DYNAMICS OF ATTENTION FOCUS IN NARRATIVE DISCOURSE: THE PULAA CASE by Andrej A. Kibrik (Moscow)

Attention focusing is one of the central cognitive mechanisms that govern discourse processing. The present paper has a twofold purpose. The theoretical purpose is to formulate deductively the major stages of attention focusing in narrative discourse. These stages, in the first place, include: introduction of a referent into attention focus (AF), maintenance of a referent in AF en route to AF. The descriptive purpose is to apply the proposed approach to the data of a particular language, namely Pulaar (Atlantic family). Each stage of AF dynamics in discourse is served by the corresponding formal means. Attention dynamics in Pulaar are affected by the grammatical features of the language, especially the multi-sentential class system reflected in anaphoric pronouns. If there are several foci referents they coding varies depending on whether they belong to the same noun class or different ones.

FUNCTIONS OF EVENKI VERBAL SUFFIXES WITH VARIABLE MORPHEME ORDERING (with special reference to Evenki and comparative data from other languages) by I.V. Nedjalkov (St. Petersburg)

This paper investigates morphemic ordering principles of Evenki verbal suffixes with special reference to suffixes with varying position with respect to the verb stem and other morphemes. Semantic (and other) factors leading to the 'violation' of the canonical morphemic order are examined. The following related problems are discussed: (1) degree of fusion (inseparability) vs. movability of verbal suffixes depending on the meaning of the suffix and the verb stem; (2) combinability of verbal suffixes in Evenki, and their semantic scope of movable verbal suffixes; (continued on page 3).
Dynamics of Attention Focus in Narrative Discourse: The Pulaar Case

by Andrej A. Kibrik (Moscow)

1. Pulaar

Pulaar is the Futa-Toro dialect of the Fula/Peul/Fulfulde language (Atlantic family: see Arnott 1970, Koval and Zubko 1987) spoken in Senegal.

Maintenance of reference in Pulaar sentence has been examined elsewhere (Kibrik 1987a, 1988:Ch. 4). Here I shall try to describe the dynamics of reference in Pulaar narrative discourse, viewed from the perspective of the speaker’s attention distribution.

Several notes concerning the Pulaar grammar are due here. Pulaar is a multil-noun-class language. There are 21 classes (see Sylla 1982), and the class membership of a noun determines its morphological, syntactic, and discourse properties. Every noun class is characterized by an abstract noun class marker, say, O (human class), NGU, NDI, and so forth. There exists a postponed definite article that formally coincides with the marker, cf.: gorko ọ thọ ọ ọ, muubu ngu thọ ọ ọ, fly ọ ọ.

Every class determines a set of anaphoric pronouns - subjective, direct-objective, indirect-objective (including possessive), emphatic, and extended (unmarked for syntactic function). Along with the class anaphoric pronouns there are special syntactic pronouns that occur only within the same sentence with their antecedents. Cf.:

\[
\begin{array}{|c|c|c|c|c|c|}
\hline
& S & DO & IO & Emphatic & Extended \\
\hline
\text{Class} & 0 & o & mo & makko & kanko & oon \\
& NGU & ngu & maggu & kanngu & nguuun & \\
\hline
\hline
\text{Syntactic} & \emptyset & dum & muudum/mum & kañum & -- \\
\hline
\end{array}
\]

2. Terminological preliminaries

Among the cognitive regulators of discourse processing the distribution of the speaker’s attention and especially the focus of attention play a crucial role. Focus of attention can be defined as a slot in the speaker’s current memory that is filled at any given moment of discourse by one or a few referents spoken of (see Grosz 1977, ihlr 1987b). The focus of attention is permanently updated and its contents are subject to quick replacement. A referent participating in the events narrated can approach or move away from the focus of attention at different moments of discourse.

