF visit you at
- c. N son- na a ma.
I agree PERF it to
I agreed to it, I accepted it.
- d. *N ye son a ma.
I PERF accept it to
- e. N maga- ra a la.
I touch PERF it on
I touched it.
- f. *N ye maga a la.
I PERF touch it on
- g. N nyina- na a kò. (*nyina . . . kò*: 'forget')
I forgot PERF it behind
I forgot it.
- h. *N ye nyina a kò.
I PERF forget it behind

With transitive verbs that take a direct object NP (6), the independent INFL *ye* must occur. Transitive verbs that take a PP, however, must take the suffix *-ra*.⁶

The choice of the perfective aspect is thus clearly related to the licensing

⁶ Note that I assume that the verbs in (7) assign an external theta role, as well as an internal theta role, and not two internal theta roles. The property of assigning an external theta role allows an account of the fact that these verbs are potential Case assigners. Precisely this class of verbs can optionally license 'cognate objects': if a cognate object is present, the verb has to assign it accusative Case, and *ye* is selected:

- (i) N ye n bolo maga a la.
I PERF my hand touch it on
I touched it with my hand.

of the internal NP argument. As shown above, the difference between the two types of transitive verbs in (6) and (7) can be expressed in terms of their Case properties. Transitive verbs that c-select for a direct object NP *must* assign (structural) Case to this NP; those that c-select for a PP do not assign Case to this PP, since PPs do not need Case.⁷

Summing up, then, the distribution of the perfective aspect markers *-ra* and *ye* can be described as in (8):

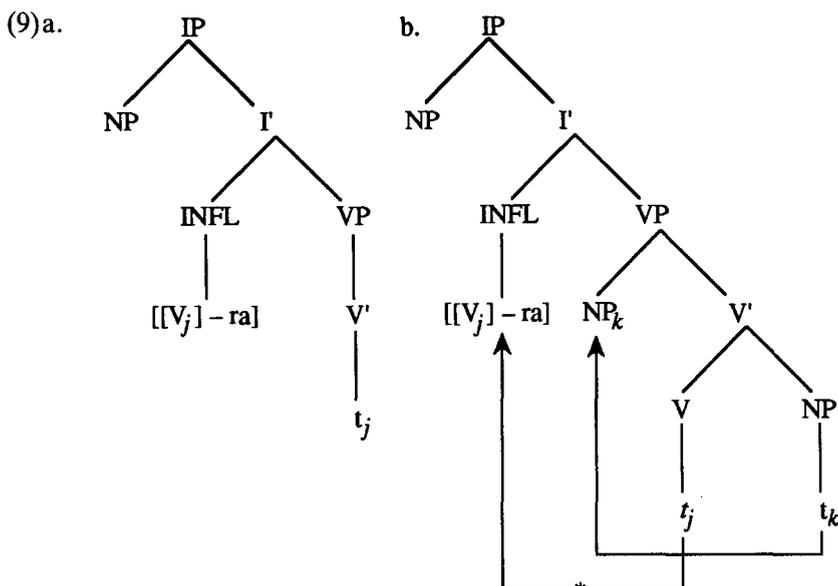
- (8)a. *ye* occurs if V assigns structural accusative Case.
 b. *-ra* occurs if V does not assign structural accusative.

How can we account for this generalization? Let us start with (8a), and suppose that the perfective aspect *-ra* is a realization of INFL. It will have to merge morphologically with the head of the VP, since it appears as a suffix on the verb. We know that there are in principle two ways in which the suffix and the verb can merge: by moving INFL to V (as in English see Emonds (1978)), or V to INFL, as in French (cf. Emonds (op. cit.)) and Vata (Koopman 1984). Although distributional evidence, such as the distribution of adverbials, is not available in Bambara (adverbials cannot occur between INFL and V), I will assume that the V moves into INFL in Bambara: V movement seems to be the most economical option (cf. Chomsky 1989). Moreover, this assumption will allow us to account for the *-ra/ye* alternation.

The suffix *-ra* cannot occur on accusative-Case-assigning verbs: a 'dummy' INFL *ye* appears, the direct object appears in [SPEC, VP], and the verb follows the direct object, i.e., the verb remains in situ. V movement appears to be blocked in this configuration. Examples (9a) and (9b) show the configurations in which V movement can apply and those in which it cannot. (For ease of exposition, movement of the subject from VP-internal position is omitted from the trees):

⁷ I exclude from the discussion transitive verbs that c-select for CP complements. Tensed (but not infinitival) CP complements must be related to an overtly realized Case position, and the verb acts like a transitive Case-assigning verb with respect to the selection of *ye/-ra*:

- (i) [____(tensed) S'], **-ra/ye*:
 N ye a fò i taa-ra.
 I PERF it say you go PERF
 I said that you left.



The structure in (9b) differs from that in (9a) in two ways: first, there is an overt NP in [SPEC, VP] in (9b), but not in (9a), and second, the verb has to assign accusative Case in (9b), but not in (9a). Furthermore, the ungrammatical (9b) contains a verbal trace, as opposed to the grammatical (9a), which contains a lexical verb in situ in the VP.

What accounts for the pattern above? Clearly nothing in the present framework rules out V-to-INFL movement in these configurations, since government is respected. Therefore, either the movement of the object somehow blocks verb movement, or, alternatively, movement of the verb leads to a configuration in which the object is not licensed.

Consider the first alternative. The object NP has undergone NP movement to [SPEC, VP], leaving a trace subject to the EMPTY CATEGORY PRINCIPLE (ECP). The trace of the moved NP is antecedent-governed from [SPEC, VP]. If, however, traces not only need to be antecedent-governed, but must also be head-governed (Jaeggli 1982, Stoell 1986, Koopman and Sportiche 1986, and Aoun et al. 1987), and if a verbal trace is not a head governor, as proposed in Aoun et al. (1987), verb movement could be blocked because the trace of the object would not be head governed by the trace of the verb.

There are good reasons to reject this proposal. First, the Bambara situation is not parallel to the Spanish one as described by Torrego (1984), who proposed that a verbal trace is not a proper governor. In Bambara, we are dealing with 'short' NP movement, and antecedent government is

satisfied. Short (Wh-)movement of the object in conjunction with verb movement does not create an ECP problem for Torrego: an ECP violation only arises in the case of long Wh-movement of the object. Presumably, then, the verbal trace also counts as a head governor for the trace of the object in Spanish, and Torrego's examples need to be explained differently.⁸ Second, the proposal that NP movement blocks verb movement or that the trace of V is not a head governor makes the wrong predictions with respect to NP movement in passive constructions: in these cases there is also an NP trace that needs to be properly governed. If a verbal trace is not a head governor, the verb should not be allowed to move in passive sentences either. As (5b) shows, this is incorrect: *-ra*, not *ye* must be used in passives.⁹ We conclude that verb movement is not blocked because the object moves, or because the verbal trace fails to head-govern the original object trace.

The explanation must therefore lie elsewhere, and Case theory is an obvious candidate. Direct object NPs need Case by virtue of the Case filter. [SPEC, VP] is the position to which structural accusative Case is assigned. Suppose now that the verbal trace in (9b) cannot assign Case. This immediately would explain the impossibility of verb movement. If the verb moves, the direct object NP would not be assigned Case, and a Case filter violation would arise. If the moved verb cannot assign Case from INFL – a reasonable assumption given the proposal that Case is assigned strictly leftward – the direct object can only be assigned accusative Case if the verb remains in situ, and another INFL, *ye*, which I consider to be a suppletive form for *-ra*, appears.

Ye-insertion is like *do*-insertion; it is a language-particular device allowing the language to resolve a particular problem. It will therefore only be used when the *-ra* option is unavailable. V movement with non Case-assigning verbs, as in (9a), does not create any problem of course, since

⁸ Note also that the Spanish facts are not paralleled by the facts of V movement in Vata (see Koopman 1984 for discussion).

⁹ Moreover, the trace of INFL in English also needs to be considered an appropriate head governor, as one can conclude from the interaction of raising to subject from the VP adjoined position to [SPEC, IP] and SUBJECT AUX INVERSION (SAI). In *Did John t_{did} t_{John} see Bill?*, *John* has moved from *t_{John}* [SPEC, IP]. *T_{John}* can only be properly governed by *t_{did}*, the trace of INFL which has moved into C. Yet there is no problem with this sentence. We must thus assume that the trace of an INFL is an appropriate head governor.

the verbal trace does not need to Case-license an NP through Case assignment.¹⁰

The following property of the syntax of Bambara has now been established:

- (10) Verbal trace cannot assign Case.

