

## **Inalienable possession in Baule and its neighbors**

Martha Larson

Cornell University

Baule and its neighbors with grammaticalized inalienability distinguish Inalienably Possessed Nouns from Independent Nouns in the lexicon. The surface syntax of Inalienably Possessed Nouns derives from their subcategorizational dependency on a possessor, which drives overt  $N \rightarrow D$  movement. Inalienably Possessed Nouns are often overlooked in Baule since their movement is obscured by Baule's setting of the possessor feature checking parameter, which also allows movement to D. Establishing the existence of Inalienably Possessed Nouns in Baule makes it possible to account for Baule prosodic word formation in terms of syntax alone, offering an alternative to Leben and Ahoua (1997).\*

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Baule is a Kwa language of the Tano group and is spoken in the Côte d'Ivoire by 2 million speakers. Baule and many languages geographically and genetically close to it exhibit grammaticalized inalienability. Grammaticalized inalienability is an inalienability effect that is defined in the lexicon as a grammatical feature that characterizes a noun. Inalienability is easily overlooked in Baule since it manifests itself as a distribution constraint, and is not associated with a distinct surface configuration, as it is in other languages with grammaticalized inalienability. This paper presents an analysis under which Inalienably Possessed Nouns in all the languages considered share a common encoding of inalienability in their argument structure that translates into a common feature checking requirement, namely, overt  $N \rightarrow D$  movement. The surface differences between Baule and other languages are demonstrated to result from an independent parameter regulating how agreement features of possessors in Baule can be checked. All the languages discussed here require possessors to check strong D-features, which they do by moving to SpecDP in the overt syntax. Baule, however, implements an interpretation of general principles of economy under which possessors can also move to D in the overt syntax, if they lack independent justification for checking features in SpecD.

The following examples illustrate the most salient behavioral contrast between the two Baule lexical classes distinguished by inalienability, which I term the Independent Noun class and the Inalienably Possessed Noun class.

#### Independent Noun Class (Baule)

- |       |   |       |  |
|-------|---|-------|--|
| (1a.) | Áyá flúwá yê<br>Aya book presentative<br>'This is Aya's book' | (1b.) | Flúwá yê<br>book pres.<br>'This is a book' |
|-------|---|-------|--|

#### Inalienably Possessed Noun Class (Baule)

- |       |  |       |   |
|-------|--|-------|---|
| (2a.) | Áyá tí yê<br>Aya head presentative<br>'This is Aya's head' | (2b.) | *Tí yê<br>head presentative<br>'This is a head' |
|-------|--|-------|---|

This contrast is called the possessor restriction and diagnoses the presence of an inalienability effect. The possessor restriction has been mentioned in the Baule literature (Carteron (1992), Timyan (1977), Creissels and Kouadio (1977)), although all nouns subject to the restriction have not before been identified as sharing a common 'inalienable' semantics. A noun of the Independent Noun class (the majority of Baule nouns) can be used either with a possessor or without a possessor, whereas a noun of the Inalienably Possessed Noun class cannot be used without a possessor. A possible account for the possessor restriction is that it is a constraint that operates exclusively on a semantic level. Under such an account, Independent and Inalienably Possessed Nouns would not be distinguished with respect to their syntax. This paper discredits such an account, and establishes that in Baule, Inalienably Possessed and Independent Nouns are syntactically distinct. In Baule, just as in neighboring languages, Inalienably Possessed Nouns must undergo  $N \rightarrow D$  movement in the overt syntax.

The first section of this paper proposes a formal semantic dependency that captures the conceptual connection between possessor and possessum generally taken to characterize inalienability as a cognitive category.

The second section demonstrates that this semantic dependency can be encoded in the syntax by assuming that the lexical entry of an Inalienably Possessed Noun grammaticalizes inalienable semantics as an argumental dependency between the noun and its possessor. This dependency translates into the restriction that Inalienably Possessed Nouns have strong features that must be checked against D by  $N \rightarrow D$  movement in the overt syntax. I present examples of this behavior pattern from Bambara, Fante, and Twi. A final example shows that in Baule  $N \rightarrow D$  movement of Inalienably Possessed Nouns is indirectly detectable.

In the third section the Baule possessive construction is introduced. In Baule, as in all the languages considered here, possessors are required to move in the overt syntax out of the NP, where they are base generated, and check features in the functional projection

immediately dominating NP. I show that Baule is unique in that it has are two routes by which this requirement can be fulfilled. Possessor features can be checked through a classical Spec-head relation from SpecDP or directly by raising to D. Baule possessor feature checking is sensitive to general principles of economy and allows possessors to check features as heads by movement to D, unless they possess internal structure that is relevant for the evaluation of their reference at LF.

Armed with an operative account of Baule possessive constructions, section four revisits the question of the character of inalienability in Baule. The fact that when Inalienably Possessed Nouns themselves are used as possessors they pattern with proper nouns and pronouns indicates that they have an NP which has been vacated and clinches my argument that in Baule Inalienably Possessed Nouns must undergo overt  $N \rightarrow D$  just as in neighboring languages.

In the fifth and final section, I demonstrate that by making reference to the differences between nouns belonging to the Inalienably Possessed Noun class and nouns belonging to the Independent Noun class, it is possible to formulate an account of the formation of the Baule prosodic word that makes reference to syntax alone. The account of the Baule prosodic word that this paper offers is an alternative to the account of Leben and Ahoua (1997), which contends that in Baule the prosodic word has a crucial dependence on phonology.

The picture that emerges is that Baule has an easily overlooked, but structurally active noun class of Inalienably Possessed Nouns, whose syntactic mechanics completely parallel those of congruent classes in neighboring languages.

