

A COMPARATIVE AND HISTORICAL STUDY
OF LOCATIVE-BASED PERIPHRASTIC VERBAL FORMS
IN FULA DIALECTS

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This paper is an investigation of periphrastic verbal constructions developed from locative expressions in Fula. First, a comparison of relevant features in the verbal systems of nine Fula dialects is given. Second, the dynamics of the verbal system of Fula is reconstructed through an analysis of these data. It is shown that the most significant and linguistically relevant aspects of the developments were several semantic shifts, some motivated by the appearance of new items in the verbal paradigm which led to changes in the status of existing items. An explanation of the direction and nature of these changes is offered. This explanation requires the notion of a prototype, as developed by Rosch [1973], and thereby argues for its utility in modelling semantic changes. Moreover, implications of these results for aspectual theory are presented.

1. Introduction¹

In recent years there has been a great deal of interest in the functions of constructions developed from locative structures in verbal systems. According to one semantic theory, the localist theory, there is a universal semantic relationship between locatives and certain verbal aspects. Most semantic theories do not mark this relationship as one of equivalence, but rather consider it one of similarity, perhaps metaphorical.

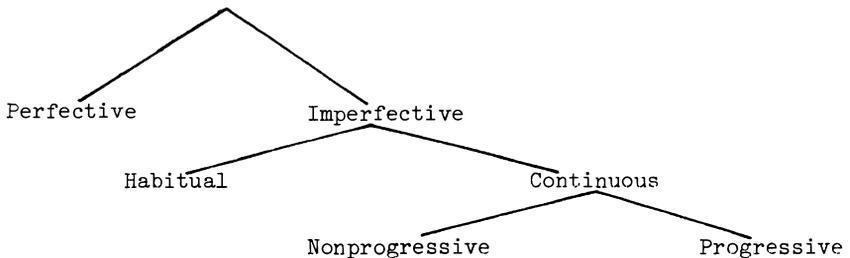
The data bearing on this question must come from natural languages. There have been a number of excellent cross-linguistic studies of

¹I would like to express my gratitude to Mr. Alpha Diallo of Senegal who was the consultant in a UCLA field methods class on Fula. Had it not been for his interest in his language, this paper would never have been written. I would also like to thank Prof. Russell Schuh, who conducted the class and helped me see patterns in a morass of data.

locative constructions in verbal systems [Anderson 1973, Blansitt 1975, Comrie 1976, Welmers 1973], but the studies concentrated on rather superficial features of the languages described. In this paper an in-depth comparative study will be made of locative-based structures in Fula dialects, augmented by a dynamic description of the changes that have ensued in these constructions since their origin.

1.1. Caveat lector. The terminology dealing with tense and aspect is by no means as standardized as it should be. This, unfortunately, can lead to confusion. For example, it is often difficult to determine the precise sense a linguist attributes to a term such as "perfective". Therefore, I have adopted the practice of referring to a form by means of the term used by the author of the source publication. In some instances it was possible to determine that the author assumed a highly nonstandard meaning for a term, e.g. Taylor's use of *continuous* in the sense of "habitual". In these instances a note to this effect is given. Even so, there are other instances in which a term may not be especially perspicuous. Therefore, remarks on the meaning of verbal temporal and aspectual terminology as given by Comrie [1976] and by Akhmanova [1969] will be given for the reader's benefit.

Comrie [1976:25] classified the aspectual oppositions as follows:



He defined these terms in the following manner:

perfective presents the totality of the situation referred to without reference to its internal temporal constituency (p. 3)

habitual describes a situation which is characteristic of an extended period of time, so extended in fact that the situation

referred to is viewed not as an incidental property of the moment but, precisely, as a characteristic feature of a whole period (p. 27-28)

progressive combination of continuous meaning and nonstativity (p. 38)

continuous = *durative* (p. 26)

Additional terms defined by Comrie:

contingent = *temporary* (p. 38)

stative refers to states, i.e. situations that continue as before unless changed (p. 13)

*ao*rist in some languages equivalent to past perfect (p. 12)

perfect refers to a past situation which has present relevance (p. 12)

Akhmanova's definitions are somewhat different:

*ao*rist aspectual-temporal verbal form in the Indo-European languages used for the expression of past action as instantaneous, i.e. without indication of its development or completeness or limits

permansive (1) in the Semitic languages, an aspect that represents the activity as permanent; (2) categorial form of aspect (or its lexical equivalent) representing a given situation as the result of earlier completed action

durative = *progressive* aspect characterizing action as found in the process of development

imperfective aspect representing the activity (process) in its unfolding, i.e. as unbounded, having no limits

perfective aspect representing the activity in its limits, results, etc.

middle voice form of the verb which indicates that the action is concentrated on the subject, leading to changes in its situation; subtypes: reciprocal, reflexive, dynamic middle

Although there is no certainty that an individual author did not have a radically different meaning in mind when he or she used a given term, these definitions should serve to effectively narrow the range of possible interpretations of a given term.

2. The Localist Theory of Aspects

In a number of languages there is an overt similarity if not complete identity between locative constructions and certain verbal expressions,

usually involving progressive aspect and contingent state.² The fact that this similarity is found in languages unrelated to each other in either the genetic or areal sense and with a wide variety of different surface manifestations of locative constructions would seem to imply that there is some natural semantic relationship between locative constructions and these verbal expressions.³ Exactly how natural this relationship is is a matter of dispute. The localist theory advocated by Anderson [1973] and Miller [1972] among others would suggest that both of these construction types should be analyzed as locatives at an underlying level. Others admit a relationship, but maintain there is less than formal identity at underlying levels.

The fundamental conception of the localist theory, of course, is that certain verbal expressions are equivalent at an underlying level to locatives. Since localists appear to be generative semanticists and adherents of the universal base hypothesis, the localist theory would seem to be equivalent to the hypothesis that these verbal constructions are semantically equivalent to certain locative constructions. There is less than unanimity within the localist camp as to the particulars of the equivalence. Exactly which verbal expressions correspond to locative constructions and exactly which locative construction(s) is(are) involved constitute the major controversy. On the first point, Miller [1972] suggests a parallel between being in a state and imperfective aspect. Anderson [1973:5],

²Throughout this paper I will be following the aspectual terminology used by Comrie [1975,1976].

³Terminological difficulties can arise from the fact that a number of terms can be used ambiguously for semantic functions and surface morphological forms. In general there is a great deal of overlap, since a surface morphological form described as a perfective marker generally is perfective in function. In general, I will refer to semantic functions as functions or expressions and surface manifestations as forms (roughly the terminology of Hjelmslev [1969]). Furthermore, when there is variation in the shape of a surface morphological form (depending on different paradigms, for example), "form" will be used to designate the entire surface pattern, however it is best to analyze it formally.

however, suggests a more narrow relationship: "The progressive, for instance, is analyzed as predicating location-in-existence-at-a-certain-time of the event whose predicate is the 'main verb'. Contingent adjectival and predicate nominal sentences are given an analogous interpretation, within a framework where all major lexical items originate as predicates."

The localist theory of aspects seems to be especially compatible with the picture theory of language and the notion of possible worlds as a semantic model, both of which derive directly from Wittgenstein [1922], but certainly the localist theory and these notions are logically independent.