Speaking in terms of discourse constituents, current attention focus (AF) is the clause level notion. The corresponding notion of the level of paragraph or whole discourse can be called global focus of attention or focus pool (of a paragraph or of discourse). The focus pool (FP) consists of referents being the major protagonists of the paragraph or of attention focus in discourse. First, a referent can be introduced into AF, maintained therein, and eliminated from AF. Second, a new referent can be introduced into current AF alone, or into FP at the same time; moreover, it can be reintroduced into AF when it is already in FP. Third, AF can contain one referent or more than one at a time. All these parameters affect the choice of linguistic devices coding the dynamics
of AF in discourse. The mechanisms of such choices used by Pulaar speakers will be shown below. The analysis is based on the published Pulaar texts verified with the help of my informant, and on a tale told to me by the informant himself.

3. Dynamics of AP in discourse

The first phrase of AF dynamics is AF formation, or the introduction of a referent into AF. This is done by the speaker with two or three full NP nominations of a referent. The standard sequence of nominations is as follows: full NP - full NP with a definite article - class anaphoric pronoun (not counting automatic syntactic pronouns), Cf.: 

(1) wonnoo do ko mbuubu₁ ari, ø₁ tawi ngaari <...>
'It was so that [a] fly came, found [an] ox
mbuubu ngu₁ sikki maa taw ø₁ teddi no feewi
The2 fly1 thought that (Ptc) it will weigh much [sitting]

   e dow ngaari. ngu₁ wii ngaari: ... 

   on [the] top [of the] ox. It 'told [the] ox: ...'

(Meyer 1979:95)

Note that "the ox", not intended by the speaker to enter AF, is constantly coded with the unmarked full NPs.

In (1) the referent "the fly" is meant to enter not only AF but also FP. Referents entering only AF are usually introduced with a shorter sequence of nominations, not providing the persistent grounding of a referent:

(2) laamdo o yetti neddo₁ wii dum₁:
The2 king1 took [a] man [and] told him

"yahanam to dobbó o!" 
Go::on:my:behalf to this2 woman1!

ø₂ yehi to debbo o ...
Hè went to the2 woman1 ...

(Collectif... 1978:34)

When AF is already filled with a referent, the referent often has to be maintained. The only means of long-term maintenance of focal referents are class anaphoric pronouns. If the referent is not forced out of AF by another referent, it can stay in AF for a relatively long time even without being mentioned:

(3) ngaari-jinne ndi₁, ganndal mum₁ hokki dum₁:
The2 ox-jinn1, his2 knowledge1 gave him [=he felt],

taw ndi₁ telliima hankadi, to ndi₁ wi'ata
(Ptc) he climbed:down then, [and] when he was:going (he)

ind₁
[to]

jawloo pišol ngol doo, taw feeter-e jeynge
grab the2 amulet₁ (Ptc) (Ptc) [a] spark [of] fire

diw, dakkii e pišol ngol he', pišol ngol tayii,
jumped, stuck to the2 amulet₁ (Ptc), the2 amulet₁ broke,
The further stage of AF dynamics is the elimination of the focal referent from AF. In the following excerpt (it is the story told by the fly about events it witnessed) at the beginning there are two referents in AF - "the ox-jinn" and "the cows":

(4) so weeeti, ko doon ngaari-jinne ndi jippinta
    'When it: dawns, just there the ox-jinn drives: down
   na'i di, di ndura. so jamma ari, 0 safa
   the2 cows1, they graze. When [the] night comes, he draws
   di, di njaha dow <...> 0 fa'i e safde di, them, they go up <...> [When] he began to draw them,
   njuuriimi e nagge woote, min njehi, mbaasmi
   I: flopped: down on one2 cow1, we started, I: didn't: have [to]
   yahde, njiirumi Kumba, gitam de didi. 0 ari, walk, I: saw Kumba [with] my: eyes (Art) (two). She came,
   omoi biri, mbi:mo(g'o)<-mi: "Kumba!" 0 wi: ... She [began to] milk, I: told: her: "Kumba!" She told: ...
   (Meyer 1979:99)

In this example one can see two ways of wiping referents out of AF. The referent "the ox-jinn" is wiped off suddenly: it is no longer mentioned, and the narrated events do not imply it. The other referent, "the cows", is being wiped off gradually, it is extinguished little by little. The switch of attention onto a new referent "Kumba" is the signal of the completed updatedness of AF.

