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Formal and cultural constraints on optional objects in Bislama

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ABSTRACT

Bislama allows phonetically overt and phonetically null noun phrases (NPs) in argument positions. This article explores constraints on the occurrence of null NPs in direct object position. Discourse factors (given/new status of referent, antecedent's form) and syntactic factors (antecedent's grammatical role, identification by a transitive suffix) are investigated. Morphosyntactic and semantic features that might transfer from substrate languages (referent's animacy, (in)alienable possession) and social factors (age, sex, language of education) are also examined. Strong priming effects for grammatical role of the antecedent and form of the antecedent are identified. Also salient are inalienable possession and semantic type of the verb. The effect of inalienable possession shows the highly abstract transfer of substrate features, raising questions about the modularity of grammar. It is argued that a key motivation for such transfer is not just linguistic availability, but the social and cultural significance of different kinds of possession in Melanesia.

Bislama is the primarily English-lexified creole spoken by the majority of people on Vanuatu. Some would call it an expanded pidgin because of the length of time in which the language has been in close contact with its substrate; I prefer to call it a creole on account of its social functions following, for example, Jourdan (1985). Bislama is an SVO language, but, in principle, all arguments can be realized overtly or be phonetically null. This article presents an initial foray into an investigation of what factors constrain the alternation between phonetically null and phonetically overt forms of nominal direct objects. An example of the variable is given in (1). In (1a) the direct object (in boldface) is first an overt full noun phrase (NP) and then null. In (1b) the second mention of the direct object is realized by a pronoun.[1]

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(1) a. Yu karem **top long rop ya**
2s bring top PREP vine SPEC
Yu givim ∅ long mi.
2s give ∅ PREP 1s
'You bring the end of that vine [and] you give [it] to me.'
b. Plante taem oli traem kam sutum **hem**
plenty time AGR try come shoot 3s
oli no save kasem **hem**
AGR NEG ABIL catch 3s
'They tried to come and shoot him lots of times, [but] they weren't able to.'

The formal (i.e., generative) linguistics literature abounds with discussion about the precise theoretical status of such phonetically null arguments in natural languages. The question is whether the position is essentially a pronominal (as phonetically null subjects in finite clauses are hypothesized to be) or whether it is an empty category controlled by an operator with wide scope over the clause. It seems that languages differ as to whether null direct objects are pronominal or not. Cole (1987) argued for analyzing null objects in Imbabura Quechua, Korean, and Thai as pronominals, as did Tarallo (1996) for Brazilian Portuguese and Dimitriadis (1994) for Modern Greek and Bulgarian. However, for Chinese, English, and European Portuguese it has been argued that null objects are operator-controlled empty categories and not pronominals (see Huang, 1989; Massam & Roberge, 1989; Raposo, 1986).

In Bislama it seems fairly clear that what we are dealing with is a pronominal-like empty slot and not some kind of topic operator. Null objects can be found in the complements of verbs of speech, for example, and we also find them in purpose clauses, as in (2).

(2) Taem mi kam blong soem ∅ long tufala
time 1s come COMP show ∅ PREP 2p
'[But] when I came to show [them] to the two of them'

In (2) and other subordinate clauses a pronominal account of such empty arguments is preferred within a Principles and Parameters(-like) framework. This is because, if we assume an operator analysis, the operator would need to be able to raise at LF to clause-initial position through the complementizer position in the lower clause. But this position is filled by the overt complementizer *blong*.

There are a number of possible factors that might interact with the form of the direct object and that therefore structure the focus of this investigation. Some are well-attested discourse factors that are known cross-linguistically to interact with the form of an argument (both subjects and objects). Others are more context-specific syntactic or semantic factors that are candidates for constraints either because of the historical development of Bislama or because of its continued contact with Eastern Oceanic substrate languages. This article also investigates the possibility that the variation may correlate with aspects of speakers' social background.

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The alternation was investigated in conversational Bislama recorded in the northern Vanuatu town of Santo (also known as Luganville) in 1994–1995. A total of 17 speakers were interviewed (8 women and 9 men), and all tokens of nominal direct objects (full NP, pronominal, and phonetically null) were analyzed using the multivariate analysis program, GOLDVARB. I would like to stress that, in conducting a quantitative analysis like this, there is no inherent claim that Bislama (any more than any other language) is some kind of homogeneous object for study. As an anonymous LVC reviewer pointed out, there is a lot of variability in the Bislama spoken throughout Vanuata (as has been documented in the ongoing work by Jean-Michel Charpentier and Darrell Tryon; see also Charpentier, 1979:195–198), and this variability is very apparent in towns like Santo, which are characterized by high levels of migration from various northern and central islands. However, a quantitative analysis such as this has a descriptive and explanatory function. A description that shows regular patterns underlying regional variability makes it meaningful to speak of Bislama as "a language." Such regularity is surely functional as well. By smoothing the road over potential bumps that might be caused by regional variation, such patterns help satisfy the communicative needs of the language's speakers.

The structure of the article is as follows. First, I introduce the full range of independent variables against which the direct object alternation is evaluated. Next, I briefly outline the methods of analysis and present the results of the analysis of variation. Finally, I explore the implications of the analysis and suggest avenues for future investigation.

INDEPENDENT VARIABLES

Social factors

The corpus under investigation was gathered in order to explore possible ongoing changes in the structure of Bislama. Given the relatively recent increase in the use of Bislama in a full range of social domains, one goal of the project was to determine whether there was any evidence that variables were increasingly functioning as indexes of culturally salient social categories. The whole corpus was recorded on audiotape in northern Vanuatu in 1994–1995. It consisted of conversations with 42 speakers ranging in age from 6 to approximately 65 years. Speakers in the urban center of Santo and as well as those in a village on an offshore island were recorded. This article presents the results for the urban speakers only. The sample for urban speakers covered a smaller age range (16 to mid 60s), but otherwise it was reasonably well balanced for sex, age, and language of education (French or English; some speakers had virtually no education, and so this factor turned out not to be relevant). There was a preponderance of speakers from the northwestern islands of Vanuatu, and slightly more speakers had finished some secondary education than for the corpus overall. However, as we shall see, none of these factors appeared to be relevant to the variation examined here.