**1. Formally representing the semantics of inalienability.** If a language reserves special treatment for nouns designating kin terms, body parts, intrinsic characteristics or spatial orientation terms, the language is generally considered to exhibit inalienability effects. Entities standing in an inalienable relationship to one another are commonly described as

being conceptually linked. Authors mention permanence, obviousness, inseparability, inextricability, and exclusivity in their attempts to characterize this relationship (Ameka 1996, Heine 1997, Velazquez-Castillo 1996, Vergnaud and Zubiarreta 1992). The conceptual link between possessor and possessum translates directly into a semantic constraint: an inalienable in isolation is not interpretable. It is only in relation to their possessor that inalienables acquire reference (Nichols 1988, Tellier 1990). The generalization that coalesces is that inalienability is a referential relation that constrains the interpretation of possessa.

In Baule, two facts make it clear that the inalienability at work is grammaticalized inalienability. First, the speaker does not have a choice to use a noun form in an alienable way, or in an inalienable way. The Independent/Inalienably Possessed Noun alternation, illustrated in (1) and (2) above, operates purely on a lexical basis. Second, although nouns belonging to the Inalienably Possessed Noun class all have inalienable semantics (in fact, in Baule, all Inalienably Possessed are kin terms or body parts), many nouns which, on the basis of their semantics, would be plausible Inalienably Possessed Nouns, actually belong to the Independent Noun class, for example, *nyúnu* 'face' and *búE* 'nose'. Inalienability in Baule has the status of a lexical constraint.<sup>1</sup>

A typical possessive construction is analyzed as a type of conjunctive composition in a standard system of predicate logic (refer to Heim & Kratzer 1998, Chierchia and McConnell-Ginet 1990 for expositions of such a system). The expression 'John's books' is the intersection of the set of all things that are John's with the set of all things that are books.

$$\text{John's}(x) \vee \text{book}(x)$$

Possession is thus a subset of modification; two functions of type  $\langle e,t \rangle$  conjoin to form a third of type  $\langle e,t \rangle$  and the first conjunct is a set defined by a 'belongs to'-type function.

Intersective modification falls short of being able to adequately capture inalienable possession. Since inalienables cannot be interpreted independently of their possessors, it is

undesirable to represent them as independent sets, as with the function  $\text{book}(x)$  above. The relationship between inalienable nouns and their possessors is closer to that exhibited by non-intersective adjectives and the nouns they modify. Non-intersective adjectives are adjectives that modify along a continuum that is defined with respect to that which they are modifying (Refer to Chierchia and McConnell-Ginet 1990, Heim & Kratzer 1997, Higginbotham 1985).

The logical representation of an inalienable that would implement the insight that inalienables should be represented by non-intersective modification is a second order function of type  $\langle\langle e,t\rangle, \langle e,t\rangle\rangle$ . Take  $\text{head}(y)$  to be an example of the  $\langle\langle e,t\rangle, \langle e,t\rangle\rangle$  function representing the inalienable. The function  $\text{head}(y)$  operates on  $\text{John's}(x)$ , the set of all things belonging to John, yielding a function of the type  $\langle e,t\rangle$ , namely  $\text{head}_{\text{John's}}(x)$ . The expression 'John's head' has the functional representation:

$$\text{John's}(x) \vee \text{head}(\text{John's}(x)) \quad \text{or} \quad \text{John's}(x) \vee \text{head}_{\text{John's}}(x)$$

This representation captures inalienable possession without requiring inalienables to be represented by sets independently of their possessors. Note the parallel between  $\text{John's}(x) \perp \text{head}_{\text{John's}}(x)$  and the function  $\text{John}(x)$ . Both map to a range containing a single entity, that entity being John's head in the case of the former and John himself in the case of the latter. This parallel between inalienables and proper names will show up again in the syntax.

This section has motivated the definition of inalienability in the conceptual realm as a conceptual link between possessum and possessor. This link can be formally encoded into the semantics by requiring inalienables to be second order functions of the type  $\langle\langle e,t\rangle, \langle e,t\rangle\rangle$ . The higher order of inalienables means that they must operate first on a function  $\langle e,t\rangle$  before they are reduced to having the semantics of a standard noun.

**2. The Syntax of Inalienability.** The formal semantic requirement that an inalienable be of type  $\langle\langle e,t\rangle, \langle e,t\rangle\rangle$  is incorporated into the syntax through the mediation of the lexicon. The lexicon lists Inalienably Possessed Nouns with a subcategorization frame encoding their

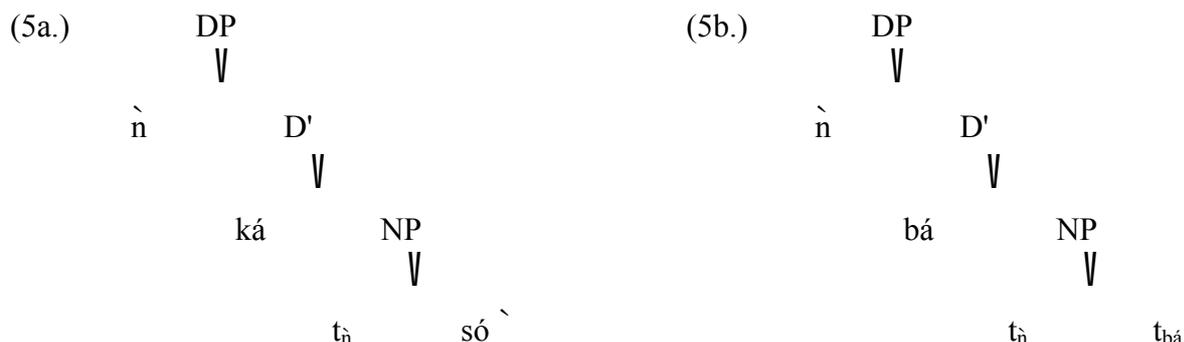
external dependency. Independent Nouns have no subcategorizational requirements. A substantial number of authors have adopted the position that inalienability expresses itself in the syntax of a language by dictating the argument structure of nouns in the lexicon, including Seidl (2000), Baauw (1996), Vergnaud and Zubizarreta (1992), Tellier (1988, 1990), Authier (1988) and Seiler (1983). Nouns of the Inalienably Possessed class, but not nouns of the Independent class, have an obligatory argument and are thus subject to the projection principle.