By the way, the easy introduction of the referent "Kumba" into AF is due to the fact that it is contained in the FP of the given text. That is, we here face not a mere introduction but a return of a referent into AF. The capacity of the multi-noun-class system sometimes makes it possible to return a referent into AF by using only an anaphoric pronoun. Thus in the following example the pronoun mabbe 'them' refers to the referent "the animals" that has not been mentioned for two pages but belongs to FP:

(5) mbuubu naaraani ngol jam,
    'The ] fly didn't: listen [to] that [= those words] quietly,
    mbuubu diwi, yehi <...> ari e mabbe
    [the] fly flew: up, flew: away <...> [and] arrived to them'
   (Meyer 1979:97)

(Not that in this example there is one more pronoun occurrence exhibiting a peculiarity of the multi-noun-class system: in the first class the antecedentless class pronoun ngol stands for the word konngol 'magic' words'. Such cases of anaphora with the choice of a pronoun on the basis of cultural knowledge are extensively examined in Koval 1987:214ff.)

In (4) we observed how AF is updated step by step. Now consider a case of abrupt replacement of a focal referent. In the following excerpt the contents of AP (= the focal referent "the hyena") are replaced by a new referent:

(6) noon tan haa 0 daanii, 0 daanii
    'It was] so only until she fell: asleep, [as] she fell: asleep
So far we have examined examples where AF contained no more than one referent at a time. What happens if a referent is **added** to AF without forcing out the prior focal referents? In the following extract (it immediately follows the woman’s speech) in addition to the referent “the woman” (i) the referent “the lion” is introduced into AF.

(7) **mbaroodi ndiț** tan yalti neder waande
    The lion (PTC) went out [from] inside [the] tertiary
    he; **ői** wi’i omoi doga.
    (Ptc); she [=the woman] said [=was going to] (she) run:away.

    **ndiț wi’i : "alaa, woto dog!..."**
    It said: "No, [do] not run! ..." (Meyer 1979:163)

The simultaneous presence of two referents in AF in (7) is possible due to the **class differentiation** between anaphoric pronouns. Cf. a case where the old referent (“the man” = j) and the new referent (“Taatuma”) belong to one and the same class:

(8) **Faatumata**, so **ői** fini subaka,
    ‘Faatumata, when she awoke early:in:the:morning, kicked
    moi <...> haaktuu! oonj kadi haaktoo, őj tutta e
    him <...> Pah! she also expectorated, spat (at)

    **makkoj** (Meyer 1979:177)
    him’

Here the function of an extended class pronoun (oon) is salient: it codes the referent that entered AF last.

The following example shows how two referents of different classes can be maintained simultaneously through rather long stretches of discourses:

(9) **ńande kala**,** mbaroodi yaha, őj wara lella, őj**
    ‘Every2 day1 [the] lion goes, kills [an] antelope,
    addana moj őj ńamaa. so
    brings [it to] him [=the man] [for] he [could] eat. When

    **weeti**, **ndiț yaha kadi, ndiț jagga lella walla**
    it:dawns, he goes again, he grabs [an] antelope or

    **njawa**, **ndiț hela koyde mum, ndiț roondoo,**
    [a] red antelope, he breaks its legs, he loads [it on his
    head],

    **ndiț addana moj**
    he brings [it to] him [=the man]’ (Gaden 1913:174)
There are also cases where two referents of the same class are maintained together in AF. Cf.:

(10) bojeli\_i anndi wonde \_i waawaa yaade kadi \_i 'Small Hare knew that he cannot go once:again [to]
    ina \_i hamlito \_i fiiwa goddum. \_i dum wadi
    borrow [from] Elephant something. That made [=that's why]
    \_i felliti yaade to ngabu\_i. \_i ngabu\_i
    he decided [to] go to Hippopotamus. Hippopotamus
    noon, \_i ka\_i\_i\_i laama \_i maayo. \_i yotti \_i yoti
    (Ptc), he reigned [over] [the] river. He came [and] he
    wii mo\_i : ... 
told him: ... (Usman Ka, p.c.)