2.1. Evidence bearing on the theory. As mentioned above, there is morphological evidence for the localist theory found in the widespread parallelism in the shapes of the aspectual/locative pairings suggested by Anderson and Miller. Blansitt [1975], Comrie [1976], Anderson [1973], and Welmers [1973] provide examples from scores of languages.

One interesting, if unexpected, feature of the data is that the same verbal function can correspond to different locational constructions. In investigating the manifestations of progressive aspect Blansitt [1975:14] found that both verb phrases with a copula⁴ as an auxiliary and verb phrases with a motional or postural verb as auxiliary are used to represent progressive structure in different languages. Even finer distinctions can be made in the precise nature of the locative expressions. For example, among the languages using prepositions different prepositions may be found.⁵ Moreover, different postural verbs, e.g. 'sit', 'stand', and 'lie', can be used as the auxiliary in periphrastic progressive constructions [Blansitt 1975:25].

⁴Blansitt grouped together overtly locative constructions and more general ones under the heading of copula. One might argue, of course, that all copulas are semantically locative. Many copulas are etymologically locational verbs.

⁵In Irish [Dillon and Cróinín 1961:44], the progressive structures

The facts are both a blessing and a curse for localist theory. They certainly demonstrate that progressives are quite often expressed by locative constructions, yet the lack of uniformity in the locative expressions must be an embarrassment to any theory that assumes a universal, fully-specified base. In such a theory the representation of progressives cannot just be any locative expression. It must be some particular one.

For the localist theory of aspect to hold, the similarities between the verbal forms and locative forms must be more than mere resemblances. They must be underlying equivalents. Comrie [1975:89] has noted that in some cases the parallelism is a result of historical change, as in the English progressive 'they had been fighting' for older 'they had been a(t) fighting'. He further notes that in many languages "the parallelism is one of similarity rather than absolute identity" [Comrie 1975:90].⁶

are formed with the appropriate form of the copula + ag 'at'+ the verbal noun. The verbal noun is regularly formed by suffixing -adh to the verb stem. A direct object with a progressive aspect predicate is in the genitive case.

- (a) tá sé ag dunadh an dorais
be he at shutting the of-door
'he is shutting the door'
- (b) dúnann sé an doras
shuts he the door
'he shuts the door'
- (c) bhíodar ag glanadh na bhfuinneog
they-were at cleaning the of-windows
'they were cleaning the windows'

[Dillon and Cróinín 1961:168]
[Blansitt 1975:19]

Swahili ninasoma 'I am reading' consists of ni 'I', na and the verb stem soma, na being used elsewhere as a preposition meaning 'with' (erda nam 'go with me') [Anderson 1973:17]. In Welsh, the preposition used is yn (usually 'n after a vowel), e.g. y mae hi'n gweithio 'she is working', literally 'is she in work(ing)', y mae hi'n ein taro ni 'she is hitting us', literally 'is she in our hitting us' [Comrie 1976:99].

⁶For an example of this in Welsh see Comrie [1976:100].

Another problem with this morphological evidence is that there are other periphrastic constructions for expressing progressive aspect which are not at all equivalent to location-in-a-situation at all [Blansitt 1975:14].⁷

The situation may be parallel to future tenses. 'Want', 'have', 'go', and 'come' are all frequently used as future auxiliaries, so there must be some natural connection between their meaning and that of future tense, yet it is impossible to say that all futures involve volition, or that all futures involve obligation or that all futures involve a change of state.

⁷In the Mouroum dialect [of Ngambay-Moundou] the motional verb *áo* 'go' is the progressive auxiliary.

- (a) m-áo m-úsá né
'I'm eating (something)' [Vandame 1963:95]

In Tatar [Poppe 1968:101] certain motional and postural verbs (*ki-* 'come'; *bar-* 'walk'; *tor-* 'stand'; *yat-* 'lie down') are used with a preceding *gerund* in progressive constructions:

- (b) uñiř ölgerep kilä
'the crops are ripening'
(c) samolyot očıp kilä
'an airplane is flying'
(d) yaxşıra bara
'he is improving'
(e) eř betep kilä
'the work is ending'

A verb glossed as 'do' is used as auxiliary in progressive constructions in Southern Barasano [Smith 1973:19-20]. The head verb precedes the auxiliary and the two verbs agree in gender:

- (f) bagu yami
'he's eating' (eat-masc. doing-he)
(g) bago yamo
'she's eating' (eat-fem. doing-she)
(h) yigu yimi
'he is saying'
(i) isigo yama
'she's giving'
(j) wacu yami
'he's leaving' (all from Blansitt [1975:28-9])

There are two remaining difficulties with the morphological support for the localist hypothesis. First, locative constructions have wider functions in some languages than in others (imperfective vs. progressive and contingent state). Hence, it is problematical what the correct semantic equivalence is. Second, in many languages the locative constructions involve verbal nouns, while in other languages participles are involved, frequently without any preposition or other overt marker of location type. Anderson [1973:19-25] attempts to analyze all participles as nominal forms. It is questionable how successful this attempt is. Certainly a locative construction with a verbal noun seems easier to interpret literally than one with some sort of participle.

There is some syntactic support for the localist theory of verbal aspect. Many languages have an overtly locative structure that seems to paraphrase the progressive, as in English and French. *je suis en train de manger* 'I am in the process of eating'. Miller [1972] provides a number of syntactic parallels between adjectives, imperfective verbs, and locative expressions in Russian. For example, a number of predicate adjectives seem equivalent to a locative expression using a noun.

- (1) general otčajannyj
'the general is desperate'
- (2) general v otčajanii
'the general is in despair'
- (3) general v zdanii
'the general is in the building' [Miller 1972:224]

As in the examples above, a possible refutation would be that these examples show resemblances, but not necessarily equivalence.

In summary, there is ample evidence that there must be some natural connection between locative constructions and certain verbal expressions such as contingent states and progressives (or perhaps better, imperfectives), but the nature of the connection is in dis-

pute. Also, a number of fine details are controversial: Which is more basically locative--the progressive or the imperfective? Which locative expression more properly corresponds to this form? Do these relationships have more of an etymological or underlying basis in those languages in which they can be justified? Moreover, there are some questions ignored by the general statement of the localist theory: Is it possible for two different locative constructions to be used contrastively within the verbal paradigm of a language? If so, are the functions of each in any sense predictable? Fula data should prove helpful in answering some of these questions.

3. The Fula Speech Area

Fula, a member of the Northern subdivision of the West Atlantic branch of the Niger-Kordofanian languages [Sapir 1971], is perhaps the most widely dispersed indigenous language in sub-Saharan Africa, due to massive migrations, with significant concentrations of speakers stretching from Senegal in the west to Cameroon in the east, a distance of over 3000 miles. This widespread representation of speakers is probably primarily responsible for the availability of detailed analyses of various Fula dialects. First, European investigators were intrigued by a people they viewed as "vigorous", and often attributed special features of "vigorosity" to their language. Second, the sheer size of the Fula speaking population attracted attention. Third, significant concentrations of Fulaphones in different colonial domains enhanced the possibility of multiple European grammars, since each colonial authority could independently authorize a study. Whatever the motivation of the authors, a comparative dialectology is more feasible for Fula than for virtually any other language of sub-Saharan Africa.