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Discourse factors

It is manifestly clear the discourse factors exert a strong influence on the form of a nominal argument. In all languages there is a formal basis for differentiating given (or old) information from new information. It is seldom the case that there is a strict mapping between information structure and form (e.g., speakers may use a form probabilistically associated with new information for a given referent), but such distinctions underlie the use of indefinite articles, definite articles, demonstratives, and pronouns in English among other languages (Gundel, Hedberg, & Zacharski, 1993). Previous cross-linguistic work on the distribution of null objects has identified discourse factors as being relevant, regardless of whether they have the properties of pronominals (Keller & Lapata, 1999, for Modern Greek) or of operators (Bender, 1999, for English). For the purposes of this investigation, three basic information statuses were coded for: given, new, or inferable. Prince (1981, 1992) showed the relevance of a category of inferables in accounting for the form of a referent. An inferable entity is one which commonsense knowledge allows a hearer to predict from the previous mention of some other entity. Often the inferable entity stands in a set relationship with the antecedent or as part of a script (Cameron, 1997:45; Kellermann, 1995; Schank & Abelson, 1977). Thus, if someone mentions catching a bus, it is normal to assume that the bus has a driver, a set of wheels, a door, and so on. As a result, the use of the definite article with *driver* in (3) is felicitous, despite the referent being (strictly speaking) brand-new.

(3) Did I tell you what happened on my bus this morning? I swear the driver was half asleep.

In this study, an attempt was made to capture the distinction identified by Chafe (1994) between referents that are activated in the hearer's consciousness and referents that are given but not activated. The coding system used in the present study defined activation conservatively, requiring an activated antecedent for a null object to occur in the immediate preceding clause. Chafe (1994) and Givón (1990), for instance, opened the window somewhat wider; however, Givón's (1990:913) cross-linguistic work found that the antecedent for null anaphora and unstressed pronominals occurred in the last clause 95% to 100% of the time. As we shall see, this conservative approach provides an interesting and fruitful model of the data. The specific hypothesis adopted here, with respect to information status, is that given referents are more likely to be null than are activated referents, and that these in turn are more likely to be null than are inferable referents. It is hypothesized that new information is least likely to be null.

Syntactic and semantic factors

The corpus was coded according to whether the object referent had an antecedent somewhere in the discourse and, if so, what grammatical role the antecedent filled (subject of transitive verb, subject of intransitive verb, direct object, or

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indirect object). There is no a priori direction in which we would expect grammatical role of the antecedent to affect the form of a direct object. Hence the hypothesis is a weak one: namely, there will be an effect of some kind.

The corpus was also coded for the semantic type of the verb selecting the object variable (stative or active). There were special codes within these categories for *save* 'know', *gat* 'get, have', *wantem* 'want', and *karem* 'bring, take, get'. The reason for isolating these is that *save* and *gat* frequently occur in routinized constructions, such as those in (4) and (5).

(4) Mi no save ∅
1s NEG know
'I don't know.'

(5) Miriam: I no gat branj long Vila.
M: AGR NEG have branch PREP Vila
Lidia: Si, i gat ∅
L: yes AGR have ∅
'M: [I don't think] there's a branch in Vila.
L: Sure there is.'

As example (5) shows, *gat* is used in existentials and presentatives in Bislama, and, as we shall see, it turns out that it is appropriate to classify *gat* as a stative. The grammaticalization path between GET and HAVE (possessive) is well trodden (Heine & Kuteva, 2002:148), as is the path between HAVE (possessive) and EXIST (Heine & Kuteva, 2002:241–242).

Since it is possible that such constructions might be so regularized that they would be subject to their own distributional constraints (favoring a null object), the most cautious step was to code them separately so that, if necessary, they could later be separated out from other statives. For similar reasons, *karem* and *wantem* were coded separately as well. As the coding progressed, it became clear that these verbs were patterning in restricted ways. As a result, all previously coded tokens of these verbs were recoded in a way that allowed them to be separated out later from the other actives or statives (respectively).

Another factor in this category was the type of the object referent. Crowley (1990:241, 326–327) suggested that use of a pronominal anaphor in the positions of subject, object, and object of a preposition is more likely if the referent is animate, and that inanimate referents are more likely to be phonetically null. Animacy is certainly marked in various overt ways in Bislama's substrate languages,[2] so that it would be hardly surprising to find that this semantic feature has transferred in some way into Bislama. Cross-linguistically, it also seems that it is not unusual for animacy to play a role in determining the distribution of null objects. Camacho, Paredes, and Sanchez (1997) reported on Southern Quechua speakers' acquisition of null objects in Spanish. The norm for Quechua is to mark human referents overtly; this led these learners to make the wrong generalization for Spanish. Similarly, it has been reported that in Brazilian Portuguese null objects are distributed differently depending on the animacy of the referent. Bianchi

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and Figueiredo Silva (1993), cited in Dimitriadis (1994), claimed that animate objects are sensitive to syntactic island effects, whereas inanimate objects are not. Consequently, each direct object was coded for whether its referent was speaker, hearer, third person (human), other animate, inanimate, an abstract noun (e.g., 'report', 'news', 'shame'), as in (6), or an event or proposition, as in (7).

(6) Be mi mi wantem mekem sem long yutufala
but 1s 1s want make shame PREP 2du
'But I want to make you feel bad/embarrassed.'

(7) Yutufala i luk tufala naoia … {several lines}
2du AGR look 3du now
No, no, no, no mitufala i no wantem ∅
NEG (4×) 1du AGR NEG want ∅
'You can see them now … No, no, no, no, we don't want [to see them now].

Another reason why coding first and second person referents separately from third person referents is potentially useful is that it allows us to test whether the transitive suffix itself has any role to play in determining what form the object takes. Most transitive verbs in Bislama have a transitive suffix *-em* (or its phonetically conditioned allomorphs, *-im* or *-um*). Some exceptions to this are high frequency verbs, such as *kakae* 'eat', *dring* 'drink' (though *dringim* is attested), *save* 'know', *gat* 'have', and *se* 'say'.[3] The suffix derives from the English third person pronouns 'him' and/or 'them', which in their unstressed forms are realized as /əm/. It is possible that this historical derivation continues to exert an effect on the relationship between the verb and its complement. If the transitive suffix remains able to identify third person (singular or plural), then this would converge with the animacy hierarchy just mentioned. In particular, we would expect more null forms when the object refers to a third person and more overt objects when it refers to the speaker and/or hearer. It is quite possible that such historical factors might be relevant. For instance, Labov (1989) demonstrated that synchronic variation between *-in* and *-ing* may reflect historical changes that are thoroughly opaque to speakers; in Bislama itself, the historical derivation of the subject–verb agreement marker *i* from English 'he' appears to continue to identify a third person subject in some opaque way.