Here not only the non-focal referent "Elephant" does not prevent the further pronominalization of the referent "Small Hare", but two focal referents - "Small Hare" and "Hippopotamus" - are pronominalized interchangeably. (They are personified and hence coded with the O class pronouns.) However, these two referents are not equal in their focality and pronominalizability. "Small Hare" is contained not only in AF but also in FP. That is why in the last sentence of (10) it is coded by autonomously referring pronouns in the subject position. "Hippopotamus", on the contrary, having just entered AF, is coded by an objective pronoun that has non-autonomous, dependent, reference. Cf. also the following example where two lions participate, the first being the hero of the tale, and the second appearing for the first time:

(11) ndeke \_i mbaroodi\_i dariima to, taw ndiya mbaroodi\_i
    'Then [the] lion stood there, (Ptc) another lion
    giddi, di\_i\_i mbiindiiri garaa\_i!
    rushed [to him], they told:each:other bang! [=interlaced],
    cegeneeji ene kaba, ndi\_i
    [their] claws tore [themselves], he [=the first lion]
    roondi ndi\_i, ndi\_i tappi ndi\_i
    lifted him [=the second lion] [up], he struck him
    e leydi ... (Meyer 1979:99-101)
    upon [the] ground ...

The reference of subjective pronouns in the two last clauses caused no doubts in my informant. Apparently, "the first lion", being a member of FP, favors the autonomously referring pronominalization.

Cases are frequent when two or three referents of the same class (usually the O class) are present in AF simultaneously, being equal in their relation to FP. For a subgroup of this group of cases there exists a special and extremely salient convention. I mean the retold dialogues where the roles of interlocutors constantly interchange. Any of the interlocutors is typically coded by the plain O class pronouns and such nominations can be repeated with variable reference as long as necessary. For the sake of space economy I will not cite long chains such as: \_i wii 'he said': "... \_i wii: "... \_i wii: \_i wii: "... The phrase \_i wii has practically become an indivisible signal of the speaker shift. There are even cases when non-O-class referents (speaking animals) are coded by the O pronoun precisely in the contexts of the phrase \_i wii.
This convention is effective and distinctive when there are two interlocutors. It is hard to explain why it is retained when three interlocutors participate in a retold conversation. At the beginning of the following excerpt a single referent is in AF and then two more referents join him:

(12) O₁ yetii tan, O₁ hokki binngelej ṭe came only [=as soon as he came], ṭe gave [the] son
debbo₂ menkelde kappe. debbo O₂ [of] [the] pieces [of] gold. The woman₁

wii mo₁ ṭe: "hol dikkudo ma dum?" O₁ wii: "oo
told him [=the son]: "Who gave you that?" He said: "That
da". O₂ wii: "miin de njidmi ko
over:there" ṭe [=the man] said: "As:for:me (Ptc) I:want (Ptc)
yarde". O₂ wii: "yarnu mo!" O₁
[to] drink". She said: "Give:[some]drink [to] him!" He
yarni gave:[some]drink [to] him'.

Here the last three boldfaced nominations are rather peculiar in the sense that they require for their interpretation prior understanding of the succeeding direct speech. My informant encountered great difficulties in analyzing this text. Apparently, the O Wint convention has become relatively independent of the pragmatic sources that produced it.
I have to mention two remaining types of AF dynamics that I was able to discover in Pulaar narrative discourses. The first of these is the union of focal referents. If there are, say, two referents in AF, and a complex referent consisting of these two referents participates in an event, this complex referent can be readily pronominialized. In the following excerpt the two interlocutors are "the man" and "the woman".

(13) O₁ wii: "<...> njidmi tan ko ndogden ṭe said: "<...> I:want only that we:run:away:together,
njaaden". O₂ wii: "njehen!"
we:go:away:together". She said: "Let's go!"

Be₁+j njaadi (Collectif... 1978:34)
They went:together'

In the following text the complex referent i+j functions as a whole entity through a long chain of clauses. Then one more referent "the husband" (k) enters AF. Furthermore, the complex referent i+j undergoes fragmentation: the referent "the man" is isolated. This is done through a trivial device: the full nomination is used (with succeeding pronominization). Then a new referent union is created:

(14) omoₖ ridda Be₁+j haa weeti, do ṭe laarat a ṭe pursued them until it:was:dawn, when he was:looking
hebtaade Be₁+j do,
[to] run:down them [=almost ran them down] (Ptc),

oko felli, oko woofi, gorko O₁ diwi ṭe shot [and] (he) missed, the man jumped:down [from]
ngelooba mum₁. ɓe₁+k pottii, ʰis₂ camel₁. They encountered [one another], hé
libi mọk ... (Collectif... 1978:34-35) [=the man] downed him...’