I would like to put forward that in languages that demonstrate grammaticalized inalienability, the argumental dependency of the Inalienably Possessed Noun on its possessor forces the Inalienably Possessed Noun to merge with its possessor in surface structure. I will make the case with examples from several languages genetically and geographically close to Baule and finally for Baule itself. Couching this idea in the theoretical framework of the Minimalist Program (Chomsky 1995), I propose that the merger of Inalienably Possessed Noun with possessor takes the form of  $N \rightarrow D$  movement in the overt syntax. The Inalienably Possessed Noun carries strong features that require it to incorporate into D, the functional head bearing the agreement and case features of the possessor.<sup>2</sup>

Many languages neighboring or directly related to Baule encode inalienability as a grammatical feature in the lexicon, and thereby divide nouns into Independent and the Inalienably Possessed Noun classes. In particular, I will examine a selection of languages from the Manding family, geographic neighbors to Baule, and the Kwa family, close relatives to Baule. Although the noun classes in these languages may not be exactly coextensive with the Independent and the Inalienably Possessed Noun classes in Baule classes, they are characterized by the same possessor restriction that diagnoses inalienability in Baule. I will argue that the same syntactic mechanism, namely the overt incorporation of Inalienably



The syntactic structures corresponding to (3a.) and (4a.) are illustrated in (5a.) and (5b.). The possessor moves overtly to SpecDP to check features. The reflex of this checking is an overt agreement marker in D. When the possessed noun is an Independent Noun, it remains in situ in the NP as in (5a.). When the possessed noun is an Inalienably Possessed Noun, it must move in the overt syntax to D as in (5b.).



When N fills D, instantiation of checked features is no longer overt, and no marker appears.

Fante is a language that, like Baule, belongs to the Tano subgroup of the Kwa family.

All possessive constructions in Fante use a possessive marker.

Independent Nouns (Fante)

(6a.) [ñsá] 'drink'  
 Kòfí né ñ!sá  
 Kofi poss. drink  
 'Kofi's drink'

Inalienably Possessed Nouns (Fante)

(6b.) [ñsá] 'hand'  
 Kòfí né ñsá  
 Kofi poss. hand  
 'Kofi's hand'

(Data from Dolphyne 1988)

Like in Manding, the possessor in Fante must move overtly to SpecDP to check features. An agreement marker results in D. The Independent Noun remains in situ and a NP boundary intervenes between it and the possessor. For this reason, no low tone deletion occurs. The Inalienably Possessed Noun, on the other hand, must incorporate into D overtly. As a result, possessor and possessed are within the domain required for low tone deletion. Unlike in Manding, the Inalienable noun can adjoin to an overt marker in D, and does not replace it.

Fante forms the Akan group together with Twi. In Twi N → D movement of Inalienably Possessed Nouns is readily evident.

## Independent Nouns (Twi)

- (7a.) [̀nsá] 'drink'  
 Kòfi ń!sá  
 Kofi drink  
 'Kofi's drink'

## Inalienably Possessed Nouns (Twi)

- (7b.) [̀nsá] 'hand'  
 Kófí ńsá  
 Kofi hand  
 'Kofi's hand'

(Data from Dolphyne 1988)

In Twi there are no possessive markers, which I interpret to mean that there is no overt reflex of agreement in D. Otherwise the situation is the same as in Fante. Low tone deletion is blocked unless possessor has been incorporated into possessed.

In Baule, the fact that Inalienably Possessed Nouns must undergo  $N \rightarrow D$  in overt syntax is not always immediately evident. Examples (1a.) and (2a.) above, show no surface distinction between Independent and Inalienably Possessed Nouns. If we chose an example, however, where the possessor has obviously moved overtly, it is plausible that Inalienably Possessed Nouns incorporate into D while Independent Nouns do not.

## Independent Noun class (Baule)

- (8a.) Áyá í bólí nín (í) ákó  
 Aya 3so goat and 3so chicken  
 'Aya's goat and chicken'

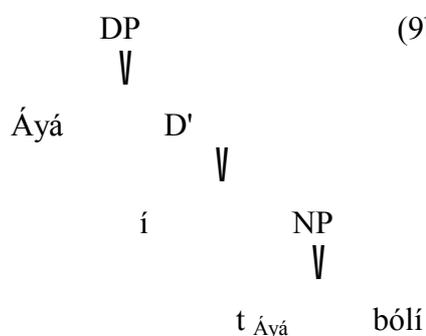
## Inalienably Possessed Noun class (Baule)

- (8b.) Áyá í ní nín \*(í) sí  
 Aya 3so mother and \*(3so) father  
 'Aya's mother and father'

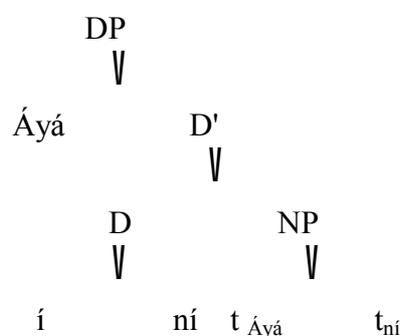
(8a.) and (8b.) demonstrate that in Baule both Independent and Inalienably Possessed Nouns can conjoin under a possessor (3so = third person singular object (object = non-subject)).