This implies that the verb in INFL cannot transmit its Case-assigning property to the tail of the chain. In other words, a Case chain cannot be formed between INFL and the verbal trace.

I will next discuss the consequences of (10) for the syntax of causative constructions. I will then go on to show that (10) is in fact a subcase of a more general condition: Case chains are absent in Bambara, both in the verbal system and in the nominal system.

2.2. Causatives

The absence of Case transmission in the verbal system also accounts for the syntax of the causative construction in Bambara, as I will now show. The analysis below is similar to the one advocated by Baker (1988), in that it involves verb-raising and the proposal that verbal trace does not assign Case (as in (10)) (first proposed in Rouveret and Vergnaud's (1980) treatment of French causatives).

Causative verbs in Bambara are formed by a causative prefix *la-*, bearing a high tone, followed by the main verb, which retains its tonal properties. It is interesting that the causative verb syntactically behaves as a single lexical item, yet, tonologically, it acts as two independent words. The following distribution characterizes the causative construction:

- (11) Intransitive V
 a. A bè den lakasi.
s/he INFL child make cry
 S/he made the child cry.

¹⁰ But why is affix hopping, supposing it is a universally available option, not a possible option in Bambara? We might resort here to my (1984) proposal that the head of a Case-assigning chain must be lexical. Affix hopping would result in a chain with a covert head, and nominative Case cannot be assigned. This will not explain the possibility of affix hopping in English, if indeed affix movement is the correct analysis.

- (11) Unaccusative V:
 b. A bè den lataa (sugu la).
s/he INFL child make leave market to
 She made the child go to the market.

Transitive verb c-selecting a PP complement:

- c. N ye den lason a ma.
I PERF child make agree it to
- d. Bala ye den labò i ye.
Bela PERF child make visit you at
 Bala made the child visit you.

Transitive verbs c-selecting an NP complement:

- e. A ye daga laci.
s/he PERF pot make break
 S/he had the pot be broken.
- f. A ye den labugo (*cè fè).
s/he PERF child make hit man by
 S/he made the child be hit.
- g. A ye den labugo (*muso (ma)).
s/he PERF child make hit woman to
 S/he made the child be hit (to the woman).
- h. *A ye den lamin.
s/he PERF child make drink
 S/he made the child drink.

As these examples show, causative verbs can be formed with verbs that do not need to assign structural accusative Case. A problem arises again with transitive verbs that c-select for NPs (11e–h). In causative constructions, the Case-marked object of the complex causative verb must be the *theme* of the thematic verb (11d), and cannot correspond to its *agent* (11f, g, h),¹¹ There are no double-object constructions in Bambara, and the external argument cannot be expressed (neither in a *by*-phrase (11h),

¹¹ Bird, Hutchison and Kante (1976) cite one counterexample: *ladun* 'make someone eat'. Here the external argument of the embedded verb corresponds to the object of the causative.

nor as a goal argument (11g) comparable to the French *faire-à* causative construction). The causative complex itself can be passivized, as the following example shows:

- (12) Den lakasi- ra sisan (muso fè).
child make cry PERF now woman by

The child has been made to cry now (by the woman).

In sum, then, the Case-marked object of the causative complex corresponds to:

- (13)1. the external argument of an intransitive V (11a);
 2. the internal argument of an unaccusative V (11b);
 3. the external argument of a transitive V c-selecting a PP (11c);
 4. the internal argument of a transitive V; the external argument must remain implicit, and cannot be realized (11f, g, h).
 Furthermore,
 5. The causative complex can be passivized (12).

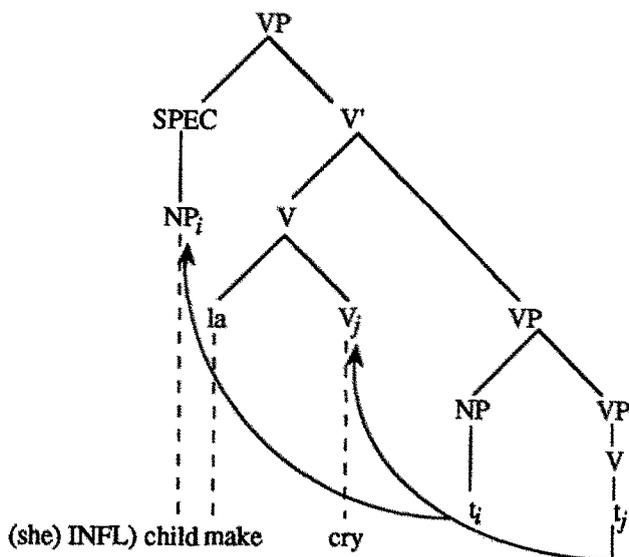
The analysis for causative constructions is based on (14):

- (14)1. The causative *la-* assigns an external theta-role, and takes a VP complement (a syntactic property);
 2. the causative prefix *la-* selects for V as a morphological property (i.e., it triggers verb raising).

Condition (14.2) forces the main verb to raise and adjoin to the causative prefix. The main verb adjoins to the right of the causative prefix, a property which might very well be related to the fact that verbs c-select for elements to their right. Since, syntactically, causative *la-* assigns an external theta role and takes a VP complement, it will assign Case to an NP it governs. Case licenses the appearance of the NP in direct object position (13.1–3). Moreover, since the causative assigns both an external theta role and Case, it can be passivized (13.5).

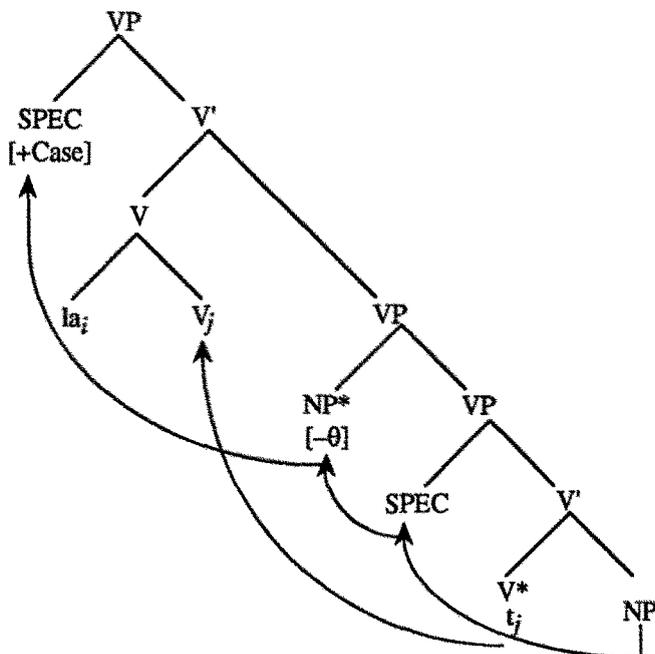
These assumptions yield the following derivation for (11a) (for simplicity, (11a) starts with the VP projection of *make*. The higher IP projection is omitted):

(15)



Let us next consider how the properties of transitive verbs in (13.4) follow. Consider the following structure, in which the external argument of the lower verb must be suppressed (indicated as NP*, [-θ]):

(16)



Suppose a transitive verb projects both its arguments; V* must move to adjoin to the causative verb, because of (14.2). Since the verbal trace does

not assign Case, every possible outcome would violate the Case filter. There are two NPs that need Case and there is just one Case assigner present: the causative complex. There is neither inherent nor default Case marking in Bambara. Thus, the only possible outcome here is one in which one of the arguments is suppressed. Suppression of the internal argument will yield a violation of the Projection Principle and the Theta Criterion. The only possibility, therefore, is to use an independently attested mechanism in the language: suppression of the external argument, so that the internal argument can move to be assigned Case by the causative complex. This process then is basically the same as passive. It differs from passive, though, with respect to the possibility of expressing the suppressed argument in a *fe*-phrase (i.e., a *by*-phrase). This is possible in a 'sentential' passive, but not possible in the complement of a causative verb. If the *fe*-phrase is licensed by INFL (or gets its theta role from INFL),¹² the difference can be reduced to the absence of INFL in the causative complement (thus providing no possible licensing of the *fe*-phrase), and the presence of INFL in the regular clausal passive (providing a licenser for the *fe*-phrase).

The ungrammaticality of (11h) remains to be accounted for. It is unlikely that its ungrammaticality is a problem that is specific to the causative construction. It seems rather to be related to the general impossibility in Bambara of using transitive verbs intransitively:

- (17)a. A bè ji min.
s/he INFL water drink
 S/he is drinking water.
- b. *A bè min.
s/he INFL drink
 S/he drinks.
- c. A bè minni kè.
s/he INFL drink-NOM do
 S/he is drinking.