In the last clause of this extract the i+k union breaks up. The referent “the man” is a member of FP and hence can be easily pronominalized in the autonomously referential position of the subject. The second focal referent is pronominalized in the nonautonomously referential objective position.

4. Conclusion

We have reviewed the major stages of the dynamics of attention focus in Pulaar narrative discourse. Among these stages are: introduction of a referent into AF, maintenance of a referent in AF and deleting it out of AF. Referents that only enter current AF are processed and coded differently from those that enter or are present in the focus pool of a paragraph or a whole discourse. Furthermore, AF can contain one referent or more than one referent at a time. This distinction affects strategies of processing and coding of focal referents. A relevant factor is also the difference vs. identity of the class membership of the simultaneously focal referents reflected in the choice of anaphoric pronouns.

Focal referents can coalesce together into a single whole; plural focal referents may undergo fragmentation.

Linguistic devices used for coding AF dynamics include, in the first place, various types of numerals full of NPs with or without definite articles, plain and extended class anaphoric pronouns), and minor conventions, such as autonomous referentiality of the subject position or nearly obligatory pronominalization applied to the author of the reported speech.

There are reasons to believe that when the cognitive perspective on language is generally accepted in linguistic studies, a description of devices used for coding the dynamics of attention focus in discourse will become an obligatory part of a full grammar of any language.

Footnotes:
1. In the examples, the functions of the words of the Pulaar text that are not required in good English translations are indicated in parentheses. Elements of glosses having no counterparts in the original text but necessary for the intelligibility of the translation are indicated in square brackets. In the glosses a colon is used if more than one English word corresponds to a single Pulaar word. Subscript number indices are used in the glosses if the order of words in a phrase or a clause differs from that in the Pulaar text.

2. Names of the referents, that is, their most neutral descriptive nominations, are indicated in double quotes.

Abbreviations in glosses: Art article, Ptc particle

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References


**LANGUAGE AND COMPUTERS**

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In recent years, corpus linguistics — the branch of linguistics that is concerned with the study of language use by means of large text corpora — has developed into a discipline in its own right, while continuing to be an important ancillary discipline to various other linguistic subdisciplines. Having emerged from the convergence of computational linguistics and descriptive linguistics, corpus linguistics stands out from other branches in linguistics mainly because of its methodology. It has gained access to linguistic data that previously could only be obtained on a very small scale or not at all while at the same time various techniques for the manipulation and interpretation of data have been discovered and/or further developed.

This book is an account of some aspects of the research in the field of corpus linguistics that was carried out at Nijmegen University from 1981 to 1989. While during this time several research projects were embarked upon, including projects aiming at the analysis of Modern Standard Arabic and European Spanish, the account presented here is restricted (basically) to the two research projects in which the author herself took part. The first of these projects was aimed at the design and implementation of computational tools for the automatic syntactic analysis of corpora, while the second project aimed at the syntactic analysis of a one million word-corpus of contemporary English.


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The use of the computer as an instrument for the linguistic research of Spanish has become increasingly important over the last few years. Still, until now a coherent, formal description of Spanish which incorporates lexical, morphological and syntactic aspects in a single model has been lacking. Such a description is vital for the development of parsers for automatic grammatical analysis. This study aims to make up for this deficiency. A great number of structures of contemporary written Spanish is analyzed and translated into formal rules. Together these rules make up a complete grammar and lexicon. By means of a parser generator the grammar and the lexicon have been converted into a computer program for automatic morphosyntactic analysis. The study evaluates the grammar on the basis of the results of the analysis of arbitrary text fragments. The presentation of the formal grammar is preceded by an introduction into descriptive Spanish linguistics and a survey of projects in the field of automatic sentence analysis of Spanish. The book was written with a primarily linguistic objective, but it is also intended for computer scientists who take an interest in linguistic applications of computer science.

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