(9a.) and (9b.) illustrate the structures associated with these conjunction constructions.

(9a.)



(9b.)



My analysis of these constructions is that in both cases possessor, *Áyá*, has moved to SpecDP to check its agreement and case features against D. An agreement marker in D agreeing in person and number with the possessor is the overt reflex of this movement. The Independent Noun remains in situ, while the Inalienably Possessed Noun incorporates into D. In both cases D' can be conjoined under the possessor in SpecDP. But because of the incorporation, there is no possibility for conjunction at the NP level in the Inalienably Possessed construction.<sup>3</sup>

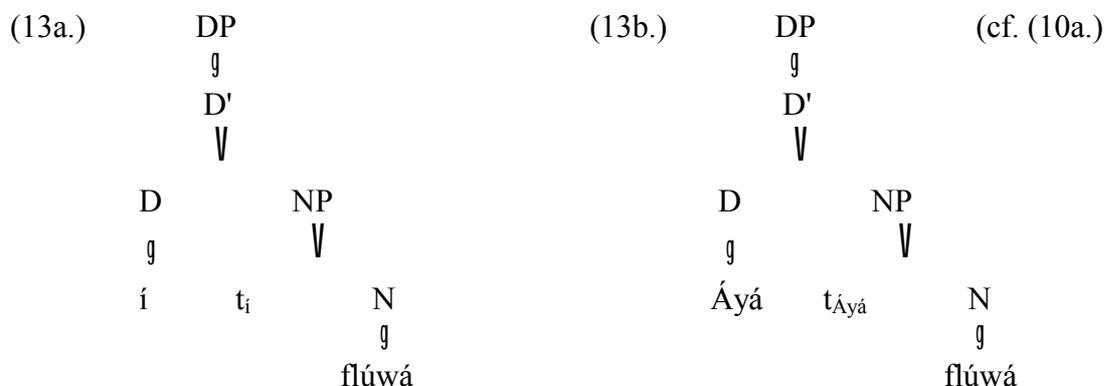
In the next section we will see that Baule has a second route open for checking the features of possessors, and it is exactly this second possibility that makes inalienability look different in Baule than in its neighbors. Understanding the complete mechanism by which Baule possessors check features, however, will lead us to evidence that will provide key support for the conclusion so strongly suggested by (9), namely that in Baule, just like in its neighbors, Inalienably Possessed Nouns are syntactically active and undergo overt  $N \rightarrow D$ .

**3. Possession in Baule.** The licensing requirement on Inalienably Possessed Nouns conspires with the behavior of possessors, driven by the Baule setting of an independent possessor feature checking parameter, to produce the surface syntax of Baule DPs. This section describes the details of the Baule possessive construction. I demonstrate that the Baule setting of the possessor feature checking parameter requires full possessors, namely, possessors whose internal structure is relevant throughout the syntactic derivation, to check features in SpecDP, but allows all other possessors to check features by adjunction to D.

The following four examples present the Baule possessive construction data. (10a.) and (10b.) show that proper names in Baule can possess with or without using a resumptive agreement marker (3so = third person singular object (object = non-subject)) as a possessive marker. (11a.) and (11b.) show that if the possessor is a common noun the structure is



In Baule, a possessor can also check the same strong D-features in a second manner, by raising directly to D as illustrated by (13a.) and (13b.).



Possessive pronouns always check features by raising to D, as in (13a.). Proper names undergo raising to D as in (13b.) as an alternative to checking features in SpecDP as in (12a.).

The general behavior of proper names and pronouns supports the conclusion that they are maximal projections in Baule. Proper names and pronouns cannot co-occur with determiners nor can they be modified or quantified. Pronouns and proper names are assigned  $\theta$ -roles by verbs in base argument positions. They can act as the objects of postpositions, and lastly, pronouns and proper names can also be focused or topicalized.

Raising of pronouns and proper names to D as in (13a.) and (13b.), involves movement from an argument position of the possessed noun to a head position. This movement appears to be an adjunction of an XP to an  $X^0$ , a violation of the Head Movement Constraint, generally assumed to restrict movement to heads. I will argue that general considerations of economy in Baule do not require constituents to participate in derivations with full XP status unless their XP status is justified not only by the presence of actual internal structure but also by independent considerations of interpretation.

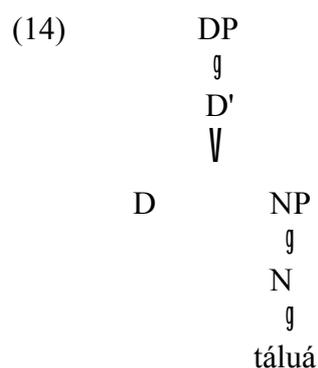
Various accounts in the literature have approached the distributional differences between nouns, on the one hand, and pronouns and proper names, on the other, by proposing that they are differentiated by their extended nominal structure. The classic Postal (1966)

account analyzes pronouns as underlying articles which derivationally receive the status of nouns in surface structure. Abney (1987) reaches the conclusion that pronouns are D's and direct daughters of DP. More recently Longobardi (1994) has proposed that pronouns and proper names are raised to D to check R+ (referentiality) features. Cardinaletti (1994) and Koopman (1999) have formulated explicit dependencies between the movement that a pronominal DP undergoes in the syntax and its internal structure. I extend this basic insight and establish a relationship between internal form and external distribution of not only pronominal DPs, but of all DPs in Baule. This connection turns out to introduce a pleasing simplification into our account of possessor behavior in Baule. In particular, it eliminates the apparent violation of the Head Movement Constraint.