Finally, each object was coded for whether it referred to something that could be considered an alienable or inalienable possession. Most of the substrate languages of Vanuatu mark possession differently depending on whether the object possessed is inalienably possessed or not. The distinction is common throughout Austronesian (for reconstructions of suffixes marking inalienable possession in Proto-Oceanic, see Lichtenberk, 1985; Pawley, 1973).[4] There is variation across the language family in what things are considered to be inalienably possessed. Generally, one is talking about a part-to-whole relationship and core kinship terms. Thus, in this corpus, body parts, the branches of a tree, and terms for kinship relations into which one is born (e.g., 'child' and 'uncle' but not 'spouse') were coded as inalienably possessed.[5] Also coded as inalienable were thoughts and

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feelings. Examples of inalienable and alienable possessions are given in (8) and (9), respectively.

(8) Afta mitufala i lukaotem hem
after 1du AGR look.out 3s
'And we were looking for him [my son].'

(9) Hem i no gat trak
3s AGR NEG have car
'He doesn't have a car.'

In the substrate languages in Vanuatu, the difference manifests itself in how closely bound the possessor and possessed are linguistically. Languages realize 'my son' as 'son-me' (with an affix) and 'my radio' as 'my radio' (with a free possessive determiner).

Formal factors

In addition to discourse factors, I also coded for the form of an object's antecedent (where there was one), distinguishing between overt and null forms. Where the antecedent was overt, I made a distinction between pronouns and other NPs. Where the antecedent was null, I made a distinction between tokens where the null antecedent was the only null element in a clause and tokens where the null antecedent was one of several null elements in a clause. The assumption was that, if an antecedent was the only null element in its clause, it would be (in some sense) more salient than if it were one of several null arguments. This might be seen as another measure for capturing the difference in activation level mentioned earlier.

In general, the hypothesis is that objects are more likely to be null, the more reduced their antecedent is. That is, direct objects with full NP antecedents are more likely to be overt than those with pronominal antecedents, and, in turn, these are more likely to be overt than objects whose antecedent is some null argument in a clause. Finally, an object is most likely to be phonetically null if its antecedent is the only null element in the clause the last time it is mentioned.

METHOD

All tokens of nominal direct objects were extracted from the corpus and coded for the factors just discussed. The corpus consisted of approximately 13,120 words; a total of 757 direct objects were found, of which 191 were null (25%). There were 8 women and 9 men recorded; the mean age of the women was 30, and the mean age of the men was 40.

The tokens were initially extracted using GOLDSEARCH (Boas et al., 1996–2000), a program designed to perform iterative searches on text files and to link the results of a search with a file containing information about the speakers. One of the outputs of a search using GOLDSEARCH is a file of tokens that can be directly imported into GOLDVARB 2.0. In addition to linking search results with informa-

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tion related to speaker demographics, GOLDSEARCH allows more context-specific coding to be imported into a GOLDVARB-ready file.[6] The search results were analyzed using GOLDVARB 2.0 for the Macintosh (Sankoff et al., 1992), seeking the best fit with the most economical grouping of factors.

Since GOLDVARB only allows for a binary specification of the dependent variable, the first step was to determine how best to collapse the three-way distinction among null forms, pronominal forms, and full NPs. In theory, pronouns might pattern with null forms (if the most salient distinction in the language is between anaphoric and nonanaphoric elements), or they might pattern with full NPs (if the most salient distinction is between null and overt forms of a referent). In fact, initial runs showed that pronoun objects behave more like overt NPs than they do like phonetically null objects: the log likelihood associated with grouping pronouns and full NPs was −275.129, whereas the log likelihood associated with grouping pronouns and null objects was −300.223. In general, a lower log likelihood indicates a better fit to the data; in this case the difference between the two was statistically significant. I therefore concluded that grouping pronouns and full NPs would provide a significantly better model of the data than grouping pronouns and null form.

Next, various factors within groups were eliminated or combined with each other one by one, or factors across groups were combined, in order to find the best fit to the data using the most economical number of factors. In each case, changes in the goodness of fit were evaluated by multiplying the difference between the log likelihoods at the end of consecutive runs by 2 and treating the result as a chi-square value (with degrees of freedom being defined as the difference between the number of factors in consecutive runs).

RESULTS

None of the social factors were found to be significant constraints on the distribution of null and overt direct objects. Sex and age of the speaker were at the borderline of significance. That is, these factors were identified as significant in the step-up phase of a step-up/step-down analysis, but were not identified as significant in the step-down phase. Each factor group was eliminated individually from the analysis with no significant worsening of log likelihood.

It was possible to collapse the linguistic factors examined considerably. For instance, it was found that the only important grammatical roles that needed to be differentiated for the objects' antecedents were subject and object and no antecedent. There was no significant worsening of the model's fit to the data when brand-new and inferable referents were collapsed. Interestingly, there was also no worsening of fit when referents given at some previous point in the discourse (but not present in the immediately prior clause/utterance) were combined with new and inferable entities. That is, entities that have been introduced to the discourse but that are no longer activated (given the conservative definition of "activation" used for coding this corpus) are treated by speakers just like brand-new or inferable referents.

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Verb type was reduced to four distinctions: active verbs, stative verbs, *wantem* 'want', and *karem* 'bring, carry, have'. The factor groups for the semantic type of referent and for (in)alienability were retained unchanged.

Thus, the significant factors constraining the alternation between null and overt objects in Bislama are (in descending order of strength): form and grammatical role of the antecedent, semantic type of the referent, (in)alienable possession, and semantic type of the verb.