As these examples show, a transitive verb can only be used intransitively

¹² I thank an anonymous reviewer for this suggestion. The reviewer also suggests that my analysis may yield an account for the fact that no overt morphology needs to appear with the passive: if the verb raises to INFL it will not be able to assign accusative Case. The only possible outcome would then be to not project the external theta role of the verb.

if it is embedded in a nominalization. Varying INFL does not appear to influence the pattern in (17), nor is it lexically restricted.

2.3. Summary

I have argued that the impossibility of Case transmission is the key to understanding the distribution of perfective aspect and the syntax of causative constructions. Given (10), and configurations in which verb movement is forced, problems arise regarding transitive verbs that must Case-license their direct objects. The two different ways in which Bambara solves this problem are: either (1) by blocking verb movement, and having a dummy INFL appear, or (2) by obligatorily suppressing the external argument of the transitive verb embedded under the causative.

This concludes the discussion of the verb system. I will now turn to the nominal system.

3. THE NOMINAL SYSTEM

Is the lack of Case transmission specific to the verbal system, or is it more general? In this section it will be shown also to characterize chains in the NP system. If a language allows for the formation of Case chains, two overt NPs can be licensed by one structural Case (as, for example, in English *There is man in the garden*). If a language lacks Case chains, each NP must be licensed by its own Case assigner. I will show how the lack of Case transmission between NP positions will yield an account of certain properties of the Bambara nominal system. In section 3.1, I will discuss the Case properties of the A-system (the term A-SYSTEM here in the sense of Koopman (1984), where it extends to all obligatorily projected positions). Three different relations in the A-system will be discussed. First, in section 3.1.3, regular cases of NP movement will be examined, where movement is forced by virtue of Case theory. In section 3.1.3, I will turn to the syntax of the existential inflectional particle *bè* and the presentational particle *don* 'it is', and demonstrate that NP movement obligatorily applies in these Bambara constructions. This will account for the absence of expletive pronouns that are related to NPs. Then in section 3.1.4, I would like to use the idea that Case chains cannot be formed as a tool to investigate some syntactic properties of predicate nominals (e.g., *This is a table. John is the writer of the book.*) and nominal small clauses (e.g., *I find John a fool*). In section 3.2, finally, I will explore some fundamental properties of Bambara's A'-system, and suggest that the

lack of syntactic Wh-movement can be at least partially explained if we assume the absence of Case chains.

3.1. *The A-system*

3.1.1. *NP movement: from a [-Case] to a [+Case] position.* So far, we have discussed two cases of NP movement: movement to [SPEC, IP] (this movement takes place in all the configurations in Table I), and movement of an NP that needs accusative Case to [SPEC, VP]. Both represent regular cases of NP movement forced by Case theory. As I will now show, NP movement to [SPEC, IP] also occurs in all the projections of the elements in Table II, which completes the syntax of Table I. Indicated are the (rough) semantics of the elements INFL (all these would involve the copula *be* in English, and their lexical properties.

TABLE II. INFL selecting for XP other than VP

Affirmative	Negative	C-selection	Meaning
ka	man	[___AP]	(.. stative, present, past ..)
don	tè	[___NP]	(.. presentational ..)
ye	tè	[___PP]	(.. identificational, presentational ..)
		ye	
bè	tè	[___NP]	(.. existential, locative ..)
		[___PP]	
bè	tè	[___ <i>la</i> P] ¹³	(.. progressive ..)
		[___CP]	
		ka . . . V <i>la</i>	

In Bambara, INFL can be directly followed by any *XP* complement (VP (see Table I). AP, NP, PP, S'). The features of INFL thus vary according to the categorial features of its complement, a property expressed by the c-selection frames in Table II. These INFLs are all restricted to tensed complements. Furthermore, although conceivably these INFL assign some kind of internal theta to their complements, each INFL licenses particular kinds of complements, and they do not assign an external theta role: they therefore do not assign (structural) accusative Case. In the following sections, we will first discuss *ka* and locative and progress-

¹³ The term *laP* is used to indicate the maximal projection of the element *la* which independently occurs as postposition (P).

ive *bè*. *Don* and existential *bè* are discussed in 3.1.3, and *ye . . . ye* in section 3.1.4.

3.1.2. *ka* and *locative and progressive bè*. *Ka* can only refer to the present or past state (never to a state that will be achieved in the future), and must be followed by an AP. This latter property can be expressed by assigning to *ka* the property of c-selecting an AP. Since the external argument of the A is generated either as external argument of the AP, or as internal argument (recognizing the existence of ergative adjective (Cinque 1990)), and since A does not assign Case, it will have to move to [SPEC, IP] to be Case marked. This implies that a sentence like (18) is assigned the following S-structure:

- (18) $Bela_i [{}_I ka [{}_{AP} t_i [{}_{AP} kènè]]]$.
Bala ka-INFL healthy
 Bala is healthy.

Locative *bè* and progressive *bè* must be followed by PPs, and do not assign an external theta-role; the surface subject of *bè* must therefore have raised out of the PP predicate. The sentence in (19) will therefore be assigned the following structures:

- (19)a. $Bala_j [{}_I bè [{}_{PP} t_j [{}_{PP} so kònò]]]$.
Bala is house in
 Bala is in the house.
- b. $Bala_j [{}_I bè [{}_{IaP} t_j [t_j boli-la]]]$.
Bala is run la
 Bala is running.

Again, the NPs in [SPEC, IP] have raised there from their respective theta-positions in the predicates *so kònò* 'in the house' and *boli-la* 'running'. They move into [SPEC, IP] to satisfy the Case filter.

3.1.3. *existentials and don*. Sentence illustrating existential *bè* and presentational *don* are given in (20).

- (20)a. $Tabali don$.
table don INFL
 It is a table.

- b. Hèrè bè.
peace bè INFL
 There is peace.

The NP corresponding to the predicate NP in English must occur in [SPEC, IP] and expletive pronouns can never be used in these constructions. I will propose that examples like (20a) and (20b) should be analyzed as (21a) and (21b): the NP in pre-INFL position has moved there from post-INFL position, basically because it is the only way for it to pass the Case filter.

- (21)a. Tabali_i [_I don<sub>[NP t_i]].
table don-INFL
 It is a table.</sub>

- b. Hèrè_i [_Ibè<sub>[NP t_i]].
peace bè-INFL
 There is peace.</sub>

Before motivating the analysis in (21), I will review some properties of the existential and presentational constructions in English. Our discussion will be limited to two aspects of the sentences in (22):

- (22)a. There is peace.
 b. There is a man in the garden.
 c. It is John.
 d. It is a table.

First, how does the NP occurring in post-INFL position get Case, and second, what if any, is the relation between the expletive pronoun and this NP? As for the first question, we will assume that the expletive pronoun *there* license the NP to its right by forming a Case chain with this NP at S-structure.¹⁴ Let us assume that this analysis equally extends to the relation between the expletive pronoun *it* and the NP in (22c–d). As for the second question, it is well known that there exists a locality relation between the expletive pronoun *there* and the related NP. This

¹⁴ Another possible answer to the Case problem does not involve Case transfer or a Case chain, but rather (inherent) Case assignment by the copula to the postverbal NP (cf. Pollock 1986; Belletti 1988). If this is correct, the Bambara data could be explained as follows: the INFLs do not assign Case. This in turn could either be related to the general absence of a lexical category 'copula', or to the fact that copulas must appear in INFL (for example, this property would follow if they have undergone some movement to INFL, together with the general absence of Case chains).

relation basically mirrors the locality observed under NP movement. Chomsky (1986b) proposes an account for these locality restrictions which forces NP movement to apply at LF to sentence containing an expletive. At LF, then, the NP forming a chain with an expletive moves to the position containing the expletive, eliminating it. NP movement at LF is forced by the PRINCIPLE OF FULL INTERPRETATION (PFI), which states that all elements at PF and LF must be INTERPRETABLE OR LICENSED. If LF is the level that contains contentive and meaningful elements, expletives, being neither contentive and meaningful elements, cannot occur at LF. Chomsky proposes that expletives are replaced by LF by the (meaningful) NPs with which they are related at S-structure.¹⁵ The locality relation between the expletive and the related NP thus reduces to regular principles constraining antecedent-trace relations (i.e. Subjacency, ECP, Binding Theory). With these assumptions, part of the syntax of expletive-NP relations in English is explained as follows:

- (23)a. In $EXPL_i \dots NP_i$, $EXPL_i$ can transmit its Case properties to NP_i (i.e. expletive and NP can form a Case chain at S-structure).
- b. The relation between the expletive pronoun and the NP is local, as a consequence of movement of the NP to the position of the expletive pronoun at LF.