In her analysis of pronouns, Cardinaletti (1994), building on Chomsky (1992) and Longobardi (1991), contends that pronominal DPs without semantic content must check features in the overt syntax since, containing no semantic content, they are invisible to rules at LF. For Cardinaletti, lack of semantic content corresponds to lack of a NP projection. General considerations of economy force a pronoun to be interpreted as lacking a NP projection unless independent conditions dictate otherwise.

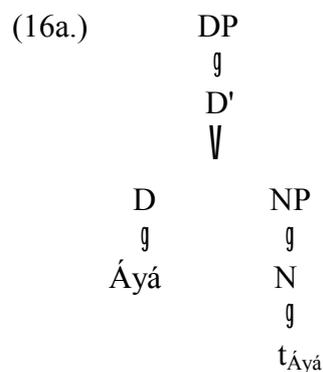
My extension of the Cardinaletti (1994) account is motivated by the observation that Baule has a narrower interpretation of general principles of economy than that observed by Cardinaletti. This conservative implementation of economy instantiates itself in the parameter setting that Baule chooses for possessor feature checking. I propose that checking conditions are sensitive not only to the presence or absence of NP as such, as Cardinaletti contends, but also to the presence or absence of NP structure relevant to interpretation. In Baule DP can very obviously project an NP, yet still behave in the syntax as if it lacked one, if that NP has been emptied by movement to higher checking positions.

Under this account, the contrast between (12) and (13) above no longer resists analysis. In (12a.) and (12b.) the possessors *Áyá* and *táluá* 'the girl' are DPs and check features as true maximal projections by moving overtly to SpecD. The internal structure of *táluá* 'the girl' is illustrated in (14). *táluá* remains in base position throughout the derivation, which corresponds to a DP containing a NP that is not empty and therefore relevant to the evaluation of its reference.



From the semantic perspective, *táluá* provides a range, over which a definite determiner quantifies. Note that although *táluá* must be interpreted as definite, a definite determiner is not overtly realized<sup>4</sup>.

The reason for which *Áyá* is a maximal projection in example (15b.) is a little less straightforward. Proper names seem to have a certain semantic content, which makes the analysis that they are projected as N intuitively unobjectionable. I will assume that they are required to undergo overt  $N \rightarrow D$ , as shown in (16a.) in order to check strong features such as the +R of Longobardi (1994).



The fact that proper names are XPs is, however, not critical for their interpretation. Proper names set up no quantificational structure where an operator restricts a range.

Baule possessive feature checking is sensitive to principles of economy. Since the internal structure of proper names is not important for evaluation of their reference at LF, proper names are not required to check possessor features as full XPs, but rather can check possessor features by adjoining to D as if it were X. This behavior is observed in (13b.)

The fact that proper names can occupy a possessor position that true maximal projections can never surface in is a familiar phenomenon from German, which displays the following paradigm:

Possessive Constructions (German)

- |        |  |        |  |
|--------|--|--------|--|
| (17a.) | Peters Buch<br>Peter's book<br>'Peter's book'                    | (17b.) | das Buch Peters<br>the book Peter-gen.<br>'Peter's book'                       |
| (17c.) | *der Lehrers Buch<br>the teacher's book<br>'*The teacher's book' | (17d.) | das Buch des Lehrers<br>the book the-gen. teacher-gen.<br>'The teacher's book' |

Only proper names and pronouns are permitted in the pre-nominal possessor position. Other possessors must occur post-nominally. Giorgi and Longobardi (1991) propose a case mechanism to explain this distribution, namely that possessors and pronouns are intrinsically marked with case in the lexicon, but that everything else gets marks for case in the syntax in a post-lexical position. Such an account fails to explain why exactly pronouns and proper names in particular are subject to special requirements. Schoorlemmer (1998) and Zwarts (1992) ascribe the restriction on the occupation of the pre-nominal position to the semantics particular to proper names and pronouns, which they identify as inherent referentiality. Under my account the mechanism is more explicit. These elements lack internal quantificational structure, and therefore can check features as heads.

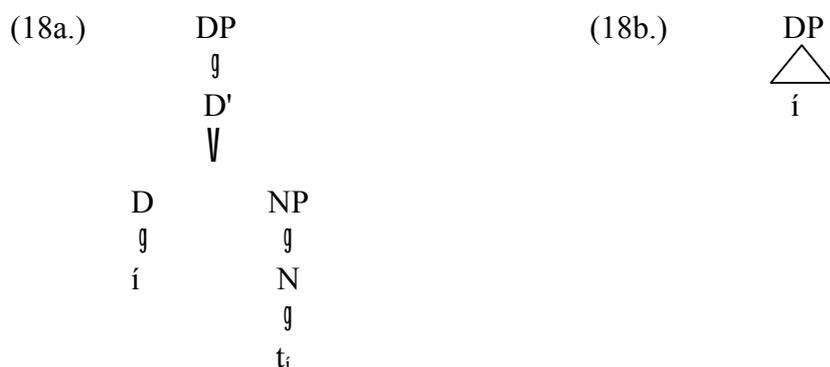
At this juncture it is interesting to recall that in Baule proper names can behave either as full-fledged DPs or as DPs without internal structure. Proper names in German share the

same two possibilities. In both Baule and German, proper names can check features as a maximal projection in SpecD, (17b.) and (10b.), or as a head, by adjoining to D, (17a.) and (10a.). The ambiguity of proper names is demonstrated by the fact that in German they can optionally appear with definite articles, *Peter* 'Peter' alternates with *Der Peter* 'The Peter'. The form without the article is the form without any relevant internal structure, which is witnessed by the fact that it cannot be modified by any adjectives, in contrast to the DP form.