Form and grammatical role of antecedent

The most economical way of representing the effects of form and grammatical role of an object's antecedent is to combine these categories. First, an overall distinction needs to be made between cases where there is an antecedent and cases where there is no antecedent. Second, where there is an antecedent it is useful to distinguish between objects whose antecedent occurs in the immediately preceding clause and those whose antecedent had been introduced into the discourse before that. The latter type is referred to as ambient antecedents in the following discussion. Third, a distinction must be made between objects whose antecedent in the preceding clause is also a direct object and objects whose antecedent in the preceding clause is a subject. Figure 1 shows the manner in which these factors crosscut each other and their effect on the distribution of null objects.

Two fairly clear priming effects are evident in Figure 1. The first relates to form. If the antecedent of a direct object is null, there is a strong probability that the object under investigation is also realized as null. This is true overall, regardless of whether the antecedent is a null direct object in the immediately preceding clause (10), a null subject in the immediately preceding clause (11), or even an ambient antecedent (12). (In the following examples, for clarity I have marked with ∅ only the null arguments that are relevant to this discussion.)

(10) Go luk ol woman blong holem ∅. Oli holem ∅
Go look PL woman COMP hold ∅ AGR hold ∅
'[She] went to see the woman to lay hands on [her]. They laid hands on [her]'

(11) ∅ i stap laf Afta, tufala i brekemaot ∅
∅ AGR CONT laugh then 3pl.du AGR break.out ∅
'[The baby] is laughing. So then they take [the baby] out'

(12) Hem i stanap, hem i holem ∅
3s AGR stand 3s AGR hold ∅
{Miriam: Hadwok. Be afta?}
Yes. I putum han nomo i holem ∅
yes, AGR put hand only AGR hold ∅
'He stands and he takes [the ball]. {Miriam: Big effort. And then?} Yes. He just sticks out his hand, and takes [it].'

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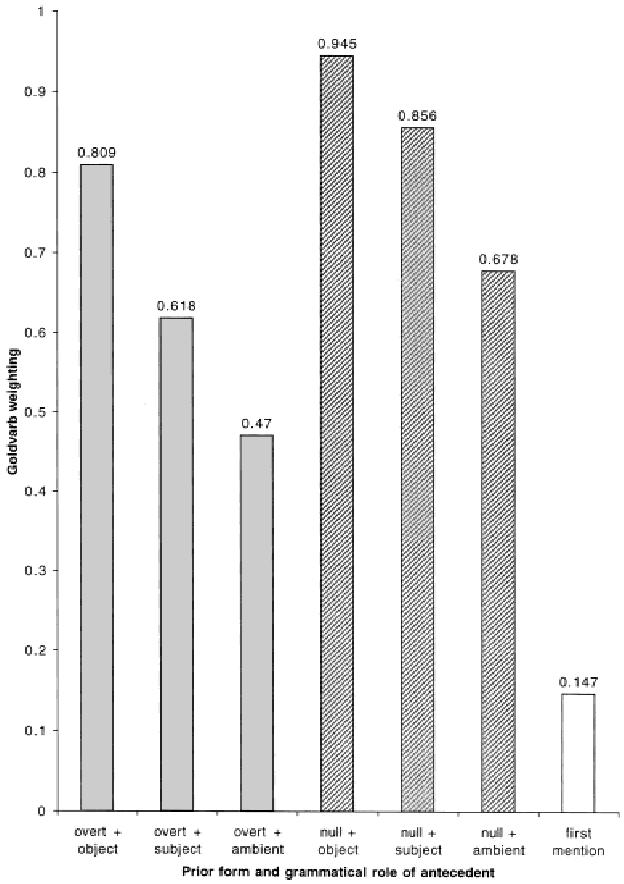


FIGURE 1. Probability of null objects by form and grammatical role of antecedent.

The second effect relates to grammatical role. It is clear that if the antecedent of an object is an object, the current object is very likely to be null. This is shown in the first and fourth bars in Figure 1. That is, objects with null antecedents are most likely to be null, but objects with even an overt object antecedent are also very likely to be null. This is shown in example (13).

(13) Givim sam nandao, Sikal Bae mitrifala i luk ∅
give some *Pometia pinnata* Sikal IRR 1p.trial AGR look ∅
'Give [us] some nandao, Sikal. We want to see [them].'

Unsurprisingly, when an object is first mentioned it is usually realized overtly. Cases where the object was null on first mention are sometimes subject to self-repair or instances of cataphora (where the full referent is introduced in a following clause), as in (14).

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TABLE 1. *Probability of null object by referent's semantic type*

Referent Type	Probability of Null Object
Abstract noun (e.g. 'news', 'feeling')	.350
Third person (animate)	.369
Speaker or hearer	.465
Inanimate	.521
Event or proposition	.935

(14) Mi laf, mi laf. Mi no ivin talem ∅ long Kathy yet … {12 finite clauses}
1s laugh 1s laugh 1s NEG even tell ∅ PREP Kathy yet
Mi se hem i no gat trak.
1s say 3s AGR NEG have car
'I laughed and I laughed. I didn't say [this] to Kathy yet … [speaker leaves room to laugh, comes back, talks to Kathy some more] I said, "He doesn't have a car." '

In sum, Figure 1 shows a clear and favoring effect for continuity of form and of grammatical role reminiscent of the formal priming effects discovered by Cameron (1993) by Spanish.

Semantic type of referent

The direct object referents were coded for what kind of referent they picked out in order to test two hypotheses. The first was that the alternation between phonetically null and overt direct objects might reflect transfer of the animacy hierarchy found in many of Bislama's substrate languages. The second was that the transitive suffix might continue to identify some third person referent, reflecting its historical derivation from English third person pronouns (as the Bislama subject agreement marker does).

Table 1 provides the GOLDVARB weightings for the five types of referent that a direct object might represent. The results for this factor group are somewhat difficult to interpret. The significance of the group overall might be assumed to be due to the strong effect that the last factor exerts. These are all cases where a pronoun or null object refers back to a proposition, but since clausal complements were excluded from the corpus, it is not clear whether these anaphors should have been included as well. There is in fact no significant worsening of fit if the objects referring to events or propositions are excluded ($N = 68$). Naturally, in this group the weightings for all of the other factors go up somewhat, but their order remains the same: abstract nouns = .407, third person animate referents = .436, first and second person referents = .554, and inanimate objects = .583. I include this data on propositional anaphors principally in the interests of full accountability.

