Deixis in Swahili: 
Attention meanings and pragmatic function*

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1. “Proximity” versus “attention”: Competing traditions in the analysis of demonstratives

There is a long-standing tradition in linguistic description that demonstrative pronouns have meanings that deal with proximity in space and time. Noah Webster, for example, writing in 1784 says, “This and these refer to something present; That and those to something absent” (Webster 1784 [1968]: 16). Closer to the present day, Lyons (1969: 278) states that “‘Demonstrative pronouns’ and ‘situationally-bound adverbs of place’ ... are to be distinguished in terms of a category of ‘proximity’. Both this and here are to be interpreted as ‘proximate’ with respect to the speaker.” Fillmore, speaking of the semantics of English come, notes, “Place deixis differs from language to language, it appears, only in having either two or three categories. English has two: near the speaker at the time of speaking — Proximal — as in here and this, and away from the speaker at the time of speaking — Distal — as in there and that.” Spanish and Japanese, Fillmore continues, have the three-way distinction of “Proximal, Medial and Distal” (Fillmore 1966: 221). This tradition is firmly established: when there are forms in a language that are identified as demonstrative pronouns, they are assigned meanings of proximity. So prevalent is the tradition that these meanings are normally accepted without question.

There is, however, a different tradition, one that deals with demonstratives in terms of concentration of attention. Charles Sanders Peirce sees attention as the essential function of demonstratives. Peirce’s well-known division of signs into Icon, Index and Symbol designates “Icon” as a sign related to its object by similarity, “Symbol” as a sign related to its object by convention, and “Index” as a sign whose “characteristic function” is “that of forcing the attention upon its object” (quoted in Fitzgerald [1966: 58]). Peirce says, “The demonstrative pronouns ‘this’ and ‘that’ are indices” (Fitzgerald 1966: 59).
Being words in a language, demonstratives cannot be indices in the strict sense. Peirce explains:

That a word cannot in strictness of speech be an index is evident from this, that a word is general — it occurs often, and every time it occurs, it is the same word, and if it has the same meaning as a word, it has the same meaning every time it occurs; while an index is essentially an affair of the here and now, its office being to bring the thought to a particular experience or series of experiences connected by dynamical relations (Fitzgerald 1966: 58).

Peirce does not mean that demonstratives are not conventional signs; they are indexical symbols, indexical in that their "function is to call attention to what is spoken of" (Fitzgerald 1966: 59). Thus for Peirce, demonstratives are words with constant meanings that deal with attention.

Bertrand Russell also sees the essential aspect of demonstratives to be attention. In discussing the difficulty of a precise definition of this, he writes (1940: 111) "There is obviously a general concept involved, namely 'object of attention,' but something more than this general concept is required in order to secure the temporary uniqueness of 'this.'" Russell recognizes no proximity component to the meaning of this, but only attention.

Moving from English into other languages, attention similarly figures as the central meaning in Kirsner’s analysis of the demonstrative adjectives in Dutch. Previous theories have categorized these forms in terms of proximity. But Kirsner argues that proximity is not adequate to explain the actual usage of the forms. He instead hypothesizes meanings (1979: 358) that deal with attention: "the meanings signaled by the Dutch demonstratives are organized into a grammatical system (in the sense of Diver [1969: 47]) that exhaustively subclassifies a semantic substance that we may call 'deixis' and define as 'the force with which the hearer is instructed to find the referent' (Garcia: 1975: 65). ... deze signals HIGH DEIXIS, 'greater urging that the hearer find the referent' and die signals LOW DEIXIS ..." Kirsner and Van Heuven (1988: 237) further define Deixis: "... the meanings HIGH DEIXIS and LOW DEIXIS explicitly recognize the attention-directing aspect of demonstratives." These meanings, they continue, "are not descriptions of location or of other properties of the referent ... but rather instructions to the hearer to pay attention to various degrees (cf. Diver [1980; 1987]); i.e., they are the speaker’s estimates of how much inferential work the hearer will need to do in order to ‘match’ the message the speaker is attempting to communicate" (1988: 238). 1

2. The three Swahili demonstratives form a semantic system of relative attention levels

Swahili has three demonstratives, $h$, $h-o$, and $le$, traditionally viewed as having meanings dealing with proximity and 'previous mention', $h$ and $le$ have traditionally been analyzed to mean 'proximity' and 'non-proximity', respectively (Ashton 1944: 58–60; Stevick-Mlela-Njenga 1963: 59, 66; Loogman 1965: 66–69). I have argued before (Leonard 1985) that $h$ and $le$ are better analyzed as having meanings dealing with deixis in the Columbia School sense of a speaker’s relative concentration of attention on a referent.