This paper is based on analyses of most of the major Fula dialects, here listed in roughly a west-east order with sources used included:

Senegal

Toucouleur--UCLA field methods notes

Fouta Toro--Giraudon [1894], Gaden [1912-14],
Labouret [1952]

Gambia--Swift and Tambudu [1965]

Fouta Djallon (Guinea)--Arensдорff [1913], Reichardt [1876]
(Masina (Mali)--one citation from Arnott [1970])

Sokoto (NW Nigeria)--Krause [1884], Westermann [1909]

Gombe (central Nigeria)--Arnott [1970]

Dageeja (now northern Cameroon; the group recently migrated
from the Bornu area of NW Nigeria)--Labatut [1973]

Adamawa (Nigeria and Cameroon)--Taylor [1953], Lacroix [1963],
Stennis [1967]

Unfortunately, these sources differ enormously in reliability and comprehensiveness. Some of the earliest studies are highly inadequate. Giraudon dismissed some as "buffoneries". As an example, most of the early studies ignored the distinction between normal voiced stops and laryngealized stops, e.g. *d* vs. *d̥*, really [d̥]. Another difficulty is the individual differences in the description both in phonetic/phonological transcription and in the descriptive grammatical terms used. In general, I have followed the procedure of using an author's own description, augmented by an explanation where his usage is confusing or aberrant.

4. Fula Long Form Pronouns as a Reflex of Locative Constructions

Within Fula dialects there are two sets of non-emphatic pronouns which are used depending on the type of verbal expression⁸ in the sentence (the details differ from dialect to dialect and will be discussed below). In this section I will show that both sets have their historical origin in locative constructions. The first set, short forms, is given in Appendix I. The second set, long forms, is somewhat more complicated. In the western dialects

⁸Unless there is a statement to the contrary, all discussions deal only with active affirmative constructions.

there is one set of long forms, while two contrastive sets are found in the eastern dialects. A complete listing is found in Appendix II.

A major difference between western and eastern dialects with respect to the long forms is that the single set found in the west is the result of a suppletion of the two sets found in the east [Lacroix 1963:47, Arnott 1970:195]. For example, compare:

(4) Senegal (West)	Gombe (East)
mid $\dot{\text{o}}$	mid $\dot{\text{o}}\text{n}$ (set A)
hid $\dot{\text{a}}$	'e'a (setB)
himo	'emo (set B)
med $\dot{\text{e}}\text{n}$	mind $\dot{\text{o}}\text{n}$ (set A)
hid $\dot{\text{e}}\text{n}$	'e'en (set B)
hid $\dot{\text{o}}\text{n}$	'e'on (set B)
hi $\dot{\text{b}}\text{e}$	'e $\dot{\text{b}}\text{e}$ (set B)

A cursory glance at Appendices I and II suffices to show that long form and short form pronouns are related phonologically. The relationship is most transparent in the three easternmost dialects, where the relationship is:

(5) Form (A): short form pronoun + $\dot{\text{d}}\text{o}(\text{n})$

(6) Form (B): e + short form pronoun⁹

Presumably the more opaque forms in the western dialects resulted largely from phonological assimilations and perhaps paradigmatic analogy. The exact description of these developments awaits a comprehensive comparative phonology of the dialects.

The non-pronominal elements in (5) and (6) are phonologically similar to locative elements: $\dot{\text{d}}\text{o}$ means 'here', $\dot{\text{d}}\text{o}\text{n}$ 'there' in Sengalese Fula; ?e , he , $\dot{\text{d}}\text{o}$ (the form varies depending on the dialect) is a preposition meaning 'in, in the vicinity of'. Moreover, $\dot{\text{d}}\text{o}\text{n}$ is quite frequently used in locative constructions.

⁹For the o/mo alternation, see below.

- (7) deftere don 'there is a book'
 (8) o don nder gelle jooni 'he is in the town now'

[Arnott 1970:32]

A number of authors have noted the similarity between (5) and (6) and locative constructions.¹⁰ Arnott has noted that that parallelism

¹⁰Some sample analyses:

"The effect of this long form of the personal pronouns is to make an equational or situation sentence. A more literal translation of [mido laaroya gaynaakoqam 'I'm looking for my shepherd'] would be 'I'm in the (as yet incomplete) state of going to look for my shepherd'. In this translation the parenthetic phrase 'as yet incomplete' refers to the fact that the imperfective verb form indicates action not yet complete." [Swift and Tambudu 1965:41]

A. Chataigner: "Le Prof. Lacroix, parallèlement au rapprochement qu'il a fait entre l'élément -Do suffixé aux sujets (?o-Do wara, debbo-Do wara) et le monème libre Do, à sens de proximité spatiale: 'ici', serait-il prêt à accepter un rapprochement semblable entre l'élément ?e/he affixé aux sujets (?e-mo wari, gorko-?e-wari) et le monème libre au'on trouve sous les formes ?e et he/hen, dont il a donné un exemple (?e kuro) et dont la signification général paraît être celle de co-localisation ou de countenance."

J. Lacroix: "Nous inclinons à penser qu'un rapprochement peut être fait entre l'élément ?e/he et le monème fonctionnel phonématiquement identique à valuer associative et/ou instrumentale, rapprochement que suggère par ailleurs l'existence d'énoncés du type:

- (a) shehu ?e sifaawa
'le shaikh est (ou était) à Sifaawa'
 (b) Don sifaawa
(same translation)

où les deux monèmes Do(n) et ?e/he ont une valuer (et ici un sens) identiques. Mais il convient aussi de remarquer que le parallélisme entre ces deux unités n'est pas total et que leur comportement syntagmatique dans un complexe verbal où figure un pronom sujet n'est pas identique:

- (c) ?e mi jooDi
 (d) mi Don jooDi [Lacroix 1963:51]

"In Bantu wird das Verbum durch angehängtes a partizipial, und auch das Ful-Präsens ist wahrscheinlich als Partizip-Form aufzufassen: mido = 'ich bin'" [Westermann 1909:225].

is not complete.¹¹ This would seem to imply that the derivation of long form pronouns (A) from a locative construction is easier to justify diachronically than synchronically. The pattern is quite reminiscent of the Welsh example mentioned in footnote 6. It is, of course, not unusual for words and phrases used in periphrastic verbal constructions to differ phonologically (especially in terms of suprasegmentals) from the forms from which they are derived. Consider:

- (9) I'm gonna go.
 (10) *I'm gonna Boston.

The divergence in form is even stronger for long form pronouns (B). A major problem is the form of the pronoun occurring after ?e/he/hi . We would expect short form pronouns:

- (11) e+mi
 e+a
 e+o
 e+min
 e+en
 e+on
 e+be

but what is found in the form of the pronoun occurring after ?e/he/hi is

(12)	Senegal (West)	Gombe (East)
	n.a.	mi
	da	?a
	mo	mo

¹¹"This don (locative) may be distinguished from the don segment which is part of the subject element in the Continuous and Stative tense by the fact that the latter is pronounced on a level pitch (at least by my informants), whereas the stabilizing element don is marked by a falling pitch, as is usual with words having CVC structure." [Arnott 1970:32]

(12) cont.

n.a.	min
den	en
don	on
be	be

Another problem is that ?e/he , when used as a preposition, require object pronouns:

(13)	Senegal	Gombe
	lam	yam
	le	ma
	me	mo
	men	men
	?en	?en
	?on	?on
	be	be

[Arnott 1970:212]

With the exception of mo , this list is even more divergent from the required forms.