Let us now return to Bambara. Consider the following sentences:

- (24)a. Tabali don.
table don-INFL
 It is a table.

- b. Bala don.
Bala don-INFL
 It is Bala.

- (25)a. Hèrè bè.
peace bè-INFL
 There is peace.

¹⁵ Chomsky (1991) proposes a slightly different analysis in which the expletive pronoun is not actually replaced at LF. It is treated as an LF affix instead, to which the NP adjoins.

(25)b. Tòdòrò tèt.

harm NEG-INFL

There is no harm./Everything is fine.

c. Ni na tèt, . . .

if sauce NEG-INFL

If there is no sauce, . . .

Both *don* and *bè* function as genuine INFLS heading IPs: they can be modified, they can be preceded by the past tense marker, and so on. Surprisingly, a full NP occurs in [SPEC, IP]. But [SPEC, IP] is not a position to which a theta role can be assigned, nor can it be c-selected. Therefore, the NP occurring in pre-INFL position must have moved there. But where did it move from? Suppose that *don* c-selects for an NP (as suggested in Table II). This captures its distribution: *don* can only occur with NPs. The underlying structure for (24) must then be [_{IP} [_Idon [_{NP} Bala]]], and the NP in post INFL position must move to [SPEC, IP]. The surface order in (25) is therefore derived via NP movement.

Exactly the same arguments carry over to existential *bè*. The NP in [SPEC, IP] must have moved there from its c-selected position, the post-INFL position.

If NP movement must apply in sentences like (24) and (25), the next question is why this is so. One could simply propose that expletive pronouns are absent in Bambara. Since *pro* is not licensed (Bambara is not a *pro*-drop language), NPs would have to move to the position in which an expletive would occur. This, however, seems to miss the point. Bambara *does* have overt expletive pronouns related to CPs.¹⁶ It is precisely expletive pronouns related to NPs that are absent. We already argued that Case chains cannot be formed in the verbal system (10a). If Case chains can never be formed in Bambara, an explanation can be provided. The postverbal NP needs Case, precisely because it is an NP. Since the D-structure position is not a position in which it can be Case-marked by INFL (recall that Case is assigned leftwards), and Case chains cannot be formed, the NP *must* move at S-structure into the position that is Case marked by INFL: [SPEC, IP]. In English, expletive pronouns can exist, precisely because the Case filter can be satisfied at S-structure by the formation of a Case chain, and NP movement occurs at LF.

We assume thus that there is a parameter (26) and that this parameter

¹⁶ CPs are not Case marked at S-structure. They do not need to be in a Case chain. We can assume that they move at LF to replace the expletive.

is set negatively in Bambara, but positively in English (but see section 4 for more discussion):

- (26) *Case transmission parameter*
 Given an A-chain $X^{n_i} \dots X^{n_j}$, X^{n_i} can or cannot transmit its Case properties to X^{n_j} .

From this follows the absence in Bambara of expletive pronouns that transmit Case to an NP, and the obligatoriness of NP movement in contexts where, in other languages, Case-transferring expletive pronouns may appear. Alternatively, expletive pronouns cannot exist if the particular INFL they would co-occur with fail to assign inherent Case.¹⁷ Thus, Bambara has no choice about how to satisfy the Case filter: NP movement is forced at S-structure. As a consequence, Bambara overt NPs (in A-positions) will always occur as the head of a chain.

In English, NP movement can wait until LF.¹⁸

3.1.4. *other Case chains.* In the preceding section, constructions were discussed in which a lexical NP (as opposed to a expletive NP) needs to be licensed by Case. We arrived at the conclusion that there is a one-to-one correspondence between Case assigners and Case assignees in Bambara. Since verb movement does not allow the formation of a Case chain, only one structural Case position is available in sentences where verb movement has applied. If two structural Case positions are needed, both I and V need to be lexical, and V must be in situ. In the nominal system, Case chains are excluded as well, again with the consequence that each NP needs to appear in a Case-marked position, governed by an overt Case assigner. In this section, I would like to explore the generalization that each NP needs to be licensed by a Case assigner, and see just how general it is. I will show that it holds in all kinds of constructions that are

¹⁷ Woolford (1990) argues that *expl INFL NP* cannot exist in Bambara, because INFL governs to the left. INFL not only governs to the left: its complement, the *XP* which it selects, occurs to its right in D-structure, so it also governs to the right. It could be argued that INFL Case-governs only to the left, and that no inherent Case is available.

¹⁸ This does not explain why **peace is.* or **John, is.* are excluded at S-structure in English, as pointed out to me by R. Kayne. It seems to be the case that *be* requires an overt sister in the VP at S-structure. This situation actually parallels that surrounding Wh-movement: there are languages in which Wh-movement obligatorily applies at S-structure (e.g. Italian), languages in which Wh-movement can apply at S-structure or at LF (French), and languages in which Wh-movement only applies at LF (Bambara). Similarly, there are languages in which NP movement obligatorily applies at S-structure (Bambara), languages in which NP movement can apply at S-structure or at LF (English), and languages in which NP movement applies only at LF (Dutch) (unless other factors force the subject to move at S-structure, (cf. the definiteness of the object for example).

not usually assumed to obey the Case filter, or to involve Case chains. The goal of this section, then, is twofold. First, to complete the description of the distributional properties of NPs in the A-system, and second, to use Bambara as a test case for establishing which positions need to be licensed by Case.

Let us first turn to predicate nominal constructions and nominal small clauses. So far, examples have been presented illustrating the use of the INFL *don*. *Don* is used if only one NP is realized. It is surprising that the situation changes in predicate nominal constructions where two full NS have to be licensed:

- (27)a. Nin ye tabali ye.
 this ye-INFL table to
 This is a table.
- b. Nin ye Bala ye.
 this ye-INFL Bala to
 This is Bala.

In these sentences, the INFL *ye* must be used, and the second NP *must* be followed by the postposition *ye* (glossed as *to*). The NPs in (27) satisfy the Case filter: they are assigned different Cases by INFL and by the postposition *ye* respectively. They are also consistent with the one-Case-assigner-per-NP hypothesis.

Consider next the ungrammatical examples in (28):

- (28)a. *Nin ye tabali.
 this ye-INFL table
- b. *Nin don tabali.
 this don-INFL table
- c. *Nin don tabali ye.
 this don-INFL table to

Examples (28a) and (28b) contain two NPs. If both NPs need to satisfy the Case filter, and if Case chains cannot be formed in Bambara, they are straightforwardly excluded, since there is only one Case assigner available. The ungrammaticality of (28c) clearly cannot be Case related. Here, a second Case marker (the postposition *ye*) licenses the second NP. It can be explained, however, by our assumption that *don* c-selects for an NP, and not for a PP. That is, what excludes (28c) is the fact that the *ye*-com-

plement is not licensed. (This complement can only be licensed by a *ye-INFL*).

We also predict that *don* can only license one NP, i.e., the NP complement selected by *don* cannot have an external argument. *Don* c-selects for an NP, which needs to be Case marked. As we saw before, this implies that it must obligatorily move to [SPEC, IP]. Suppose that the c-selected NP did have an external argument itself (i.e. *don* [NP [NP]]). If both NPs need Case, a Case filter violation arises, because only one Case assigner is available (INFL). Hence the complement of *don* must necessarily be unaccusative.

Let us next consider the distribution of nominal small clauses like *John a fool* in *I consider [John a fool]*. If both NPs need to be assigned Case, we expect such forms to be absent in Bambara. This prediction seems to be borne out. I have not been able to find any nominal small clauses, but for one apparent exception to which I turn immediately below. Potential candidates for nominal small clauses are all realized as PPs:

- (29) U ye a kè kuntigi ye.
they PERF him make chief to
 They made him chief.

Of course, examples like (29) are perfectly consistent with our analysis: the subject of the small clause is assigned Case by the main verb, and the predicate NP is assigned Case by the postposition. So far, then, the generalization that each Case assignee is governed by a Case assigner seems to be well-founded. And insofar as it follows from the lack of Case transmission in Bambara, it seems to support our analysis.

I now turn to configurations in which the generalization does not seem to hold. I will propose that the NPs in these configurations are actually in an A-bar position, and as such do not need Case.

Consider first the following examples:

- (30)a. N tògò ye/ kò Alima.
my name INFL say Alima
 My name is Alima.
- b. U bè n wele Alima.
they INFL me call ALima
 They call me Alima.