The present paper expands the scope of the analysis to include the third demonstrative, $h-o$, and demonstrates how the meanings of all three in concert can be used for pragmatic purposes.

Although all previous analyses of $h$ and $le$ are in terms of proximity, there is no real agreement as to a proximity meaning for $h-o$ and it has been analyzed in a variety of ways all marking it as qualitatively different from $h$ and $le$. Some authors, like Ashton (1944: 181–183), assign the meaning ‘referent is previously mentioned, regardless of proximity’, and others, for example Zawawi (1971: 64), say that the referent of $h-o$ is either ‘near listener’ or ‘previously mentioned’. This 'previous mention' meaning component sets $h-o$ apart from the other two demonstratives.

Yet the analysis presented below shows that $h-o$ is not an isolated element with a qualitatively different type of meaning, but instead is intimately bound to $h$ and $le$ in a single system. This Saussurean organization of grammatical meanings into systems explains many aspects of speakers’ actual usage of forms and is an important feature of Columbia School analyses.

The present paper, then, argues that the meanings of all three Swahili demonstratives cooperate in an integrated system dealing with the single semantic substance deixis. The meanings proposed are:

(1) System of Deixis

$\begin{array}{ll}
    h & \text{HIGH DEIXIS} \\
    h-o & \text{MID DEIXIS} \\
    le & \text{LOW DEIXIS}
\end{array}$

What will motivate a speaker to concentrate greater or lesser attention on a referent? Central to the Columbia School’s sign-based approach to semantics is the status of communicative function, and human origin and use as guiding principles, or orientations, in the analysis of language. Certain aspects of the structure and use of language can be attributed
to communicative factors; certain aspects to human characteristics and skills.\(^4\)

In the following discussion we will refer to the two orientations – the communicative and the human – to explain the way that Swahili data pattern. Each orientation seems in this case to be motivating a particular strategy in utilizing different degrees of deixis. One strategy, predominately communicative, deals with the presentation of information. The second strategy, discussed later, is motivated by the human characteristic of egocentricity.

2.1. A communicative strategy: Additional information calls for high levels of attention

The presentation of information strategy is the use of higher deixis with additional information and lower deixis with the repetition of a referent's previously established identity. It is reasonable to assume that a speaker will direct the hearer to attend more strongly to additional information than to mere repetition because the hearer in the former situation has a more complex processing task. Consider the following:

(2) Repetition of identity: no additional information. \(le: \text{LOW DEIXIS}\)
   a. \(\text{Alimwona kijana. Kijana yu-le alisimama mlangooni.}\)
   'He saw a youth: \(le\)-youth (LOW) was standing at the door.'
   b. \(\text{Alimwona kijana. Alihisi kwamba ni yu-le aliyenwona jana.}\)
   'He saw a youth. He realized that it was \(le\)-one (LOW) whom he had seen yesterday.'

Each deictic reference to the youth, i.e., \(kijana yule\) and \(yule\), merely repeats the referent's previously established identity, and thus the deictic reference adds no additional information.

Other deictic references do introduce additional information. One type is the very act of introducing a referent, that is, its first mention, as in (3).

(3) Reference is first mention; introduces additional information. \(h: \text{HIGH DEIXIS}\)
   An oathgiver explains an oathing procedure to a man. He says, "first I'll speak, you'll listen, then when I'm finished," \(nataka wewe useme h-\\text{iwi} "\text{Mikale mikale} ..." \) (Muhando 26)\(^5\)
   'I want you to speak in \(h\)-manner (HIGH) [i.e., say the following]: "Mikale mikale ..."

A reference such as (3), a first mention, introduces additional information into the discourse; prior to a first mention there is clearly no information about a referent.

Another type of reference introduces additional information by recasting an identity. It introduces an additional way of viewing a previously mentioned item by the use of a deictic and a different lexical item from that previously used.