A more promising parallel locative construction involves another structure witnessed in the Gombe dialect involving headless relative adverbial constructions¹² [Arnott 1970:317]. ?e 'where' can introduce these clauses. For some reason Arnott cites no example with ?e , but they are presumably analogous to those with to which also means 'where'.

¹²Another promising parallel construction found in Gombe involves clause-initial hiin 'here you are, here is', used in proferring something:

(a) hiin nde
'here it (e.g. book) is' [Arnott 1970:32-33]

Arnott states that the pronouns used in this construction are object pronouns, but all of his cited examples are ambiguous between subject and object forms.

(14) to Bello yahi, walaa na?i

'where Bello has gone, there are no cows'

This construction is a more likely source construction for Form B pronouns since ?e is followed by subject pronouns.

There still remains the problem of explaining the exact form of the pronoun following ?e . Two different possibilities come to mind. The first is purely phonological. The greater phonological assimilation in the western dialects in long form subject pronouns probably indicates that the boundary between ?e/he/hi and the following pronoun is of a weaker degree than is found in eastern dialects.¹³ In fact, it is quite possible that there is no boundary at all in synchronic western forms, i.e. the forms have been analyzed as monomorphemic. In those situations in which a subject pronoun beginning with a vowel (actually ?V in isolation) follows a verbal root ending in a vowel (this occurs in certain cases involving so-called "relative" tenses¹⁴), the subject pronouns have the form $\text{d}\hat{\text{V}}$ -- [Arnott 1970:194].¹⁵ Thus, the d forms in the west may be a reflex of this process after boundary weakening. Mo is sometimes used as a subject pronoun. It is the regular form in Dageeja. In Gombe [Arnott 1970:193] mo is occasionally used, especially after words ending in ?e or ey . Hence mo , too, in Form B could be phonological in origin.

A second possible explanation involves the fact that headless relative clauses require verbal forms in "relative" tenses. This in itself might motivate the similarity with the form of pronouns occurring in relative constructions.¹⁶

¹³For a discussion of boundaries in phonology, see Stanley [1973].

¹⁴See Arnott [1970] for a discussion of relative tenses.

¹⁵The situation is more complicated in that an inserted vowel may trigger this rule.

¹⁶ Mo can be used as a subject pronoun only in certain relative constructions in Toucouleur.

The last remaining problem with the analysis of (5) and (6) as reflexes of locative constructions is that the following verbal form should be non-finite. Three different morphological verbal forms occur in this construction in the various dialects, those with desinences -a/-o/-e; -i/-ii /-aa; -(u)de/-aade/-eede (active, middle, passive).¹⁷ -(u)de/-aade/-eede is unambiguously non-finite, as it is also the infinitive in the dialects where it is used in periphrastic verbal constructions. The other two forms are the only apparently finite verbal forms that can be used in Gombe without a subject element:

(15) ndaa mo ton joodii
'there he is sitting over there'

(16) ndaa mo ton wara
'there he comes' (lit. there he is yonder coming)

[Arnott 1970:243]

Presumably, this means that these forms can be used as participles. Thus, they, too, are at least ambiguously non-finite.

Therefore, it appears that (5) and (6) are indeed the reflexes of a locative construction.

5. Long Form Pronouns in Modern Fula

The function of verbal constructions involving long form subject pronouns and their diachronic development prove to be more interesting than the mere fact that they are ultimately locative constructions in origin. Dialect differences greatly complicate the problem of giving a succinct description of modern Fula. Perhaps foremost among these differences is the fact that the same¹⁸ verbal form can bear different

¹⁷The details will be given in the following section.

¹⁸Here, "same" really means equivalent, cognate. Various phonological changes have caused divergences in the actual shape of morphemes. Here, as elsewhere, form refers to the entire pattern for all voices and persons.

functions in different dialects. This, of course, complicates both a reconstruction of the verbal system and a clear presentation of contemporary Fula patterns. Another complicating factor is that while in some dialects the verbal forms that require long form subject pronouns and those that require short form subject pronouns are distinct, in other dialects there may be considerable overlapping between these sets, i.e. a given verbal form bears different functions depending on the type of subject elements used. Therefore, to present a clearer picture of contemporary Fula, verbal forms that can occur with long form subject pronouns and their semantic function will be described separately.

5.1. Verbal forms that can occur with long form pronouns. In this section desinences will be viewed from a purely phonological point of view. The reason for this, as mentioned above, is that the same phonological forms may bear different functions in different dialects. It seems reasonable that this divergence occurred after the break up of Common Fula. Hence, a number of phonological desinences bear a different function from the one they once bore. Thus, it proves helpful in historical reconstruction to observe the purely formal patterns, since this formal pattern may well antedate the semantic function associated with these desinences today.

The general pattern is: Long form pronouns are found with the following verbal desinences:¹⁹

- 1) -(u)de/-aade/-eede (infinitive) when used in periphrastic verbal forms (obligatory wherever found)
- 2) -a/-o/-e (obligatory in Senegal, Gambia, Sokoto, and Adamawa; optional in Fouta Djallon and Dageeja)
- 3) -i/-ii/-aa (obligatory in Toucouleur and Gambia; optional in Gambia, Fouta Djallon, and Adamawa; in Fouta Tora and Sokoto this set of desinences co-occurs only with short form pronouns)

First, we will consider verbal forms that require long forms.

¹⁹Verbal forms will be cited in a pan-dialectal form that may not correspond to the actual shapes in a given dialect.

Senegal: Giraudon [1913:26] cites only the form with desinence -a/-o/-e. For Toucouleur long forms are required with three separate verbal forms, those with desinences -a/-o/-e; -i/-ii/-aa;²⁰ -(u)de/-aade/-eede.

Gambia: Long forms are obligatory for verbal forms with the desinence -a/-o/-e [Swift and Tambudu 1965:41].

Fouta Djallon: Reichardt [1876:120] feels that long forms are just emphatic forms which can occur anywhere. This is undoubtedly an error. For Arensdorff [1913:143,152,179] -(u)de/-aade/-eede requires long form pronouns.

Sokoto: Long forms are required for verbal forms with desinence -a/-o/-e and -i/-ii/-aa [Arnott 1970:Appendix 13].

Dageeja: No verbal form requires long form pronouns.

Adamawa: For Stennis [1967:136] long forms are required for verbal forms with the desinence -a/-o/-e.

In many dialects a given verbal form may optionally require long forms. There are no such forms cited in Senegal, Sokoto, Gombe, or Adamawa.

Fouta Djallon: Arensdorff's [1913] data is rather confusing. For the form -a/-o/-e he lists both long and short forms for the active [p. 142], just long forms for the middle [p. 179], and just short forms for the passive [151]. For the form -i/-ii/-aa he lists just long forms for the active [p. 142], just short forms for the passive [p. 153], and no form at all with this desinence for the middle. I will assume that these are gaps only within his data and not within the language, i.e. that -a/-o/-e and -i/-ii/-aa can take either set of pronouns.

Dageeja: Long forms are optionally used with verb forms with desinences -a/-o/-e or -i/-ii/-aa [Labatut 1973:110].

Adamawa: Stennis lists long forms with verbal forms with

²⁰There are forms which could be analyzed as this form + no , which require short forms.

desinence -i [1967:136]. Later an example of this construction involves a middle verb [p. 146]. Perhaps passive forms exist also, but if they do, they are rare.