The ordering of factors in this group looks like none of the animacy hierarchies most commonly discussed in the literature (e.g., Comrie, 1989:41–42), where a distinction is made between living and nonliving things. Within the class of living things further discriminations may be made between humans and non-

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humans (humans being treated as "more" animate); among humans it is sometimes the case that first and second person are treated as more animate than third. In the Bislama data, abstract nouns and third person pronouns group together in that they are both slightly more likely to occur as overt objects than as null objects, while speaker/hearer and inanimate objects seem to behave more alike. But this would be a typologically odd combination and suggests to me that the effects of some factor other than animacy are being reflected here. It is not possible to collapse the two categories of human referents in the Bislama data without a significant worsening of the log likelihood.

Thus, Bislama speakers seem to take advantage of neither the potential substrate models for grammaticalization of animacy in this domain of the grammar nor the more universal tendencies for animacy to be grammaticalized as a constraint on this variable. Bianchi and Figueiredo Silva (1993), cited in Dimitriadis (1994:165), showed that Brazilian Portuguese has separate constraints on animate and inanimate object drop, and Camacho et al. (1997) reported that Quechua speakers transfer the expectation that human referents will be realized as overt direct objects into a second language.

There is no evidence that the transitive suffix has a functional effect on the distribution of null objects. Because the transitive suffix derives from third person pronoun(s), it was hypothesized that null forms were more likely to occur when the object referent was third person. Keesing (1988:121) claimed that this effect held for Solomon Islands Pijin. However, third person referents in urban Bislama are more likely to be overt than are first or second person referents. This is an interesting reversal of the pattern found with subjects (Meyerhoff, 2000). Subjects are more likely to be null when they are third person (and the subject–verb agreement marking is distinctive and derives from the English pronoun 'he'), whereas first and second person subjects are more likely to be overt.

The pattern with objects more closely resembles the patterning of subject drop observed in other languages (e.g., Hebrew and Finnish). Generally, weak functional motivations are given for this. For example, a common hypothesis is that, because first and second person referents are generally present in the immediate context of the speech act, they are more salient and therefore more easily inferred or tracked in speech (Chafe, 1994; Rohrbacher, 1995; Vainikka & Levy, 1995). Consequently, it is supposed, they may be omitted with greater freedom than third person referents (where the referent may well not be present).

In Bislama, it seems that there in an interesting distinction between the patterning of null subjects and null objects. The interpretation of (and hence distribution of) null subjects depends principally on intrasentential factors (Meyerhoff, 2000), whereas the interpretation and distribution of null objects depends primarily on intersentential factors. If identification via agreement is important, this data suggest greater opacity of the transitive suffix than of the subject agreement morpheme.

Alienable and inalienable possession

Although the coding of this variable was reasonably conservative, we find a clear effect for inalienable possession in the data, as shown in Table 2. Referents that

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TABLE 2. *Probability of null object by type of possession*

Type of Possession	Probability of Null Object
Inalienable	.332
Alienable	.548

are alienable possessions are about equally likely to be realized as overt pronouns, as in (15), or as null objects, as in (16). But referents that might be considered inalienable possessions strongly favor being realized overtly, as in (17), where the speaker is describing her first day in the hospital with her daughter (see also (1b)).

(15) a. Leftemap tebel ya, mi stonem smol woman ya. Ale, mi kikim hem finis
lift table SPEC 1s throw small woman SPEC then 1s kick 3s CMPL
'Pick up the table, and I threw it at that little woman. Then I kicked her.'
b. Hem i se i gat plante fren be plante man long XX hetem hem.
3s AGR say AGR have plenty friend but plenty people PREP XX hate 3s
'She says she has lots of friends, but lots of people in XX hate her.'

(16) Hem i givim mi sam– ol ting olsem mane wetem wan pis kaliko
3s AGR give 1s some– PL thing like money with one piece cloth
Hemia nao. Mi putum ∅ long bokis.
that now 1s put ∅ PREP box
'He gave me some–things like money and a length of cloth. That's how it was. I put [them] in a box.'

(17) Mi swim bebi, mi jenisim hem
1s bathe baby 1s change 3s
'I bathed the baby, I changed her'

The data therefore support the hypothesis that the distinction between alienable and inalienable possession is marked in the variable.

Interestingly, there are potential substrate parallels to this finding. Although the distinction between alienable and inalienable possession is often discussed in the literature as if it were straightforward, in Tamambo (spoken on Malo, an island not far from Santo township) it seems to be best described as a cline. Some things are prototypically inalienable possessions (e.g., family kin), and Jauncey (1997:226) reported that these "must occur" with the suffixed possessor in Tamambo. Likewise, body parts and things intrinsic to oneself (e.g., voice) are overwhelmingly marked as inalienable possessions. At the other extreme are things that can be said to be owned (e.g., brooms, boats, taro, chickens, or pigs), and possession of these is almost always marked with a prenominal modifier. Examples of how possession is marked differently for inalienable and alienable entities are given in what follows. 'Mother' and 'blood' are treated as inalienable pos-

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TABLE 3. *Possessive suffixes and free pronouns in Tamambo (Malo)*

	Possessive Suffixes		Independent Pronouns	
	Sg	Pl	Sg	Pl
1 incl.	-ku	-nda	iau	hinda
1 excl.		-mam		kamam
2	-m	-mim	niho	kamim
3	-na	-ra	nia	nira

sessions in Tamambo, whereas 'broom' and 'pawpaw' are treated as alienable, as shown in (18) through (21).

(18) tina-na
mother-P:3s
'his/her mother'

(19) dae-ra
blood-P:3pl
'their blood'

(20) no-na itevi
CL-3s broom
'his/her broom'

(21) bula-ra sowa
CL-3pl pawpaw
'their pawpaw'

Inalienably possessed nouns occur with a possessive suffix, which encodes the person and number of the possessor. Alienably possessed nouns occur with a preposed possessive consisting of a classifier morpheme and a possessive morpheme specified for person and number. In Tamambo, it happens that several of the possessive morphemes are fairly transparently related to independent pronouns, as shown in Table 3. However, many Vanuatu languages do not exhibit this degree of transparency.