Here, two NPs occur, but there is only one Case assigner.¹⁹ This is only a problem, though, if the NP following INFL is in an A-position, i.e. if there is a genuine small clause complement here. Wh-questions indicate that the second NP is not in an A-position, but rather in an adjunct position (A-bar position). In Wh-questions, the form of the second NP corresponds to an adjunct (*di* 'how') and not to an argument (*mun* 'what'). The latter must be used when questioning a NP predicate:

- (31)a. *i tògò ye di */mun?*
your name is how what
 What is your name?
- b. *U bè i wele di /*mun?*
they INFL you call how what
 What do they call you?
- c. *Nin ye mun/*di ye?*
this INFL what how to
 What is this?

Suppose that NPs like *di* are in A-bar positions, not in A-positions (recall that predicates occur in A-type positions, i.e., positions from which a theta role is assigned). Suppose furthermore that NPs in A-bar positions do not need Case. Sentence (31a) then would not be a counterexample to the claim that Case chains are absent.

Additional evidence that NPs in A-bar positions do not need Case comes from the distribution of bar NP adverbs like *kunun* 'yesterday'. These adverbs occur as bare NPs; they are not followed by a P.²⁰

3.1.5. *summary.* The hypotheses that Case chains are absent in the NP system in Bambara accounts for the obligatoriness of NP movement in cases in which expletive pronouns appear in Case-chain-forming languages, and for the absence of expletive pronouns related to NPs. It furthermore accounts for the necessity of two Case assigners in the predi-

¹⁹ Note also that examples like (30) are the only type of examples that I am aware of that can be used without an overt INFL: *N tògò Alima*, 'My name is Alima.' These should probably be treated as NPs, and not as projections of IP, with the second NP modifying the first. Support for this assumption comes from the fact that the corresponding question *must* contain INFL *I togò yelkol*Ø di?*, 'Your name is how?'

²⁰ Internally headed relative clauses occur in left-dislocated position, without overt Case marking. If they are NPs, they represent another instance of NP in an A-position not followed by an overt Case marker.

cate nominal construction, and for the non-occurrence of nominal small clauses. It is not usually assumed that the predicate NP needs Case.²¹ However, in languages with overt morphological case, the predicate nominal must be Case-marked.

It appears that there are two patterns of predicate nominal Case marking: either the predicate nominal agrees with the external argument in Case, as in Latin, or the predicate nominal has some default Case (for instance, instrumental in Russian). In the latter pattern, the appearance of instrumental case might represent some language-specific default case, i.e., it is a way of getting Case to the predicate nominal, much as, in Bambara, *ye* can be used to license the predicate nominal. As for the Case agreement pattern, I will adopt a proposal by Hoekstra and Mulder (1990) and assume that the predicate acquires Case through SPEC-head agreement with the trace of the moved NP, i.e., Case is transmitted through the chain with the trace:

$$(32) \quad [IP NP_i \dots [SPEC [NP e]_i [NP] I]] \quad (\text{Latin})$$

$\begin{array}{c} | \quad \quad \quad \uparrow \quad | \quad \uparrow \\ \text{-----} \quad \quad \quad \uparrow \\ \text{SPEC Head} \end{array}$

If Case chains are absent in Bambara, i.e., if Case cannot be transmitted through a chain to license the predicate NP, the predicate NP cannot occur unless it is assigned Case in another way, i.e., by an independent Case assigner.

Further examination of the distribution of NP suggests that NPs in A-positions (NPs in SPEC or complement position, and predicative NPs) need Case: NPs base generated in A-bar positions, however, need not be licensed by Case.

3.2. A'-A Relations

The absence of (A-type) Case chains in Bambara accounts for an important part of the syntax of simple clauses in Bambara. Is there any reason to assume that (26) also extends to A'-chains? In the previous section, I have discussed NPs that are base generated in A'-position: these do not appear to need Case. In this section, I discuss the probable surrounding A'-movement in Bambara. One salient fact about the syntax of Bambara is that syntactic Wh-movement is absent (with the exception of reason adjuncts, discussed below). Wh-words in Bambara *must* remain in situ. This is illustrated for Wh-questions in (33a):

²¹ But see Emonds (1986) and Tremblay (1991) for arguments that they need Case.

- (33)a. I ye jon ye?
 you PERF who see
 Who did you see?
- b. I ye cè min ye, o tògò Bala.
 you PERF man RL see, that one's name Bala
 The man you saw is called Bala.
- c. N ye cè de ye.
 I PERF man FOC see
 I saw the man.

In relative clauses, the head of a relative clause occurs clause-internally and is marked by the relative clausemarker *min* (33b). The entire relative clause is excluded from regular NP positions and occurs in a dislocated position (relative clauses are the only elements which may occur in this position).

In focus constructions, the focused NP must occur in situ, where it is marked by *de*, as in (33c).

Bambara is quite exceptional in that it not only has in situ constructions: it *only* allows in situ constructions. Bambara furthermore does not allow for heavy-NP shift or any kind of scrambling of NPs.

In an earlier version of this paper, I suggested that, again, the absence of Case chains might constitute the key to understanding this property. This explanation was, however, problematic and quite clearly cannot be the only variable involved here. Nevertheless, I have decided to include the following since the configuration of data is interesting.

Let us suppose that Wh-words move to [SPEC, CP] in the syntax. This implies then that A'-movement would result in an A'-chain consisting of the Wh-phrase and its trace. If this Wh-phrase needs Case, it will have to satisfy the Case filter by forming a Case chain with the trace. Since Bambara does not allow for Case chains, the Wh-phrase would fail to satisfy the Case filter. It must therefore remain in situ, and the impossibility of Wh-movement of NPs is explained.^{22,23}

²² Note that the insertion of a specific Case assigner for the Wh-phrase, which often takes the form of a copula construction, might be another way of solving this problem, i.e., it represents a way to license the initial constituent.

²³ This hypothesis seems to contradict the conclusion reached in the preceding section: NPs in A' positions do not need Case. It is possible to distinguish between these cases, however, since Wh-phrases are arguments, and the cases under discussion in the previous section are adjuncts to start with.

Failure of an NP in A-bar position to pass the Case filter only yields a partial explanation for the impossibility of Wh-movement, however. More needs to be said, as becomes clear upon considering PPs, which do not need Case. Under the scenario above, only NPs are expected to remain in situ. PPs should be able to remain in situ or to appear in [SPEC, CP]. This prediction is not borne out: PPs must remain in situ. Furthermore, any proposal blocking PPs from moving to [SPEC, CP] (either by arguing that the PP is not a possible pied-piper, or that the [SPEC, CP] is a restricted position which does not tolerate any overt material) runs into the following problems: although PPs may not move, adjunct PPs may move, or remain in situ, and 'reason' adjunct PPs *must* move (possibly for ECP reasons):

- (34)a. I nana mun na?
*you come-PERF what to/in which way/*for what reason*
 What did you come for?/How did you come? (i.e. by foot or by train)
- (34)b. Mun na i nana?
what to you come-PERF
 Why (For what reason)/How did you come?
- c. Mun na_ji ye a fo a faga-ra t_j?
what for you PERF it say he kill PERF
 For what reason did you say that he was killed?

Since these PPs can move successive-cyclically, as in (34c), it is likely that they actually are in [SPEC, CP]. In sum, then, the assumption that Case chains cannot be formed between A'- and A-chains only yields a partial explanation for the lack of A'-movement.

4. CONCLUSIONS; FURTHER ISSUES

This paper is organized around the idea that Case chains are generally absent in Bambara, in both the verbal system and the nominal system.

The absence of verbal Case chains yields an account for the distribution of perfective aspect and the syntax of causative constructions. In these contexts verb movement is forced, and problems arise with transitive verbs that need to license their direct objects by means of Case. Bambara solves these problems in two language-particular ways: in the case of V to INFL movement, by blocking verb movement, and inserting a dummy INFL;

and with causative verbs, by obligatorily passivizing the embedded transitive verb.

The absence of nominal Case chains leads to NP movement in contexts where expletive pronouns could appear in Case-chain-forming languages; it further accounts for the appearance of two Case assigners in predicate nominal constructions, and explains a gap in the pattern of small clauses: while PP small clauses do occur, NP small clauses are nonexistent. Descriptively speaking then, failure of Case transmission in the A-system leads to the appearance of an overt Case assigner with each NP requiring Case.²⁴

Finally, I speculated that the failure to form Case chains might also extend to A'-chains, and suggested how this fact could yield a partial account of the absence of syntactic Wh-movement in Bambara, and how

²⁴ Although this generalization holds in tensed and infinitival complements, present and past participle clauses are problematic: both the subject and the direct object may occur before the participle.

- (i)a. Muso na yèlèma- tò, u don-na.
woman sauce pour PRES PART, they enter PERF
 While the woman was pouring the sauce, they came in.
- Muso na yèlema- len, u don- na.
woman sauce pour Past PART, they enter PERF
 When the woman had poured the sauce, they came in.