Summarizing these data, verbal forms with desinence -(u)de/-aade/-eede require long forms in all dialects in which this form is used in periphrastic constructions. Forms with desinence -a/-o/-e require long forms in Senegal, Gambia, Sokoto, Gombe, and Adamawa, and occur optionally with long forms in Fouta Djallon and Dageeja. Forms with desinence -i/-ii/-aa require long forms in Toucouleur and Gombe, may optionally take them in Gambia, Fouta Djallon, Dageeja, and Adamawa, and apparently co-occur only with short forms in Fouta Toro and Sokoto.

5.2. Semantic functions that are expressed with constructions involving long form pronouns. There is a fairly wide discrepancy between dialects. This is to be expected since the original meaning of a desinence may have changed over time and the semantic association with long forms would have become quite opaque. There are, nevertheless, some generalizations that can be made. In all dialects progressives are expressed by a construction that involves long form pronouns. There is a similar general association of stativity with long forms, although the situation is not so clear. Some dialects use long form pronouns in the expression of all statives. In other dialects long form pronouns are used only in the expression of contingent statives. Finally, there are some dialects for which no constructions involving long form pronouns in the expression of statives was reported. This may well have been an oversight on the part of the investigator.

Senegal: In Toucouleur, the progressive, stative, and habitual are expressed through a long form construction.

(17) (stative, verb form -i/-ii/-aa)

himo mawni

'he is big'

- (18) (habitual, verb form -a/-o/-e)
 himo yaha
 'he goes'
- (19) (progressive, verb form -(u)de/-aade/-eede)
 himo yaade
 'he is going'

For Fouta Toro the progressive (*présent absolu* for Giraudon [1894]), verb form -a/-o/-e) is expressed using long forms:

- (20) mido 'ara
 'je viens (en ce moment), je suis en train de venir' [p. 26]

Gambia: Swift and Tambudu [1965] progressives and contingent statives are expressed through a long form construction:

- (21) (progressive, verb form -a/-o/-e)
 mido laaroya gaynakoqam
 'I'm looking for my shepherd' [p. 39]
- (22) (contingent stative, verb form -i/-ii/-aa)
 qomo qari
 'he is come' (he has come and is presumably here as a result)
 qomo hebi
 'he has' (he is in the state of possessing)
 cf. qo hebi
 'he has' (he secured--hence he has generally) [pp. 78-79]

Fouta Djallon: Arensdorff [1913] lists three types which are somewhat difficult to properly separate or interpret.

- (23) (aoriste (some), verb form -a/-o/-e)
 miḍo gnyâma
 'je mange' [p. 142]
- (24) (*présent vague*, verb form -i/-ii/-aa)
 miḍo gnyâmi
 'je mange' [p. 142]

- (25) (*présent absolu ou de simultanéité*, verb form -(u)de/-aade/
-eede)
miḍo gnyâmude
'je suis en train de manger' [p. 143]

Sokoto: Westermann [1909] states that long forms are used to express the present. It isn't clear how inclusive this term is, although it certainly includes the progressive.

- (26) (present, verb form -a/-o/-e)
mi'do lila
'ich schiche' [p. 217]

Gombe:²¹ Long forms are used for continuous (= progressive) and stative forms [Arnott 1970:195].

- (27) (continuous, verb form -a/-o/-e)
oḍon huwa
'he is working' [p. 282]
- (28) (stative, verb form -i/-ii/-aa)
'oḍon joodii
'he is seated' [p. 279]

Dageeja:²² For uses of forms with *ʔe* see 5.3. Forms with *ḍon* are used to express progressives and permansives ("qui implique que le procès est présenté statiquement comme terminé et se maintenant à titre d'état dans ses conséquences ou ses resultats") [Labatut 1973: 105].

- (29) (progressive, verb form -a/-o/-e)
Be Don nana habaru
'ils sont en train d'apprendre la nouvelle'

²¹Note that there are two long form pronoun sets in Gombe.

²²In Dageeja *ḍon* and *ʔe* are contrastive and can even co-occur, see below.

- (30) (permansive, verb form -i/-ii/-aa)
 laami Do gereema Don joDi wuro mum
 'le "lamido" Guéréma est assis dans son campement'

Adamawa:²³ Long forms are used to express the continuative progressive and the continuative durative (= stative) [Stennis 1967:145-46].

- (31) (progressive, verb form -a/-o/-e)
 ɓe ɗo ŋgooka
 'they are crying'

- (32) (stative, verb form -i/-ii/-aa)
 'o ɗo joodi
 'he is sitting'

5.3. Differences between the two long forms. In Adamawa the differences can only be found in rather archaic language forms. In Gombe the two forms are contrastive. In Dageeja the two morphemes ɗon and ?e are independent, and can even co-occur. In all other dialects there is only one merged set of long form pronouns.

In Adamawa, (B) forms (those with ?e) have a habitual function in archaic speech forms. For Taylor [1953:73] they are habitual. He uses the term "continuous" for this usage, but remarks that it is "used in reply to such a question as 'what does he do for a living?'" For Lacroix "elles constituent des paradigmes ayant une valeur particulière marquant l'habitude" [Lacroix 1963:48]. Stennis [1967] cites no forms based on ?e at all.

In Gombe [Arnott 1970] forms based on ɗon are used (a) in main clauses and sentences without dependent clauses

- (33) 'oɗon wondi 'e 'oppel
 'he has (lit. is in company with) a mild fever' [p. 283]

²³See 5.3 for differences between long form.

(b) in clauses after perceptual verbs, e.g. where the fact is emphasized

(34) mi-yi'ii 'odɔn joodi
'I saw that he was sitting down' [p. 284]

(c) in temporal, conditional, and causal clauses

(35) tɔ odɔn daanii, ngar-aa mbi'aa-yam
'if/when he is asleep, come and tell me' [p. 284]

Forms based on ?e are used

(a) with gerundives [Arnott 1970]

(36) 'o-darii 'emo-ronndii tummude
'she stood with a calabash on her head (loaded with a calabash)' [p. 284]

(b) in complements to perceptual verbs where the situation is emphasized

(37) mi yi'ii mo 'emo-joodii/mi yi'ii 'emo joodii
'I saw him sitting down'

(c) after ndaa 'here is'

(38) ndaa mo 'emo-daanii
'here he is asleep' [p. 287]

(d) in the first clause of a serial sentence to describe simultaneous (or immediately preceding) events or situations.

(39) 'emo waansha, sey mo-footi 'e ndottiijo goddo
'as he strolled along, he met an old man' [p. 287]

(e) in co-ordinate sentences when both clauses have this form to indicate simultaneity.

(40) 'emo-darii 'emo-ngaabi
'he was standing agape'

From these data it seems that all forms involving ?e indicate some sort of simultaneity.