Semantically in between the referents that are clearly treated as either alienable or inalienable are items like clothes, jewellery, or (parts of) a house. These occur variably with the suffixed (inalienable) possession marker or the prenominal (alienable) possession marker. Thus, Jauncey (1997:231–234) noted the following.

(22) a. *ruru-na* 'his/her clothes' (whether being worn or otherwise)
b. *no-na ruru* 'his/her clothes'

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TABLE 4. *Probability of null objects by type of governing verb*

Type of Governing Verb	Probability of Null Object
wantem 'want'	.804
Statives (including *save* 'know', *gat* 'have')	.618
Active verb	.485
karem 'bring, take, have'	.144

(23) a. *vanua-na* 'his/her house'
b. *no-na vanua* 'his/her house'

(24) a. *stori-ku* 'my story' (about me)
b. *no-ku stori* 'my story' (that I told)

In (24), the formal difference in possessive marking reflects a difference concerning the semantic relationship between the possessor and the head noun, but in (22) and (23), there is no such difference. Jauncey noted that variability, as in (22) and (23), seems to be most marked in younger speakers' Tamambo and suggested that younger speakers' performance reflects their participation in a panregional shift away from the use of suffixed inalienable forms (1997:233).

Since some of the prototypical inalienable referents are kinship terms and since these are necessarily human, Table 2 shows a proper subset of the data in Table 1. It is possible, therefore, that previous observations about the salience of animacy in Bislama have correctly identified humanness a relevant factor, but have overgeneralized from this. Only some humans are relevant as constraints on the form of direct objects. As we shall see, some interesting implications follow from this notion.

Semantic type of verb

Table 4 shows the effect of the semantic type of the verb on the distribution of null and overt objects. *Wantem* 'want' and statives *gat* and *save* favor a null object, whereas active verbs are very close to being neutral. Finally, *karem*, which generally means 'bring, take, carry', but can function as a means of expressing possession as an alternative to *gat* (the default form for 'have'), strongly favors an overt object.

(25) Yu no lukum sel mane long ples ya? Maet i gat ∅ long musiam
2s NEG look shell money PREP place SPEC maybe AGR have ∅ PREP museum
'Haven't you seen shell money here? They might have some in the museum.'

(26) From wanem nao bae mi no save karem kosinfi?
because what now IRR 1s NEG ABIL take/have caution.fee
'So why can't I have my deposit?'

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IMPLICATIONS: TRANSFORMATION UNDER TRANSFER

Two major findings emerge from this investigation. The first concerns the fundamental constraints on whether direct objects are overt in Bislama. These converge in suggestive ways with constraints on the forms of subjects. The second concerns the relationship between the grammar of Bislama and the grammars of its substrate languages. This has interesting implications for how we theorize the outcomes of language contact and, more generally, for theories of the modularity of grammar.

We have seen that the principal constraints on the phonetic realization of objects in Bislama are the priming by form and grammatical role of the referent's antecedent. It was observed that continuity of form and continuity of grammatical role both favor the direct object in any given clause being realized as a null anaphor, as shown in Figure 1. In other words, the factors that constrain the distribution of null objects are, to a large extent, similar to the factors that constrain the distribution of null subjects in Bislama.

The fact that intersentential and discourse factors play a significant role in determining the form of objects in urban Bislama is not entirely surprising. In many languages, discourse constraints exert a much stronger effect on the distribution of phonetically null objects than they do on subjects, which are often more strongly constrained by grammatical or intrasentential factors. It is not entirely clear why this difference should hold, as it does in Bislama. It is worth noting, though, that object agreement on a verb is cross-linguistically less common than is subject argument (Crowley et al., 1995:327; Givón, 1984:364),[7] and if, as seems to be the case, unique or transparent agreement on the verb makes identification of a null object easier, then this fact might account for the general weakness of intrasentential constraints on null objects. As we have seen, Bislama does have a verbal suffix that might be interpreted as object agreement. But whatever the diachronic status of this suffix, it seems clear that speakers cannot or do not synchronically make use of this suffix as an identifier of a missing argument, as they can with subject agreement in some persons and numbers.

In addition, it was shown that whether a referent can be said to be alienably or inalienably possessed has a significant effect on its likely form. Inalienable possessions favor being realized overtly, whereas there is no clear preference for alienable possessions: that is, we may assume that other factors take over such as the intersentential ones just discussed. This finding is rather surprising and has the potential to make a significant contribution to theoretical models of the development of contact languages in two ways.

First, if, as Jauncey reported, there is indeed a general ongoing drift away from marking inalienable possession in the Oceanic languages, then the increased variation between alienable and inalienable possession she found in Tamambo, as shown in (22) through (24), is reflected in many more languages across the group. If that is the case, the variable but systematic marking of the distinction between alienably and inalienably possessed referents in Bislama seems all the more remarkable. These parallel systems of variability would suggest that there is an

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interaction going on between variables that operates at quite different levels of linguistic structure in quite distinct languages—a phenomenon that, to my knowledge, has not been documented elsewhere. Ideally, we would like to find out to what extent the variation in, say, Tamambo is paralleled in Tamambo speakers' Bislama. Because there are a number of substrate languages represented in the urban sample, such a comparison cannot be made on the basis of the urban sample. In future work on this variable, I intend to extract all and only the native speakers of Tamambo from the urban and village corpora and explore this possibility in some detail.

The second contribution that these findings make to our understanding of language contact lies in what they tell us about the degree to which features and concepts may be transformed in the course of transfer from one language to another. Recent research (e.g., Siegel, 1999, in progress) on creolization has refocused on the commonalities between the structure of new contact languages or creoles in particular and second language acquisition in general. The resurgence of this approach, following attempts by Schumann (1974, 1978) to link the two fields, is perhaps due to the current availability of studies of second language acquisition that are more directly grounded in specific, especially generative, theories of the structure of language. The adoption of principles and parameters characteristic of generative syntax into the study of second language acquisition provides an obvious nexus for the study of variability and change in pidgin/creole languages. Much research on pidgins and creoles has proceeded on the assumption that some kind of universal structural principles for the structure of language—whether a bioprogram as in Bickerton (1981, 1984), Chomsky's universal grammar as in DeGraff (1993, forthcoming) and Déprez (1999), or theories of markedness as in Mufwene (1990)—constrain the options for likely linguistic outcomes of creolization.