Like proper names, pronouns are a type of element whose internal structure is irrelevant to the evaluation of its reference. Cardinaletti (1994) motivates  $N \rightarrow D$  for strong pronouns and this analysis is not inconsistent for Baule, since Baule has a single paradigm of pronouns which coordinate, topicalize and act as prepositional objects the way strong pronouns do cross-linguistically. The strong D-feature is once again the +R of Longobardi (1994). Note that the possessive pronoun, *í*, is homomorphic with the 3so marker also occurring in D when a full third person singular DP possessor is moved from argument position within the NP to SpecD. *í* is simply the overt realization of third person singular features checked in D.  $N \rightarrow D$  leaves the NP empty and indeed since pronouns are basically bundles of  $\Phi$ -features their reference involves no composition of an operator with a range. Baule's interpretation allows a pronominal possessor to check features as  $X^0$  in the syntax.

Regarding pronouns as XPs that have lost XP status somewhere along the course of the syntactic derivation is overly simplistic, however. Strictly speaking, nothing in my account hinges on the assumption that pronouns project an NP, but lack internal structure because they undergo  $N \rightarrow D$  in the overt syntax. Baule pronouns might equally well lack internal structure because they are base generated as DP. Baule's strict interpretation of economy actually frees the pronoun from even having to commit itself to one structure or the other. Baule pronouns can be conceptualized as fully ambiguous between (18a.) and (18b.).

Pronouns have only one structural characteristic that can be regarded as truly determined, and that is that they possess no internal structure necessary for their interpretation.



This section has demonstrated that possessors whose DP status is not independently necessary are allowed to check possessor features as  $D^0$ . Baule implements general principles of economy by allowing a constituent to comply to the checking requirements of an  $X^0$ , a simpler category, unless it is absolutely necessary that that constituent acts as XP. I assume that  $X^0$  is a more fundamental category than XP and therefore simpler in the relevant sense, since it enters the syntax directly from the lexicon and has no compositional structure.

A question that immediately comes to mind is whether there are other situations where DPs must check features as  $D^0$ , or other XPs that may check their features as  $X^0$  if they lack internal structure that must be evaluated for their interpretation. The surface structure of Baule is noticeably devoid of evidence of movement. DPs that are arguments of verbs do not seem to move out of their base positions to check features until LF. Other XPs that might have features to check remain likewise rooted. Despite the additional dimension of freedom introduced by my proposal that economy allows some XPs to check features as  $X^0$ s, the system has remained happily constrained<sup>5</sup>.

**3. Inalienable possession in Baule revisited** We have seen that in Baule inalienability is grammaticalized and can be diagnosed by the possessor restriction. Additionally I have argued that the patterns of noun phrase coordination illustrated in (8a.) and (8b.) suggest that Inalienably Possessed Nouns in Baule undergo overt  $N \rightarrow D$  like they do in other languages

genetically and geographically close to Baule. In this section I will introduce a third behavior distinguishing Inalienably Possessed Nouns from Independent nouns, which has, curiously enough, gone heretofore unnoticed in the literature. (19) and (20) illustrate that Inalienably Possessed Nouns pattern with proper names and not with common nouns when they themselves are used as possessors. This behavior solidifies the proof that Baule Inalienably Possessed Nouns are structurally active and undergo  $N \rightarrow D$  in the overt syntax.

Independent Noun possessor in possessive construction (Baule)

- (19a.) \*í tálúa flúwú yê.                      (19b.) í tálúa í flúwá yê  
 3so girl book pres.                              3so girl 3so book pres.  
 '\*This is her girl's book'                        'This is her girl's book'

Inalienably Possessed Noun possessor in possessive construction (Baule)

- (20a.) í sí flúwá yê                              (20b.) í sí í flúwá yê  
 3so father book pres.                              3so father 3so book pres.  
 'This is her father's book'                        'This is her father's book'

The Independent noun, here demonstrated as possessed so as to be parallel to the Inalienable noun case, must move overtly to SpecDP in order to check case, as witnessed by the presence of the agreement marker. The Inalienably Possessed Noun can either move to SpecDP or to D, just like a proper name would.

The structure of the Inalienably Possessed possessor in (20a.&b.) is illustrated in (21).

- (21.)
- |   |    |                |                 |
|---|----|----------------|-----------------|
|   | DP |                |                 |
|   | ↓  |                |                 |
|   | D  |                | NP              |
|   | ↓  |                | ↓               |
| í | sí | t <sub>i</sub> | t <sub>sí</sub> |

The possessive pronoun moves to D to check features since it is itself has no internal structure that would force it to check features by movement to a SpecDP position. The Inalienably Possessed Noun also moves to D because the argumental dependency of an

Inalienably Possessed Noun on its possessor requires the Inalienably Possessed Noun to adjoin to D, the head bearing the  $\Phi$ -features of its possessor, before Spell-Out.

The Inalienably Possessed Noun acts like a proper name since it has, like a proper name, no relevant internal structure. An Inalienably Possessed Noun must move to D in the overt syntax to check features, leaving the NP empty. The correspondence in the semantics is clear, any range that the Inalienably Possessed Noun might provide for its possessor to quantify over has already been restricted by its argumental dependency on the possessor. There is therefore no evaluation of reference that must take place at LF and the internal structure of the Inalienably Possessed Noun is not critical to its interpretation.

This parallel between the semantics of proper names and the semantics of inalienables was already alluded to in the first section, where it was shown that an inalienable with a pronominal possessor, John's head, maps to the same kind of range as the proper name John. The semantic parallel is borne out in the syntax in the fact that Inalienably Possessed Nouns act as proper names when used as possessors. The parallel between proper names and Inalienably Possessed Nouns is further corroborated by the fact that Inalienably Possessed Nouns can be used as forms of address, as pointed out by Timyan (1977). The Baule child doesn't call his father 'Father', but rather says, 'My Father', *n sí*.