In Dageeja "cette particule e implique que le procès a lieu en même temps qu'un autre."²⁴ [Labatut 1973:106] It can be found with

- (41) habitual
mi nani ooldu e halBa
'j'ai entendu le lion rugir'
- (42) projective
ko tummude pamarde heffinaama woyla goDDo e naway
'si la (plus) petite calabasse est placée au nord, quelqu'un sera malade'
- (43) progressive
yiite Don wula mo emo Don voya
'le feu ne cesse de la brûler, tandis qu'il ne cesse de crier'
- (44) narrative
min ~gi'i e mo Borni ~ga pale daneewol
'nous vîmes qu'il portait un boulou blanc'
- (45) permansive
ko ~dottijo maako lili mo kuugal koo jemma e mo ummo mo waDa
'si son mari la charge d'un travail, même si c'est de nuit, pendant qu'elle dort, elle se lève pour le faire'

In both Dageeja and Gombe forms with ?e are used to indicate simultaneity. The constructions are more restricted morphologically in Gombe, where ?e can co-occur only with stative and continuous forms. In Dageeja ?e can co-occur with other verbal expressions,

²⁴Labatut adds after these examples: "Sur les cinq énoncés que nous venons de citer, quatre présentent des cas d'asyndète hypotactique: la dépendance de la proposition qui renferme la particule e résulte d'une implication due à l'aspect concomitif. Cela explique qu'Arnott ait appelé ces "temps": "subordinate stative" et "subordinate continuus", cependant on ne peut considérer l'aspect en e comme dépendant ni faire de la particule e une marque de subordination, car une proposition indépendante peut très bien avoir la valeur temporelle en question qui exprime que le procès a lieu soit pendant que le sujet parle: e mi paama 'je mange', soit en même temps que les autre procès de la séquence et équivant à un "alors": jananbe na e tokkay no mo? 'les étrangers le suivaient-ils alors?'"

such as habituais and projectives which can be used in a clause marking simultaneity. That is, ?e has become a general indicator of simultaneity.

6. The Dynamics of Locative Constructions in Fula

In the preceding sections of this paper various contemporary and nearly contemporary dialects of Fula have been described. Now it is proper to turn our attention toward dynamic aspects of locative-based periphrastic verbal forms in Fula. This involves a reconstruction of the Common Fula patterns, but perhaps even more importantly an explanation for all of the changes witnessed in the dialects required. A dynamic account of linguistic phenomena crucially depends on some suitable model. In general there are no comprehensive models capable of describing the dynamics of an entire language system. Morphological systems involve an association between form (the individual morphs) and content (the meaning and/or function of the morphs). The dynamics of forms (phonological theory) has been elaborated much more greatly than the dynamics of content. Unfortunately, it is questions of content that are more important and baffling in modeling the events undergone by the Fula verbal system. The phonological changes are less striking than the semantic ones. The best model available for modeling semantic dynamics is the semantic field. The version of semantic field theory I will be using in this section is briefly described in Appendix III. This model allows us to account for a number of developments in the Fula verbal system as the result of the pressure of different forms upon each other.

6.1. A reconstruction of the Common Fula locative-based verbal constructions. In Common Fula periphrastic locative constructions were in all probability used to express progressives and probably contingent statives as well. Periphrastic locative constructions with ?e and with ^odon were both used. It is likely that they were not synonymous, but perhaps the difference in meaning was more in the

nature of subtle nuances than clear-cut meaning distinctions. In all dialects progressives are expressed using a long form pronoun construction. Given the cross-linguistic frequency of locative-progressive constructions, there is no reason to doubt this was the case in Common Fula.²⁵ The verbal form used in this expression was in all likelihood the one with desinences *-a/-o/-e*, as this is the most common manifestation in the modern dialects and there is a plausible explanation for other constructions used (to be discussed below).

With regard to statives in some dialects there is no attestation of locative-based constructions, in some dialects long form pronouns are used in the expression of contingent statives, while in other dialects statives are expressed using long form pronouns. Cross-linguistically a greater similarity obtains between locatives and contingent statives than between locatives and statives in general, so a relationship between locatives and contingent statives would be a more natural one.²⁶ Progressives are expressed using periphrastic locatives more frequently than contingent statives, so perhaps the latter became expressed through a locative construction in the dialects, yet the widespread locative-stative relationship in Fula points toward a Common Fula origin. It may be that they would be found in all dialects if a sufficiently large corpus were obtained.

Hence progressives could be expressed in Common Fula through a locative construction involving the verbal form *-a/-o/-e*; and contingent statives through a locative construction involving *-i/-ii/-aa*. It is likely that these verbal forms could occur either in locative constructions or normal finite clauses in Common Fula, similar to the

²⁵ It is possible that these constructions developed independently in a number of dialects, due to some drift-like mechanism. With regard to the parsimony of science this suggestion should be ignored until the facts force it upon us.

²⁶ Also expansion of function in this instance is better attested than contraction.

pattern found in modern Wolof [Diagne 1971:102],²⁷ a closely related language. This is supported by the widespread occurrences of such a pattern in the modern dialects.

Another problem is that locative constructions are better attested in the active voice than in other voices. The active voice is unmarked and more frequent. Thus, it is likely that more distinctions will be found there. This can be due to a greater tendency to innovate in the unmarked/statistically predominant member of a paradigm, to a tendency of these forms to retain older structures longer, or simply to a skewing of the data: the greater frequency of active forms would lead to distinctions being discovered more quickly there.

It is possible that periphrastic constructions with *ʔe* and *ḍon* were equivalent in Common Fula and then became contrastive in the eastern dialects. In general, if two forms have approximately the same meaning within a semantic field, three developments are possible: a) one form may drop out of use; b) their meanings may become more divergent; or c) they may merge to form a suppletive paradigm. All of these developments obtain with *ʔe* and *ḍon* based forms in the Fula dialects. I will show below that the details of these developments can more easily be explained if *ʔe* and *ḍon* based locatives were already non-equivalent in Common Fula. The original distinction seems to be along the lines found in Gombe and Dageeja. *ḍon* is used in unmarked locative constructions, while locative constructions containing *ʔe* are marked as explicitly coterminous, primarily in the temporal sense. The use of *ʔe* with projectives (roughly equivalent to futures) and progressives in Dageeja

²⁷It is quite likely that *-a/-o/-e* were originally verbal extensions not tense markers. Other northern West Atlantic languages have verbal extensions, i.e. derivational affixes, which serve to give verbs a basically passive or middle meaning, without having a full-fledged three way tense distinction. Homburger [1949:123] gives *-oh* as the verbal extension for reflexive and *-el* as the verbal extension for passives in Serer, the language most closely related to Fula.

must be an innovation. No analogy is found in other dialects. Furthermore, these constructions

(46) ?e + pronoun + $\hat{d}on$ + verb stem + -a/-o/-e

(47) e + pronoun + verb stem + -ay/-oto/-ete

can in no wise be analyzed as literal locative constructions, since there is no possibility of $\hat{d}on$ + verb stem + -a/-o/-e or verb stem + -ay/-oto/-ete being either a nominalized verb or a participle.

6.2. Developments in the dialects. The developments in the dialects can best be described through the dynamics of the semantic field and the concept of a focal meaning of a form. The major developments in the dialects are the result of either a spreading of function of unmarked constructions in the field, e.g. the spread of erstwhile progressives into the domain of other imperfectives, or the entry of new items into the field, e.g. the new progressives of Toucouleur, and the subsequent restructuring of the field, often leading to the creation of residues, e.g. the habitual of Toucouleur, which are old forms which largely express the meaning of that given form minus the focal point of the new periphrastic item.