How then are these two NPs assigned Case? I do not understand the internal structure of these complements and their distribution well enough to present a complete analysis of them. It seems likely, however, that the participial morphology is in I, that V movement has applied, and that the direct object in this construction is actually an incorporated N. This would explain some restrictions on the direct object in this construction, which basically can only be a noun (including proper names): it cannot appear with any modifiers, nor can it be a Wh-phrase or be marked with the relative clause marker. Full direct object NPs can only be licensed in the following construction:

- (ii)a. Muso kè- tò ka na nyuman yèlèma, u don- na.
woman do PRES PART to sauce good pour, they enter PERF
 While the woman was pouring the sauce, they came in.
- b. Muso kè- len ka na nyuman yèlema, u don-na.
woman do PAST PART to sauce good pour, they enter PERF
 When the woman had poured the sauce, they came in.

The examples in (ii) are more expected: both NPs are assigned Case by their own Case assigner. If my analysis for (i) is correct, then (i) would be characterized by the availability of noun incorporation in this construction. Of course, it is unavailable in regular tensed or infinitival clauses. This could possibly be related to the nominal character of the type of I that appears in these clauses, which also allows for compounding.

it also might be the principal reason for the extreme rigidity of Bambara word order.

I now turn to a number of questions that the analysis of Barbara raises. I will start out with the verbal system. First, I have assumed that, although verbal Case chains do not exist in Bambara, Case can be transmitted along a verbal Chain in other languages – French, for instance. The question arises as to whether this assumption is correct, i.e., do verbal Case chains ever exist.²⁵ I will demonstrate that verbal Case chains must be assumed for a language like French.

A second question arises: are there any other languages that do not allow verbal Case chains? I will argue that languages with ergative Case marking are likely candidates for languages that disallow verbal Case chains.

A third question arises, with respect to the strong claim that is made in this paper: if Case chains are allowed in the verbal system, they should also be allowed in the nominal system, and vice versa: if Case chains are not allowed, they should not be allowed either in the verbal or in the nominal system. We will discuss these predictions for some languages that, respectively, disallow or allow Case chains.

But first, I establish that verbal Case chains must be assumed in a language like French or Vata (Koopman 1984). I will do so by showing that the head of the verbal chain is not in an S-structure government relation with its Case-dependent NP. It must therefore be assumed that the Case properties are transmitted through the verbal chain.

Consider the following examples:

- (35) *French*
 a. Jean choisit_i toujours [t_i le riz blanc].
 John chooses always the rice white
 John always chooses white rice.

²⁵ Chomsky (1989), for example, argues that Case chains never exist. He proposes that the correct formulation of the parameter here is not whether Case chains can be formed, but whether empty elements (traces and expletives) can participate in the Case system or not; in Bambara-type languages empty elements cannot participate in the Case system, in English-type languages they can. There are two problems with this proposal: first, there are expletive pronouns in Bambara that are linked to CP complements. Second, the language allows for bare NP adverbs, which according to Larson (1985) are assigned Case by an empty P.

- (35) b. vata²⁶
 O li [saka t]
s/he ate-PERF rice
S/he ate rice.

Both French and Vata have V movement to INFL (for French, see Emmons 1978, among others; for Vata see Koopman, 1984). In the examples in (35), the verb is therefore in I at S-structure. How does the direct object receive Case? Suppose French disallows Case chains, and that consequently the verb in INFL directly licenses the direct object, which might have moved to some SPEC position in order to be Case-marked. This analysis will not work, if one adopts the proposal that INFL is split into different functional heads as in Pollock (1989) and much other recent work. The structurally Case-marked object does not raise to a position governed by the highest INFL projection (it follows the adverbs and negation). Accusative Case can therefore not be assigned from INFL under government and it must therefore be assigned by the verbal trace. That is, a verbal trace is able to license a structurally Case-marked NP, depending on the properties of the verb in INFL.

A similar conclusion can be reached for Vata: in Vata, Case is uniformly assigned to the left, but the direct object must occur to the right of INFL. With respect to these Case properties, Vata exactly parallels Bambara. A Case-dependent object can therefore never be Case-marked by the verb in INFL, and must be assumed to be Case-marked by the verbal trace, i.e., the trace of the verb inherits its Case properties from the verb. (The Case assigned by the verbal trace behaves like a structural Case and cannot be assumed to be inherent).

Since in these languages the verbal trace assigns structural Case, Case can be transmitted along verbal chains.

However, the assumption that verbal trace in French can inherit structural Case properties leads to a conflict for the analysis French causatives: properties of the *faire-à* causative construction are often argued follow from V (or V-bar) preposing of the embedded verb, in conjunction with the inability of verbal trace to assign Case (Rouveret and Vergnaud 1980, and Baker 1988). Let us assume that this analysis is correct. In French, then, Case chains must be allowed as a result of V to I movement, but must be disallowed under V/V-bar preposing in causative constructions. Following Rizzi and Roberts (1989), this could be explained if these V movement rules represent different types of rules, yielding different types

²⁶ Perfective aspect is formed by a tonal affix (cf. Koopman 1984).

of chains. V to I movement could represent an A-type movement (since it is substitution), while verb movement in causative constructions is A'-movement, since it is an adjunction operation. It could then be proposed that Case chains should be further parametrized according to whether the case chain can be formed along A-chains or A'-chains.

Although this alternative might be worth pursuing, it is difficult to see how it could be extended to account for the difference between French and Vata V to I movement and Bambara V to I movement. Although one might propose that Bambara V to I movement represents A-bar movement, and Vata/French V to I movement represents A movement, there seem to be no morphological or syntactic criteria justifying this classification. For the moment then, we conclude that French/Vata V to I movement must allow for Case transmission, but Bambara V to I movement does not, i.e., there is a way in which French and Vata objects are licensed at S-structure which is absent in Bambara. Further discussion will be restricted to case chains formed by V to I movement.

Are there other languages like Bambara, with no Case chains formed under V to I movement?

Salleh (1987) argues that this is the case in Malay, where a verb can adjoin²⁷ to I, except when the verb must license an 'object'. Whether a verb can be attached to I can be determined in questions where I precedes the subject. An accusative-Case-assigning verb may not adjoin to I, but must remain in situ, because, as Salleh argues, verbal trace cannot assign Case. In our terms, then, Malay lacks verbal Case chains.²⁸ Although the analysis of I-preposing is not without problems, and Malay does not seem to have any of the other properties of Bambara (as will be discussed below), I will assume for the sake of the argument that Salleh's analysis is correct.

The Bambara problem is an accusative Case assignment problem: accusative Case can only be assigned if the verb does not move: it may not

²⁷ Salleh proposes in fact that a verb can either substitute into I if I is empty, or adjoin to I if I contains other material. The resulting I can be quite big. As far as I was able to determine, there does not seem to be any reason to assume two different processes.

²⁸ In order to account for the difference between Vata and Malay, Salleh exploits the difference in the positioning of the head in the VP in both languages: in languages with a head-initial VP, verbal trace would not be a Case assigner, whereas in V-final languages, verbal trace is a Case assigner. This generalization does not seem to hold, however. There are many head-initial languages in which verbal trace must be assumed to function as a Case assigner in (35): e.g. French, the verb-second languages (like the Scandinavian languages, which have V to INFL movement and V to C movement in root clauses, and INFL to V movement in embedded environments), and Yiddish (which has V to INFL movement in all clause types, and V to C movement in root clauses; see Den Besten et al. 1985).

be assigned if the verb has moved. There is of course another class of languages with accusative Case assignment problems: languages with ergative Case-marking systems.²⁹ Let me briefly review their properties, and indicate how the absence of case chains in these languages seems to be the source of the problem.

In a typical language with ergative Case marking, the subject of an intransitive or unaccusative verb is assigned what is traditionally called ABSOLUTIVE Case. There are good arguments that absolutive Case corresponds to nominative Case in nominative/accusative languages. In clauses with transitive verbs, however, the subject is assigned some 'extra' case, the ergative Case, and the *object* is assigned absolutive (nominative). Depending on the language, the ergative case is genitive or dative. Often ergative case is related to the appearance of a particular morpheme on I. Sentences with transitive verbs and ergative Case marking behave as active sentences in nominative/accusative languages, and not as passive sentences (with the exception of Dyrbal, cf. below). In particular, the NP with ergative Case behaves like the external argument and not as a *by*-phrase: it can be a controller and can correspond to PRO in non-finite sentences. Depending on the language, it can be the antecedent for a subject-oriented anaphor, and it can be missing under conjunction reduction. In languages with syntactic incorporation, it cannot incorporate, in contrast to internal arguments.