The Bislama data presented here shows that language contact has resulted in the transfer of a semantic feature (alienability) from the substrate languages of Vanuatu into Bislama. In principle, the fact of transfer is hardly surprising; we have numerous attestations of a substrate lexical–semantic domain being transferred into a creole's lexical–semantic system in ways that are striking to the speakers of the lexifier language. For example, uses of the Bislama verb *harem* closely parallel uses of the Tangoa (spoken in south Santo) verb /roŋo/ 'to hear, taste, smell, feel either by touch or by emotions' (Camden, 1979:55).[8] What is interesting and a bit unusual is the transformation of domains in which the semantic feature is marked.

As we have seen, alienability is marked morphosyntactically in the substrate languages (usually as a suffix on the possessed noun). We might therefore expect to see the feature marked somehow in the syntax or morphology of Bislama. For instance, the evidence that Sankoff and Mazzie (1991) found for the grammaticalization of (in)alienability in the determiner system in Tok Pisin suggested formal parallels (or a calque) from the substrate to Tok Pisin. They found that there was a preference for inalienable referents to be referred to with an overt possessive even if the possessee seemed to be irrelevant at that point in the narrative. So, in a story about two brothers, both are referred to as *barata bilong en* 'his brother' (literally, 'brother of him').

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(27) Na, **liklik barata bilong en** ia i wari tru, na em i tok strong ....{3 finite clauses}
Orait, **bikpela barata bilong en** tokim **mama bilong en** olosem nau
'And, his little brother was terribly worried, and he shouted.... So, his big brother told his mother as follows then ...' (Sankoff & Mazzie, 1991:15–16)

A close English translation, as in (27), seems to imply the existence or narrative perspective of a third brother, when there are in fact only two. In English the two characters would usually be differentiated as 'the first brother' and 'the second brother'. Sankoff and Mazzie (1991) and Sankoff (1996) argued that the tendency to use a possessive construction when an inalienably possessed noun is mentioned is essentially a transfer of the alienable/inalienable distinction found in the substrate Melanesian languages.

Note that speakers of Tok Pisin seem to transfer both the semantic notion of an alienable/inalienable distinction into the creole's grammar and the formal means of marking that (in)alienability. Formally, then, the grammaticalization of (in)-alienability in Tok Pisin is very different from the grammaticalization of the distinction in Bislama. As we saw in connection with Tamambo, the typical manner in which inalienable possession is marked in Melanesian languages is with a suffix on the noun. Sankoff and Mazzie demonstrated that there is a structural parallel in Tok Pisin; inalienable possession is marked with a postnominal modifier, but in Tok Pisin the postnominal modifier is a prepositional phrase. The difference between Tok Pisin and Bislama is that in Bislama (in)alienability has not transferred into the morphology or the syntax. Instead, the distinction emerges as a highly abstract level: that is, a probabilistic tendency in discourse relations.

A much less abstract picture of (morpho)syntactic transfer emerges from other work on this subject in Pacific pidgins and creoles. For instance, Keesing (1988:240ff.) and Siegel, Sandemann, and Corne (2000) discussed a number of features in the structure of Solomon Islands Pijin and Tayo (a French-lexified creole spoken in New Caledonia) that could be characterized as (morpho)syntactic transfer. The kinds of transfer discussed by Keesing and Siegel et al., however, were fairly straightforward cases of transfer, similar to those documented in detail by Camden (1979) for Tangoa and Bislama.

Siegel et al. considered cases where a semantic feature that is realized in the most important substrate languages is transferred in both content and position into the emergent creole. For instance, a semantic feature of tense/aspect marking that occurs in the substrate as a prefix or auxiliary before the predicate also occurs in a position before the predicate with essentially the same meaning/function in the creole. An analogous phenomenon in Bislama would be the nature and ordering of tense and aspect markers with respect to main verbs. (28) shows the parallel marking of abilative and completive aspect and the parallel placement of the intensifier in relation to the predicate in Tangoa and Bislama (the data—from Camden, 1979:58–59—are slightly simplified here in the interests of clarity).

(28) a. Tangao: na eri cacau.
Bislama: mi save wokbaot.
'I am able to walk.'

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b. Tangao: paloku mo rucu moiso.
Bislama: leg blong mi i gud finis.
'My leg has healed.'
c. Tangao: enia mo vajiaca jea pani mo lo suica.
Bislama: hem i olfala tumas be i strong yet.
'He is very old, but he is still strong.'

As explained in Siegel (1999), the lexifier provides a word or phrase that shares at least some of the semantic features of the target substrate feature, and transfer occurs if the lexifier constituent occupies roughly the same linear position as the substrate feature (Siegel et al., 2000). Where these conditions are met, speakers of the creole can make a simple substitution. That is, lexifier items that successfully transfer are those which bear a clear semantic and word order correspondence to the substrate category/lexemes that speakers are trying to realize. In (28) this is true for *save* (English modals also occur as auxiliaries immediately before the main verb) and perhaps with respect to *finis*, which has some parallels with English *already*, but it is less clear whether the claim holds true for *tumas* because English lacks an analogous intensifying adverb immediately following the main verb.

The important point for this discussion is that, when we consider the marking of (in)alienable possession in Bislama, what is being transferred is something that exists at a much more abstract level in the grammar than lexical items and word order. It is the tendency for a semantic feature to be associated with some overt realization in the clause. DeGraff (forthcoming) suggested that there is perhaps a tendency to fetishize creoles as being less complex than other languages, and the present case study shows, I think, that there is merit to his case; when we look closely, there may be considerably more (synchronic and diachronic) complexity underlying the structure of a creole than is apparent from surface–structure investigations.

In this case, we do not seem to be dealing with a straightforward case of syntactic transfer. Certainly, the mechanisms and features of the process are rather different from those discussed by Keesing and Siegel et al. What we see here involves the transfer of (the semantics of) something that once was syntactic, but the variable has been transformed in the transfer. The fact that transfer with such simultaneous transformation is possible suggests a high degree of interrelatedness of different levels of the grammar. For this reason, I would argue that it is useful to understand the null object variable in Bislama as something more than the simple transfer of a semantic concept—here, (in)alienable possession—between languages. At one level, it is true that that is what it is. But to leave the description at that would be to miss the more significant implication of this variable. The transfer of a morphosyntactic feature from one language into the discourse grammar of another language suggests that the relationship between the interfaces of syntax, semantics, and discourse are seen by speakers as distributive. That is, it is not the case that there are syntax, semantics, and discourse modules operating so autonomously that relations between them are constrained to a uniplex mapping via a single interface. Rather, it seems that speakers exploit a more subtle notion of how aspects of the linguistic system are related to one another.