Certain forms have had the tendency to expand their domain in the semantic field. There is no thorough explanation of which morphological markers are the most likely to spread in semantic function, although there does seem to be some connection with markedness, with unmarked members of an opposition likely to invade the territory of marked members. The most unmarked imperfective is the progressive. Therefore, we see progressive forms invading the domain of other imperfectives and perhaps even into perfectives.²⁸ In the vast majority

²⁸"In Irish, the locative expression *ag* + verbal noun is still a true progressive; in Scots Gaelic its range has widened, so that it embraces the whole of Continuous aspect, and at least some instances of Habitual aspect; in some forms of Welsh (in particular, those that have lost the so-called 'Imperfect tense' as a marker of Habitual aspect in the past) the locative construction *yn* + verbal noun is a general marker of Imperfective aspect, and even includes some instances of Perfective aspect." [Comrie 1975:91]

of dialects the form consisting of short form pronouns + verb stem + -a/-o/-e does not exist. The originally progressive long form + verb stem + -a/-o/-e has invaded their domain and pushed them out of the language. There is no evidence that the locative origin of this construction played any role at all in these developments, the unmarked character of the progressive alone suffices.

Similar developments occurred with stative forms. Recall that in those dialects which can have both long and short forms co-occurring with verbs stem + -i/-ii/-aa, the constructions with long forms are glossed as contingent or permansive (= Comrie's [1976:56-58] perfect of result). The contingent of course marks a state as temporary. The permansive describes a state which results from some past event as still in existence. Thus, the very rationale of the permansive is that these states are temporary. Hence, the real difference between contingent statives and permansives is that the latter is marked in that the state depends on some prior event. Thus, one would expect contingent stative forms to have the dynamic tendency to expand to include statives. Moreover, virtually all contingent statives could be interpreted as permansives. Consider

(48) The water is cold.

This could be interpreted as 'the water has become cold, and now remains so'. The only statives that could not be interpreted in this way are those that describe states that have always been in existence, but then, these states could hardly be viewed as contingent. Furthermore, it is unlikely that the investigators obtained such fine nuances in their data. It may well be that the corpus in a given dialect is sufficient to determine whether forms are contingent statives or permansives.

In several Fula dialects all statives are expressed by constructions involving long forms. Again this seems to be the result of the expanded domain of an unmarked member. In some sense all states are contingent. Of course, some are more contingent than others, but there

is no state which cannot be viewed as contingent.

Some of the more interesting semantic field developments involve the restructuring that occurs after a new form invades the set of words participating in the field. There were two different sources for new forms in this portion of the Fula set of verbal markers-- original syntactic constructions that became reinterpreted as periphrastic verbal markers and a single form which an optional sound change split into two contrastive forms.

In a number of languages there are syntactic paraphrases for certain verbal expressions. Usually these paraphrases have a rather narrow function and, hence, serve to make a meaning more precise, as in

(49) I am in the process of eating.

(50) Je suis en train de manger.

These forms are marked forms, not members of the verbal paradigm, because a more general verbal form can be used in their stead.

(51) I am eating.

(52) Je mange.

If for some reason constructions like (51) and (52) cease to bear the functions of (49) and (50), (hence (49) and (50) become obligatory to express a function) then (49) and (50) become members of the verbal paradigm. By virtue of the nature of this type of development, periphrastic verbal forms usually originate with a narrow range of functions, a relatively precise meaning, e.g. progressive rather than imperfective or present.

Analogical sound change can produce a new morphological opposition when a regular form is created where once there was only an irregular one. In most instances the irregular form is lost, but in some instances both remain as in English *latter*, *later*. If both remain a distribution of functional load often takes place in accord with the general dynamics of semantic fields.

When a new form competes for space in the semantic field, restructuring of the fields of existing forms is almost inevitable. In the case of periphrastic verbal forms, these new forms generally have a narrow focal area which quite often belongs to the focal area of an existing construction. As mentioned above, the periphrastic verbal forms only become a part of the paradigm, when the original form ceases to bear this function. The original form is relegated to a residue of its original semantic field. In the case of morphological pairs created by analogical sound change the new form generally adopts the core of the focal area and the old form is relegated to a residue area.

In Toucouleur as well as in other dialects the original progressive form, long form pronouns + verb stem + -a/-e/-o had greatly expanded its function. When the new progressive long form pronoun + infinitive appeared, the old form was relegated to a residue semantic field (in Toucouleur imperfective-progressive = habitual).

The habitual is the Fula example *par excellence* of residue semantic fields. In all dialects except Gombe for which I have evidence of a special form for habituals, it is a form which was superseded in its original function by a new form. The Toucouleur case has already been discussed. In Dageeja the original construction short form pronoun + verb stem + -a/-e/-o has remained with habituals as its residue semantic field [Labatut 1973:92] (again imperfective-progressive habitual). A similar equation obtained in archaic Adamawa. Recall that originally *don* was used in unmarked progressives and statives, *'e* in those marked as emphasizing co-location, especially simultaneity. In Adamawa this relationship apparently became changed to simply unmarked/marked. The original progressive had expanded to cover imperfectives. The end result of the developments is that constructions with *don* were used for unmarked imperfectives (progressives) those with *'e* as marked imperfectives ("ayant une valeur particulièrement marquant l'habitude."). The last example of habitual forms developed from original futures. The term future may be imprecise. Future was

certainly the focal point of this form, although a number of authors mark it as potential or projective to show its wider function.²⁹ In the middle and passive voices the future marker is *-oto/-ete* respectively. In the active there are two forms *-ay* vs. *-ata* or *-at*. *t# → y* is a common sound change³⁰ and the forms *-ata/-at* are analogical preservations. Futures and habituais are closely related in the semantic field. As Swift and Tambudu [1965:134] note, they both indicate a likelihood that something will happen, so both are in some sense predictive.³¹ In different dialects (Gambia [Swift and Tambudu 1965:134] and Fouta Djallon [Arensdorff 1913:143]) the form in *-ata/-at* is used in a future or projective sense.³² In the middle and passive voices there is a neutralization of this distinction.

Lastly, there are some locative constructions which seem to have come into existence as a means of expanding oppositions into greater parts of the verb paradigm. In Dageeja, as discussed above, *?e* has expanded into a general marker of simultaneity, being used in progressive and projective structures. In some western dialects, including Toucouleur, periphrastic locatives as progressive markers can be used in relative clauses:

²⁹With semantic fields in general focal areas are easier to distinguish than boundaries.

³⁰There are obviously a lot of details not given here. It may be that this was an optional sound change. The analogy drawn here is much sharper if *-at/-ata* is viewed as a preservation, not as a new form.

³¹In Gombe *-ay/-oto/-ete* is the form used to express habituais [Arnott 1970:271].

³²In Dageeja there is an opposition *-ay/-ata* in the active voice also. The former is a projective form [Labatut 1973:110], the latter is described as emphatic (which implies "une valeur d'inaccompli, tantôt habituel, tantôt projectiv: c'est une opposition purement formelle, entraînée par l'emphatisation d'un des constituents non-prédicatifs (sujet ou expansion)") [Labatut 1973:94].

(53) gorko wonudo e dYanngude deftere
'man who is reading a book'

wonude is the regular verb of location 'be at'.

7. Conclusion

What are the implications of these Fula data for the localist theory of aspects? In general, the answer would have to be that the theory is too inflexible to account for all these developments. The localist theory is perhaps best qualified to account for syntactic paraphrases of verbal expressions, such as

(54) He is in the process of eating.

Once a construction such as that represented in (54) enters the verbal paradigm, it becomes subject to the dynamics of the semantic field and can become more divergent in function from what the localist theory would predict. Another shortcoming of the localist hypothesis that can be more readily described through the notion of a semantic field is that when a language has two distinct locative paraphrases for verbal expressions, these two paraphrases are apt to diverge in meaning.