A final piece of evidence that Baule Inalienably Possessed Nouns undergo  $N \rightarrow D$  can be gleaned from Baule's closest sister-language, Nzema.

Independent Nouns (Nzema)

(22a.) wò élékà

your box

'your box' (Nzema)

Inalienably Possessed Nouns (Nzema)

(22b.) è nyé

your eye

'your eye' (Nzema)

(data from Chinebuah 1971)

In Nzema Inalienably Possessed Nouns require possessive pronouns different from those required by Independent Nouns. Possessive pronouns check features by moving to D, just as they do in Baule. The Inalienably Possessed Noun incorporates into D in the overt syntax.

Reflex of this movement is the special possessive pronoun used with Inalienably Possessed Nouns.

In this section, the following picture has emerged. Languages in which inalienability is grammaticalized come in two varieties. One variety is that of Baule and Nzema. Inalienably Possessed Nouns subcategorize for possessor arguments and undergo  $N \rightarrow D$  in overt syntax, but the facts of Baule possessor feature checking obscure the movement. Unless we are lucky to have a morphological alternation, as in Nzema, only careful observation of the distributional restrictions can bring to light the existence of the Inalienably Possessed Noun class. Another variety are languages in which the possessor always checks case in SpecDP, making the  $N \rightarrow D$  movement of the Inalienably Possessed Noun quite evident.

**5. Inalienable Possession in Baule: Does Syntax alone determine prosody?** Ahoua and Leben (1994) and Leben and Ahoua (1997) locate prosodic word boundaries by exploiting the particular manner in which Baule realizes a sequence of underlying High tones. A series of High tones in Baule is realized in a single continuous upstep pattern, for which I adopt the Leben and Ahoua term upsweep. Leben and Ahoua (1997) explore the rules of prosodic word formation in Baule, and conclude that in Baule, prosodic word boundaries correspond to syntactic projection boundaries, except in the case where monosyllables are involved. Concretely this means that modification constructions such as that in (23a.) are realized in a single upsweep, since only a single DP is involved, but that possessive constructions, such as that in (23b.), are realized in two upsweeps, since the possessor is in and of itself a maximal projection, namely a DP. When the modification construction is realized, the peak of the tonal curve is reached on the second syllable of the head noun *flúwá*, 'book'. Whereas when the possessive construction is realized, the tonal curve has two maxima, one on the second syllable of *Áyá*, which is also the final syllable of the possessor DP, and one on the second syllable of *flúwá*, 'book'.



In (24c.) the possessor *í sí*, 'her father', is not required to check case in SpecDP and has moved to check case in D and no prosodic word boundary is predicted between possessor *í sí* and possessed noun *bólí* since no DP boundary intervenes.

My analysis of (24b.) hails from a different quarter. My consultants report that (25a.) and (25b.) have necessarily two different interpretations, while (26a.) and (26b.) do not.

- |   |   |
|---|---|
| <p>(25a.) <i>bólí tí yê</i><br/>         goat head pres.<br/>         'This is a goat's head'</p> | <p>(25b.) <i>bólí í tí yê</i><br/>         goat 3so head pres.<br/>         'This is a goat's head'</p> |
| <p>(26a.) <i>Áyá tí yê.</i><br/>         Aya head pres.<br/>         'This is Aya's head'</p>     | <p>(26b.) <i>Áyá í tí yê</i><br/>         Áyá 3so head pres.<br/>         'This is Aya's head'</p>      |

I assume that this meaning difference arises from the fact that *bólí tí* is actually a compound, formed in the lexicon, and not a possessive construction, and for this reason is not split by a prosodic word boundary.

Baule offers no definitive grounds upon which to decide if an analysis like the present one, which takes Inalienably Possessed Noun class and the structure of the Baule possessive construction into account, is to be preferred over the Leben and Ahoua (1997) monosyllable account. The difficulty is that the only test available to diagnose the boundaries of the prosodic word is the high tone upsweep test, which can only be applied to phrases build entirely of constituents containing only high tones. All high tone Inalienably Possessed Nouns in Baule are monosyllabic, so there is no possibility to test whether polysyllabic Inalienably Possessed Nouns join adjoining prosodic domains, which they would have to do on the basis of their class membership alone.<sup>6</sup> On the other side of the coin, there are no high tone monosyllabic nouns in Baule which are not Inalienably Possessed, so it is impossible to discover whether monosyllables can form their own prosodic domains by virtue of being Independent Nouns. These facts point strongly to the conclusion that phonology plays a critical role in determining membership in the Inalienably Possessed Noun class.

The account of Baule word formation that is offered here, however, does serve to offer an explanation for several facts of Baule possession that are not captured by the monosyllable account. First, the monosyllable account does not predict the fact that it is exactly possessors and no other grammatical elements with which monosyllabic Baule nouns form prosodic words.

- (27a.) \**(i)* sí yĕ.  
 \*(3so) father presentative.  
 'This is her father'

The current account predicts that the possessive pronoun cannot be dropped since the Inalienably Possessed Noun *sí*, 'father', subcategorizes for a possessor. The monosyllable account does not prevent that the possessive from being dropped since it includes no principled reason why *sí*, 'father', cannot form a prosodic word with the word following it.

Second, the monosyllable account fails to make a direct prediction about the formation of a phonological word in cases where a monosyllabic possessor is involved.