Let us assume that V to I movement is obligatory in these languages, and that languages with ergative/absolutive Case marking are like Bambara in that verbal trace does not assign Case. As a consequence, only one structural Case is available per sentence. This of course leads to problems with transitive verbs, and languages appear to solve these problems in different ways.

In Dyrbal, as convincingly argued in Bok-Bennema and Groos (1984), transitive structures are obligatorily passivized or antipassivized, i.e., only one structural Case is available.

In West Greenlandic, as a consequence of verb movement and the absence of Case chains, there is only one structural case available from I (absolutive = nominative). In sentences with transitive verbs, then, the object is assigned nominative in [SPEC, IP], and the subject is assigned genitive in a language-specific way, i.e., by the addition of an extra IP

²⁹ As far as I know, Bok-Bennema and Groos (1984) were the first to propose that the absence of accusative Case was the key to understanding ergative Case marking patterns. The following discussion relies heavily on their (1984) discussion as well as on the discussion in Bok-Bennema (1991) and references cited therein.

projection which licenses genitive Case assignment to its SPEC. In this case, INFL carries both subject agreement with the genitive NP and object agreement with the nominative NP. There are other ways of licensing syntactic transitive structures in Greenlandic: incorporation of the NP that needs structural accusative, or the appearance of antipassive morphology on the verbal complex. In these cases, the external argument is always assigned nominative Case. If incorporated objects do not need to be licensed by syntactic Case, as proposed in Baker (1988), incorporation represents a language-specific way to solve the problem caused by V to I movement. If the antipassive morpheme can assign inherent Case (the so-called INSTRUMENTAL or MODALIS Case) to an NP that is usually assigned accusative, the antipassive morpheme represents another language-specific way of licensing objects.³⁰

We now have some potential languages without verbal Case chains (Malay, West Greenlandic), and some potential languages with verbal Case chains (e.g. French, English, Vata). We can now discuss whether the strong predictions made by parameter (26) are borne out. On the basis of our discussion of Bambara, the following predictions are made (given the discussion on French causatives above, we will henceforth disregard causatives):

- (36)(i) Languages without Case chains
- a. V in situ or transitivity problems under V movement to I
 - b. no existential pronouns (i.e. no Case transmitting pronouns)
 - c. nominal small clauses excluded
 - d. Wh in situ
 - e. general lack of A'/A relations
- (ii) a. no transitivity problems resulting from V movement to I
- b. existential pronouns may exist
 - c. nominal small clauses are possible
 - d. syntactic Wh-movement
 - e. availability of A'-positions

As discussed above, Salleh argues that Malay has movement to I. Curious inspection of Malay shows that it does not display any of the properties in (36i), except for (36ia). Malay has existential constructions with an obligatorily empty [SPEC, IP]; these constructions could involve Case transmission. However, it is also conceivable that the post-I NP directly

³⁰ Bok-Bennema and Groos (19B4) propose that in ergative languages, verbs are not Case assigners. Our proposal essentially derives this property from the obligatoriness of verb movement, and the absence of Case chains.

receives Case from I, which might explain the necessary absence of [SPEC, IP]. Malay appears to allow for nominal small clauses, and has syntactic Wh-movement. If indeed Malay does not allow for verbal Case chains, but allows for nominal Case chains, the proposed parameter makes predictions which are too strong. As noted earlier, however, V movement to I in Malay involves adjunction, and results in quite large verbal complexes. It could therefore be the case that this type of movement is similar to the one observed in French causatives, which also leads to the apparent unavailability of accusative Case. I will leave this problem for future research.

West Greenlandic represents a more interesting test case. Above, it was assumed that West Greenlandic has obligatory V movement to I, and no verbal Case chains. Several language-particular ways are available to solve the problem of the syntactic absence of accusative Case-assigning verbs (an additional INFL projection licensing genitive Case; incorporation of the object; or getting Case from the antipassive morpheme). Does Greenlandic allow for nominal case chains? Greenlandic has an existential construction involving the affixal verb *-qar*, 'have':

- (37) Nutaa mik imiarsuar-nut tallittarvi-qar- puq.
new MOD ship DAT harbour QAR IND 3SQ

There is a new harbour for ships. (Fortescue, 1984, p. 83)

However, this construction has two properties suggesting that the NP 'harbour' which is related to the (silent) expletive is not licensed through Case chain formation. First the NP must obligatorily incorporate to *-qar*. Incorporation is a way to circumvent S-structure Case requirements. The NP 'harbour' is therefore not in a Case chain with the expletive *pro*, but licensed through incorporation. (Bambara lacks incorporation and would require NP movement to [SPEC, IP] in the equivalent to (37) 'A new harbour is for ships'.).

A second property of this construction is that the agreement on *-qar* never varies with the predicate NP:

- (38) Apiri-su- qar -puq kamat-
ask part QAR IND 3SQ be angry
 tu -nik.
PART MOD PL

There are some angry questioners. (Fortescue, 1984, p. 84)

The Case of the stranded modifier of the incorporated noun (*-nik*) shows

that that NP is plural. INFL, however, carries 3rd person singular agreement. This might be taken as further evidence that the *pro* triggering agreement and the NP that incorporates never form a Case chain at S-structure.³¹

Thus, the existential construction in West Greenlandic does not involve a Case chain at S-structure. Rather, the NP is licensed through incorporation. Interestingly, West Greenlandic does not allow an NP to remain in situ in unaccusative constructions either (as in English *There arrived a man*), as can be concluded from the fact that these NPs must have absolutive Case, fully agree with INFL, and can never be incorporated.

Turning now to (36id), West Greenlandic has nominal small clauses. But again, the predicate NP must be incorporated. Since incorporation is a way to avoid case assignment, the occurrence of small clauses is actually unproblematic.³²

West Greenlandic appears to be a Wh in situ language and thus seems to be consistent with (36ie).

Finally, (36if) appears to be too strong: West Greenlandic (as do many other ergative Case marking languages) has quite free word order, indicating that a fair amount of scrambling is allowed. Clearly, then, something else needs to be said about the availability or non-availability of A and A' scrambling positions. This certainly cannot be an effect of the absence of Case chains in itself.

Given the discussion above, and modifying (36i) accordingly, Greenlandic seems to correspond quite closely to the parameter (26):

(39)(i)	Languages without Case chains	Greenlandic
a.	V in situ or transitivity problems under V to I	yes
b.	no Case transmitting pronouns	yes
c.	nominal small clauses excluded (under Case transmission)	yes
d.	Wh in situ	yes
e.	general lack of A'/A relations	no

³¹ Note that this construction causes problems for expletive replacement at LF. If the NP whose head has been incorporated must move to replace the expletive in [SPEC, IP], an ECP problem arises, since incorporation is not possible from this position. Possibly the verb moves to C and incorporates the N from [SPEC, IP] after expletive replacement.

³² I have nothing to say here about the particular fixed position (immediately post-INFL) in which stranded modifiers must appear in this construction (see Sadock (1985) and Bok-Bennema and Groos (1988) for discussion).

West Greenlandic, then, seems to be consistent with the parameter, except for the availability of A'/A relations (scrambling).

It has been argued in the literature (Mahajan 1990, among others) that there are two types of scrambling: A scrambling (i.e. movement to an A-position) and A' scrambling (scrambling to an A'-position). Note that the unavailability of A scrambling in Bambara (i.e. movement of the object to an A-position that is higher than the subject at S-structure) follows from the fact that the highest A-position must be filled in Bambara (a Case A-chain cannot be formed). Thus, the only way an NP can be licensed is by moving to the structural Case position in the syntax. If Greenlandic is like Bambara and does not allow for Case chains, we predict A-scrambling characteristics to be absent.

This also implies that in language with A scrambling, NP chains at LF must probably be allowed, i.e., an NP with oblique Case can appear in a position which is not the position in which structural Case is assigned; it will then have to move to this position to eliminate the expletive *pro* in SPEC position. It appears, then, that there is no general ban on expletive pronouns (remember that Bambara does have expletive pronouns related to CPs). What is claimed is that the expletive pronoun is not allowed to form a Case chain with the NP, which therefore must be licensed in some other way (incorporation or some other language-specific Case assigning mechanism).

The main differences between Bambara and Greenlandic, then, are the availability of an 'extra' structural Case for the subject, the availability of a language-specific inherent Case (*modalis*), and the incorporation option.