Furthermore, it has been shown that semantic fields can profitably be applied to another sphere of the grammar. The notions that have been used to describe such phenomena as color terms are also applicable to verbal paradigms, where a set of forms divides a semantic domain. The meanings of morphological forms have frequently been described in terms of distinctive features. The semantic field model incorporates all of the advantages of distinctive feature analysis within a more flexible framework.

APPENDIX I — Short Form Pronouns¹

<u>Senegal</u> ²	<u>Gambia</u> ³	<u>Fouta Djallon</u> ⁴		
mi	mi	mi (A), miñ (R)		
?a	qu	?a (A), an (R)		
?o	qo	?o		
men	meŋ	meñ (A), meñ (R)		
?en	qen	?en (A)		
?on	qon	?oñ (A), ?oñ (R)		
be	be	be (A), beñ (R)		
<u>Sokoto</u> ⁵	<u>Gombe</u> ⁶	<u>Dageeja</u> ⁷		<u>Adamawa</u> ⁸
mi	mi	mi		mi
a	?a	a		'a
o (W), o (K)	?o	mo		'o
men (W), min (K)	min	min		min
en (W)	?en	el		'en
on	?on	ol		'on
'be (W), be/bě/ben (K)	be	Be		be

Notes:

¹The order is lsg., 2nd sg., animate sg., 1st pl. excl., 1st pl. incl., 2nd pl., animate pl.

²From UCLA field methods notes.

³From Swift and Tambudu [1965:35]. q here represents [ʔ].

⁴From Arensdorff [1913:108] (A) and Reichardt [1876:120] (R). No 1st pl. incl. form appears in R's data, presumably through an oversight. The 3rd pl. b should undoubtedly be marked as b in both A and R.

⁵From Westermann [1909:217] (W) and Krause [1884:45]. Lack of 1st pl. incl. form in K is presumably an oversight.

⁶From Arnott [1970:194].

⁷From Labatut [1973:68]. B and D represent [b] and [d] respectively.

⁸From Stennis [1976:102]. The symbol ' represents [ʔ].

APPENDIX II — Long Form Pronouns

Senegal¹

mído (f.m.), mido (Gi), miDo/moDo/bodo (G & L)
 hída (f.m.), 'ada (Gi), ?aDo/?aDa (G & L)
 himo (f.m.), 'ombo (Gi), ?omo/?o~bo/?imo (G & L)
 meden̄ (f.m.), midomen (Gi), ?emin (G & L)
 híden̄ (f.m.), 'eden (Gi), ?iDen (G & L)
 hídon̄ (f.m.), 'odon (Gi), ?oDon (G & L)
 híbe (f.m.), 'ebe (Gi), ?iBe (G & L)

Gambia²

mído
 qadā
 qomo
 miden̄
 qeden̄
 qodon̄
 bedō

Fouta Djallon³

mído (A), mido (R)
 hída (A), hida (R)
 himo
 meden̄ (R)
 híden̄ (A)
 hídon̄ (A), hidoñ (R)
 híbe

Masina⁴

mído
 'adā
 'omo
 mídon̄
 'eden̄
 'odon̄
 'ebe

Sokoto⁵

mi'do (W), mído (K)
 a'da (W), áda (K)
 omo (W), ómo (K)
 me'don (W), mídon/mídon (K)
 e'don (W)
 o'don (W), ódon (K)
 e'be (W), ébe/ěbě/ébeñ (K)

Gombe⁶ (two forms)

(A)	(B)
mídon	'emi
'adon̄	'e'a
'odon̄	'emo
mindon̄	'emin
'endon̄	'e'en
'ondon̄	'e'on
bedon̄	'ebe

Dageeja⁷ (two forms)

(A)	(B)
short form	e + short form
pronoun + Don	pronoun

Adamawa⁸

(A)	(B)
short form	emi
pronoun + Do(n)	ea
	emo
	emin
	ø
	eon
	eBe

Notes:

¹From UCLA field methods notes (f.m.), Giraudon [1894:8] (Gi), Labouret [1953:39] (L), Gaden [1914] (G) as cited by Lacroix [1963:49]. ~ here represents prenasalized consonant.

²From Swift and Tambudu [1965:41].

³From Arensdorff [1913:107] (A) and Reichardt [1876:56] (R).

⁴From Arnott [1970:195].

⁵From Westermann (1909:217] (W) and Krause [1884:45] (K).

⁶From Arnott [1970:194].

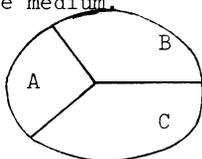
⁷From Labatut [1973:104-105].

⁸From Stennis [1967:145] for A forms and Taylor [1953:73] for B forms. The B forms are now archaic.

The most appropriate model for describing the semantics of verbal forms is the notion of semantic fields developed by Trier [1931, 1973]. Quoting Kutschera [1975:156], "According to Trier certain groups of words form a *word field*. What is characteristic of a word field is (1) that it is correlated with a semantic region (Sinnbezirk), i.e. there is some relationship of meaning among the words in the field, and (2) that the meaning of one word depends on that of the other words in the field and can only be defined together with and in distinction from their meanings." Semantic fields are most commonly used to describe subsets of the lexicon such as color terms, where a set of terms covers a unified semantic domain. Semantic fields can be applied to other domains with these characteristics as well, especially domains that have often been described in terms of sets of oppositions of distinctive features. In fact, the distinctive feature model can be seen as an idealized instance of a semantic field.

In general semantic fields have not been adequately formalized. One question is the geometry of the medium in which the field is located (and encompasses). Should it have co-ordinates or should it be co-ordinate free? A set of distinctive features would be sufficient co-ordinates. The reasons it is not always advisable to rely on distinctive features are (a) they are in practice difficult to determine, (b) there is no compelling reason to believe that distinctive features are in any sense more important than non-distinctive ones, and (c) the set of distinctive features is susceptible to variation over time, i.e. what is redundant at time X may be distinctive at time X + Y, and vice versa.

There are also questions as to the nature of the shape of the field itself. The simplest solution would be for the words to completely partition the medium.



This is generally assumed in most discussions. In the classic example of a semantic field, color terms, Rosch [1973] has shown that the picture is not so simple. The partition model would imply that the boundaries are sharply defined, which Rosch failed to confirm empirically. Rather she suggests that the most salient aspect of words is its focal area within the field. Points in the medium outside of the focal area are expressed by a word with a sufficiently proximal focal area. There can be cases where there are two sufficiently proximal focal areas, in which case either form could be used. Presumably the focal area of a given form is a connected set. If a given form has two separate focal areas, it would most naturally be described as a homophonous form.

As for the dynamics of semantic fields, the fields associated with different forms tend to be repulsive, i.e. words tend to become more distinct in meaning. Special problems arise with the insertion of a new form into the set of those participating in the field. Generally this leads to a restructuring of the field. Also, there are dynamics associated with features such as context which can cause a realignment of the field. Olson [1970] has shown that the choice of a descriptive term varies depending on possible alternatives in the situation. Some allowance needs to be made for markedness here. Lastly, the configuration of fields can change diachronically.

It is possible that there are natural focal areas in a semantic field. This has been demonstrated for color terms [Berlin and Kay 1969]. Also, it is possible that certain focal areas have a natural associated dynamics, i.e. tend to expand or contract in all languages.

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