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TABLE 5. *Realization of relations across linguistic interface levels*

Relation Type	Language L
$\mathcal{R}_x$ = alienable	syntax/semantics
$\mathcal{R}_y$ = discourse-old	discourse/semantics

TABLE 6. *Transfer of relations into different interface levels under language contact*

Relation Type	Language L	Language K
$\mathcal{R}_x$ = alienable	syntax/semantics	discourse/semantics
$\mathcal{R}_y$ = discourse-old	discourse/semantics	discourse/semantics
$\mathcal{R}_z$ = ?	?	syntax/semantics

Suppose that there are a number of features that are realized as relations among different modules in different languages (e.g., syntax and semantics, discourse and semantics, and phonology and syntax). Call these $\mathcal{R}_x$, $\mathcal{R}_y$, $\mathcal{R}_z$ ... Suppose that $\mathcal{R}_x$ is a relation of (in)alienable possession and that, in one language, L, it is realized at the syntax/semantics interface. Suppose that $\mathcal{R}_y$ is a relation of being discourse-old information, and that the interface at which $\mathcal{R}_y$ is realized is discourse/semantics. This could be represented as in Table 5. Suppose, finally, that the speakers of L are acquiring another language, K, which is undergoing rapid and substantial restructuring as its use expands across a range of communicative domains. If this expansion stage is accompanied by a destabilization of existing relations among different levels of the linguistic system, or if this expansion is accompanied by great interspeaker variability in which relations are mapped between different levels, then this may result in speakers of L reassigning relations such as $\mathcal{R}_x$ and $\mathcal{R}_y$, as in Table 6, leaving the syntax/semantics interface to realize (unspecified) other relation(s). Table 6 is intended to represent transformation under transfer, a language contact phenomenon that I believe merits further study because of the important contributions it promises to make to linguistic theory.

I suggest that this way of conceptualizing the possible outcomes of language contact captures the complexities of the null object variable in urban Bislama more accurately than a model of surface level correspondence between lexical and semantic constituents. It perhaps also provides a useful framework for defining the fullest range of possible outcomes of language contact in general.

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THE SIGNIFICANCE OF (IN)ALIENABILITY

The preceding discussion leaves an important question unanswered: why (in)alienability? Of all the features associated with substrate grammars, why did speakers of Bislama end up striving to realize the alienable–inalienable distinction in the emergent grammar of Bislama? A possible answer lies in a broader consideration of the cultural significance of possession in Melanesia. Faraclas (2002) pointed out that in Melanesia one's relationships with others—and therefore, one's own identity—are defined through series of exchanges and transfers of possessions. In this, he very much followed the spirit of Strathern's (1988) work, which painstakingly showed how gender identities in Melanesia emerge through relationships established with others. Faraclas noted that, in this social context, a distinction between things that are alienable and inalienable is not simply a matter of substrate grammar and not merely a part of a substrate system of cognitive organization. Rather, it is intrinsic to one's being: a person only is who they are because of their exchanges with others. Thus, the grammaticalization of possession might better be seen as a grammaticalization of self.

Faraclas also noted that this allows us to explain why Bislama and the related languages Tok Pisin and Solomon Islands Pijin have grammaticalized a distinction between inclusive and exclusive in their pronominal systems. All three languages distinguish between 'we-inclusive' (referring to the speaker and addressee, and potentially others) and 'we-exclusive' (referring to the speaker and others, but not the addressee). Again, this feature is widely found in substrate languages of the region; so a source has been found, but a motivation for the transfer of this distinction into the grammar of the region's creoles has been lacking (Sankoff, 1996:424). However, inclusive pronouns may also be used when the addressee is not a coparticipant in an event or experience (see Meyerhoff, 1998, for Bislama and Lichtenberk, in progress, for Oceanic languages in general). In these cases, the function of the inclusive seems to be to signal shared group identity or desired shared group membership. According to Faraclas, this reflects the cultural importance of defining one's place in the social order and can explain the linguistic resources marshalled into service in order to signal this.

Thus, the major cultural significance of possession as a means of establishing self in Melanesia helps to explain why speakers would create and perpetuate complex and abstract mapping relationships between substrate features and the grammar of an emergent creole. The probabilistic patterns of variation found in the distribution of null objects in Bislama, like the preferential patterns of noun phrase modification in Tok Pisin (Sankoff & Mazzie, 1991), reflect not simply the substrate linguistic resources available to speakers, but more importantly the core cultural values.

NOTES

1. The following abbreviations are used in this article: ABIL ability; AGR subject agreement; CMPL completive aspect; COMP complementizer; CONT continuous; DU dual; HABIT habitual; INT in

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tensifier; IRR irrealis mood; NEG negative; PL or pl plural; PRED predicate; PREP preposition; s singular; SPEC specificity marker; 1 first person; 2 second person; 3 third person.

2. As one reviewer pointed out, animacy is also marked in, say, the pronominal system of English and French.

3. For many speakers in my corpus *se* functions as a lexical verb as well as a complementizer. By contrast, Crowley (1989) found only the complementizer function in central Vanuatu.

4. One reviewer noted that I should not imply that English does not make a distinction with respect to (in)alienable possession. The distinction is reflected in some constraints on coordination, as illustrated by contrasts like *I lost my hand and glove in the accident* versus **I lost my husband and hat in the accident*.

5. Māori, from a different branch of the Austronesian family tree, categorizes spouses as alienable possessions.

6. Documentation for GOLDSEARCH and the program itself are available at http://english-1.unh-edu/nagy/Goldsearch/Goldsearch.html.

7. Richard Cameron (personal communication) suggested that the tendency for verbs in Portuguese and Spanish to agree less often with a postposed subject (i.e., a subject following the verb, like an object) may not be unrelated.

8. In my own experience and fieldwork, *harem* was less likely to be used for smells than for hearing, tastes, and feelings.

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