Finally, consider Vata as an example of a non-Indo-European language with Case chains. As discussed earlier, Vata has V-to-I-movement, and accusative Case can be assigned without any problem. Moreover, Vata appears to have expletive pronouns related to NP, and allows for nominal small clauses in copula constructions. Vata makes extensive use of Wh-movement, and also allows VP-internal scrambling. These properties are represented in (40):

(40)(ii) Languages with Case chains	Vata
a. no transitivity problems under V to I movement	yes
b. existential (Case-transmitting) pronouns	yes
c. nominal small clauses are possible	yes
d. Wh-movement	yes
e. availability of A-bar positions	yes

In conclusion, then, with the exception of Malay, parameter (26) seems to have some crosslinguistic support, insofar as there is a cluster of proper-

ties that seem to pattern together. As is often the case, though, it also appears to be too early to determine whether the parameter holds in its strongest form, i.e., for both the verbal and nominal systems.

I will leave further questions for future work, and conclude this article by pointing out that the parameter seems to have the right properties: its value can be set on the basis of very simple and extremely frequent constructions in main clauses. The present study suggests a number of properties that are diagnostic for the setting of the parameter: problems with transitivity in the verbal system, the existence or non-existence of pleonastics/NP chains (where the pleonastic and the NP agree and the NP is not incorporated), the surface form of predicate nominals and nominal small clauses, and the syntax of Case in Wh-movement constructions. Until we gain more insight into these problems, this parameter has, if nothing else, allowed me to describe, analyze and present a substantial part of the grammar of Bambara in a simple fashion: the syntax of I, including the interesting properties of copula-like constructions; the problems of the interaction of V movement and transitivity, a problem reminiscent of ergative Case-marking systems; the surface form of existential and presentational constructions; the distribution of nominal small clauses; the syntax of causative constructions; and some intriguing properties of the A-bar system.

REFERENCES

- Aoun, Joseph, Norbert Hornstein, David Lightfoot and Amy Weinberg: 1987, 'Two Types of Locality', *Linguistic Inquiry* 18, 537-577.
- Baker, Mark: 1988, *Incorporation*, University of Chicago Press, Chicago.
- Belletti, Adriana: 1988, 'The Case of Unaccusatives', *Linguistic Inquiry* 19, 1-34.
- den Besten, Hans and Corretje Moed van Walraven: 1985, 'The Syntax of Verbs in Yiddish', in Haider and Prinzhorn (eds.), *Verb Second Phenomena in Germanic Languages*, Foris, Dordrecht.
- Bird, Charles: 1966, *Aspects of Bambara syntax*, unpublished Ph.D. dissertation, UCLA.
- Bird, Charles and Mamadou Kante: 1976, *Intermediate Bambara*, Indiana University Linguistics Club, Bloomington.
- Bird, Charles, John Hutchison and Mamadou Kante: 1976, *Beginning Bambara*, Indiana University Linguistics Club, Bloomington.
- Bok-Bennema, Reineke: 1991, *Case and Agreement in Intuit*, unpublished Ph.D. thesis, Tilburg.
- Bok-Bennema, Reineke and Anneke Groos: 1984, 'Ergativiteit', *GLoT* 7, 1-49.
- Bok-Bennema, Reineke and Anneke Groos: 1988, 'Adjacency and Incorporation', in Everaert et al. (eds.) *Morphology and Modularity*, Foris Publications, Dordrecht, 33-56.
- Borer, Hagit: 1984, 'I-subjects', *Linguistic Inquiry* 17, 375-416.
- Chomsky, Noam: 1986a, *Barriers*, MIT Press, Cambridge, Massachusetts.
- Chomsky, Noam: 1986b, *Knowledge of Language: Its Nature, Origin, and Use*. Preager Publishers, New York.

- Chomsky, Noam: 1991, 'Some Notes on the Economy of Derivation and Representation', in Robert Freidin (ed.) *Principles and Parameters in Comparative Grammar*, MIT Press, pp. 417–459.
- Cinque, Guillermo: 1990, 'Ergative Adjectives and the Lexicalist Hypothesis', *NLLT* 8, 1–39.
- Courtenay, Karen: undated, Bambara Class material, UCLA.
- Emonds, Joseph: 1978, 'The Verbal Complex V'-V in French', *Linguistic Inquiry* 9, 151–175.
- Emonds, Joseph: 1986, *A Unified Theory of Syntactic Categories*, Foris, Dordrecht.
- Fortescue, M.: 1984, *West Greenlandic*, Crook Helm, London.
- Fukui, Naoki: 1986, *A Theory of Category Projection and Its Application*, unpublished Ph.D. dissertation, MIT.
- Hoekstra, Teun and Rene Mulder: 1990, 'Unergatives as Copular Verbs: Locational and Existential Predication', *The Linguistic Review* 7, 1–79.
- Huang, C.-T. James: 1982, *Logical Relations and the Theory of Grammar*, unpublished Ph.D. dissertation, MIT.
- Huang, C.-T. James: 1984, 'On the Distribution and Reference of Empty Pronouns', *Linguistic Inquiry* 15, 531–575.
- Jaeggli, Osvaldo 1982, *Topics in Romance Syntax*, Foris, Dordrecht.
- Kayne, Richard: 1985, 'L'accord du participe passé en français et en italien', *Modèles Linguistiques* 7, 73–80.
- Kitagawa, Yoshihisa: 1986, *Subject in Japanese and English*, unpublished Ph.D. dissertation, distributed by the Graduate Linguistic Student Association, Amherst.
- Koopman, Hilda: 1984, *The Syntax of Verbs: from Verb Movement Rules in the Kru languages to Universal Grammar*, Foris, Dordrecht.
- Koopman, Hilda, and Dominique Sportiche: 1985, *Theta Theory and Extraction*, GLOW newsletter.
- Koopman, Hilda, and Dominique Sportiche: 1986, 'A Note on Long Extraction in Vata and the ECP', *NLLT* 4, 357–374.
- Koopman, Hilda, and Dominique Sportiche: 1991: 'The Position of Subjects', in *Lingua* 85, 211–258.
- Kuroda, S. Y.: 1986, 'Whether you agree or not; rough ideas on the comparison of English and Japanese', *Linguisticae Investigationes* XII, 1–47.
- Larson, Richard: 1985, 'Bare-NP adverbs', *Linguistic Inquiry* 16, 595–621.
- Larson, Richard: 1988, 'On the Double Object Construction', *Linguistic Inquiry* 19, 335–391.
- Mahajan, Anoop: 1990, *On the A/A-bar Distinction*, unpublished Ph.D. thesis, MIT.
- Pollock, Jean-Yves: 1981, 'On Case and Impersonal Constructions', in Robert May and Jan Koster (eds.), *Levels of Syntactic Representation*, Foris, Dordrecht, pp. 219–252.
- Pollock, Jean-Yves: 1989, 'Verb Movement, UG and the Structure of IP', *Linguistic Inquiry* 9, 101–136.
- Rizzi, Luigi and Ian Roberts: 1989, 'Complex Inversion in French', *Probus* 1, 1–30.
- Rouveret, Alain and Jean-Roger Vergnaud: 1980, 'Specifying Reference to the Subject', *Linguistic Inquiry*, 9, 197–260.
- Sadock, Jerry: 1985, 'Autolexical Syntax: a Theory of Noun Incorporation and Similar Phenomena', in *NLLT* 3, 300–319.
- Safir, Ken: 1985, *Syntactic Chains*, Cambridge University Press, Cambridge.
- Salleh, Ramdi Md: 1987, 'Fronted Constituents in Malay; Base structure and move A in a configurational Non-Indoeuropean Language', unpublished Ph.D. dissertation, University of Washington.
- Speas, Margaret: 1990, *Phrase Structure in Natural Language*, Studies in Natural Language and Linguistic Theory, Kluwer, Dordrecht.
- Sportiche, Dominique: 1988, 'Conditions on Silent Categories', Unpublished ms. UCLA.

- Sportiche, Dominique: 1990, 'Movement, Agreement and Case', Unpublished ms. UCLA.
- Stowell, Timothy: 1983, 'Subjects across Categories', *The Linguistic Review* 2, 285–312.
- Stowell, Timothy: 1986, 'Null Antecedents and Proper Government', *NELS* 16, 476–492.
- Torrego, Ester: 1984, 'On Inversion in Spanish and its Effects', *Linguistic Inquiry* 15, 103–127.
- Tremblay, Mireille: 1991, *Dative and Possession: Binary Branching from the Lexicon to the Syntax*, unpublished Ph.D. dissertation, McGill University.
- Williams, Edwin: 1984, 'There-insertion', in *Linguistic Inquiry* 15, 131–153.
- Woolford, Ellen: 1989, 'The position of unaccusative subjects in SVO languages: the sole NP constraint', unpublished ms., University of Pennsylvania. [revised version to appear in *NLLT* 11]

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