- (28.) í sí í bóli yĕ.  
 3so father 3so goat presentative  
 'her father's goat'

(28) is realized in two upsweeps, the first with a maximum on *sí*, 'father', and the second with a maximum on the second syllable of *bóli*, 'goat'. The current account predicts that this is the case, since the boundary of the possessor DP intervenes between *sí*, 'father', and the agreement marker. The monosyllable account does not predict why the first upsweep stops with *sí*, 'father'. The agreement marker could have just as easily joined the phonological word *í sí* 'her father' as join the phonological word *bóli*, 'goat'.

Third, consider again (1a.), repeated here.

- (1a.) Áyá flúwá yĕ.  
 Aya book presentative  
 'This is Aya's book'

(1a.) is the Baule possessive constructions with a proper name possessor, but no agreement marker. This construction is realized as a single upsweep, with the tonal curve reaching a maximum at the second syllable of *flúwá*, 'book', a result unexpected under the Leben and Ahoua account which predicts two upsweeps, since the construction involves the maximal projection syntactic boundaries of both possessor and possessed and no monosyllables are involved. Under the current account, this construction is realized in a single upsweep, since the possessor has checked features by adjoining to D and there are no maximal projections intervening between possessor and possessed.

This paper began by using a conceptual definition of inalienability to motivate a semantic structure. This semantic structure is encoded into the lexicon in languages with grammaticalized inalienability and differentiates the Inalienably Possessed from the Independent Noun class. The paper went on to demonstrate that the distributional pattern of Inalienably possessed nouns in languages genetically and geographically close to Baule falls out from the argument structure of this noun class, which dictates that an Inalienably Possessed Noun move to D in the overt syntax. The surface differences between the behavior of Baule Inalienably Possessed Nouns and Inalienably Possessed Nouns in other languages was shown to result from the independent fact that Baule possessors check case overtly in SpecDP if they are full DPs but also by incorporation directly into D if their status as full DPs is not relevant to the evaluation of their reference, demonstrating the validity of the conclusion that Inalienably Possessed Nouns also move to D in Baule. Finally, it was shown that taking the existence of the Inalienably Possessed Noun into consideration, an account of the Baule prosodic word can be formulated entirely dependent on syntax. Analysis of the Inalienably Possessed Noun class has shed light on the Baule possessive construction as well as on the relationship between Baule and its neighbors.

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<sup>1</sup> The restriction that Inalienably Possessed Nouns must have possessors is a restriction on syntax only. In no way does this restriction prohibit the existence of other strategies that allow reference to inalienables without mentioning the possessor. In Baule there are three strategies that are used to refer to an inalienable in the Inalienably Possessed Noun class without having to make reference to a possessor. Some Baule inalienably possessed nouns have separate possessed and independent forms, as the example already mentioned above.

(i.) ‘father’            independent form: sie            possessed form: sí

In order to express the notion of 'head' without referring to the possessor, one must paraphrase (ii) or use a possessive pronoun with null semantic value (iii):

(ii.)	Sra <sub>1</sub> n tí yɛ <sub>1</sub>	(iii)	bé tí
	people head pres.		their hand
	‘This is a human head’		‘hand’

<sup>2</sup> Presumably it is this incorporation that differentiates inalienable possession in Baule from inalienable possession in languages like French, where an inalienable argument must be syntactically bound to the possessor argument, but where there is no adjacency restriction (see Vergnaud & Zubizarreta 1992 for discussion of the French construction).

<sup>3</sup> There is a second reading of (8a.) and (8b.) under which the two possessors are disjoint as illustrated in (iva) and (ivb).

(iva.)	Áyá í bólí nìn í ákɔ	(ivb.)	Áyá í ní nìn í sí
	Aya 3so goat and 3so chicken		Aya 3so mother and 3so father
	‘Aya's goat and his chicken’		‘Aya's mother and his father’

The underlying structure here is the coordination of two DPs, and the second 3so marker establishes independent reference and is a personal pronoun.

<sup>4</sup> In this example a nasal marker *-n* can be added to the end of *táluá* without changing the interpretation of the sentence. I believe this marker is to be correctly analyzed as number and for that reason it plays no role in this account.

<sup>5</sup> Baule compound infinitives might provide evidence that strict economy affects VPs as well as DPs. In Baule two main verbs can incorporate to form a compound infinitive, such as *kan-kle-le*, literally 'speak-show', meaning 'explain'. The verbs must have the same subjects and cannot be transitive unless their direct objects are also identical. The lower verb presumably occupies an Agr position dominating a VP that is empty, since its theta roles must be discharged to empty categories obligatorily co-referent with the arguments of the upper verb. Since its VP is empty, economy does not differentiate VP from V. The lower VP can therefore raise to adjoin to V, creating an compound infinitive. Such verbal incorporation is not possible in languages without the Baule sensitivity to economy, that rather prescribe that XPs projected for the distribution of theta roles retain a full-fledged maximal projection status throughout the derivation, even though they may retain no vestige of internal structure.

<sup>6</sup> A complete list of Inalienably Possessed Nouns with certifiable coverage is difficult to compile, and my own field work has indicated that not only dialectal variation, (noted by Timyan 1977) but also variation in the preferences of individuals may play a large role in keeping a good categorization of Baule nouns elusive.

Below is a list of the nouns that I have so far been able to confirm (using the possessor restriction as a diagnostic) form the class of Inalienably Possessed Nouns as it exists for my language consultants. My consultants speak the Faafue dialect and are from two villages outside of Bouaké on the road to M'Bahiakro, Tano Sakassou and Kouassiblekro. Note that the upsweep test will only work on high tone sequences.

#### Inalienably Possessed Noun Class

sí	father	sómaan	fiance(e)
wá	child	aosua	nephew
ánuman	grandchild	yí	wife
niànmán	sibbling	sá	hand
wún	husband	dyà	foot
ní	mother	tí	head