(4) Recasting of identity, introduces additional information. \(h: \text{HIGH DEIXIS}\)
   A woman storms into a village to confront a young man (named Kazimoto) who has slept with her daughter. The woman says she's come to fight. "Kazimoto," she screams, "... You think I'm stupid? ... You think I'm afraid of a little idiot brat like you?" She turns to Mafuru, Kazimoto's father, and demands:
   \(\text{Kazimoto yupo? ... Mwambie atoke nje! ... Kazimoto! Unafikiri mimi mjinga? ... Mafuru ... mimi sina ugomvi na weewe. Nita ugomvi na h-\\text{u} nyoto mnyamavu h-\\text{u} ... bubu h-\\text{u}! Mnyamavu lakini matendo yake ya kinyama!} \) (Kezilahabi 1974: 105–106)
   'Is Kazimoto here? Tell him to come outside! ... Kazimoto! You think I'm an idiot? ... Mafuru ... I have no quarrel with you. My fight is with \(h\)-child (HIGH) \(h\)-silent one (HIGH)! ... \(h\)-mute (HIGH)! Silent but his actions are bestial!'

We see that in the view of the woman, Kazimoto is a (mere) child, a silent one (who will not answer charges), a (person who acts as if) mute. Each reference supplies the hearer with additional information about the referent. This type of usage lends itself to stylistic recasting and refining of an identity. A speaker can thus add layer upon layer of attribute, each one to a certain degree changing the perception of an object or character.

Simple repetition as in (2) requires less attention than the introduction of additional information as in (3) and (4). We might predict that a speaker will tend to use higher deixis with an item that introduces additional information and lower deixis with one that introduces no additional information, but that only repeats. Table I presents a correlation supporting that prediction.\(^6\)

Higher deixis skew toward the introduction of additional information, lower deixis toward repetition.\(^7\) In three randomly selected chapters of different modern novels, \(h\) refers to items whose deictic reference intro-
The passage as a whole is both introduced and recapitulated by *h*, HIGH DEIXIS, which serves to mark it off as a unit. The narrator begins:

(5) Introduction to passage. *h*: HIGH DEIXIS

*Mabadiiliko h-aya yalitokea nikiwa nyumbani.* (Kezilahabi 1974: 148)

‘*h*-changes (HIGH) happened when I was at home.’

The narrator finishes, five pages later:

(6) Recapitulation of passage: *h*: HIGH DEIXIS

*Naani, h-aya ndiyo mabadiiliko yalikuwa yametokea ...* (Kezilahabi 1974: 153)

‘Yes, *h*-ones (HIGH) were indeed the changes that happened ...’

Within the passage are two narrative sections. Within each section the narrator first talks about relatively unimportant, background changes. He refers to these with *low* deixis. Within each section he then builds up to changes that he finds very important. These he marks with higher deixis. (The structure of both sections is summarized in Table 2.)

One narrative section concerns a man named Manase in whom the narrator is very interested. Manase has seduced the narrator’s sister. She becomes pregnant and dies, abandoned by Manase, giving birth to a stillborn child. The narrator hates this man. The section begins with a change of only peripheral interest:

(7) Less important change. *le*: LOW DEIXIS

*Badiiliko ... ambalo lilitokea haraka sana ni li-le la Manase kuhamishwa.* (Kezilahabi 1974: 152)

‘A change that happened quickly was *le*-one (LOW) of Manase’s being transferred.’

But the real news, the narrator continues, “that I had concerning him was that his wife had given birth to an amazing child”. Indeed, the child is so horrifying no one will speak about it.

(8) Very important change. *h*: HIGH DEIXIS

*Wale walioniamba habari h-izi walikataa kunieleza sura ya mtoto huyo kwa kuogopa kwamba wakisemamwema sana huenda wao pia wakazaa mtoto kama huyo.* (Kezilahabi 1974: 152)

‘The people who told me *h*-news (HIGH) refused to describe the face of the child fearing that if they went around talking about it perhaps they too would give birth to such a child.’
The child was just like other children, the narrator is told, “Except that his face was terrifying”. So, reviewing this section of the passage, we see:

(9) Summary of examples (7–8):  
\[le\text{-change}: \text{LOW DEIXIS}\]  
\[h\text{-news}: \text{HIGH DEIXIS}\]

The enemy Manase  
Manase is transferred. (Of minor interest to the narrator.)  
Manase’s child is deformed with a terrifying face. (This development is of great interest to narrator. Manase caused the narrator’s sister and her child to die in childbirth — this is cruel poetic justice.)

The other section, a few pages earlier in the passage, concerns a violent and manipulative woman, Tegema, who has sworn vengeance against the narrator, Kazimoto. This is the same woman as in example (4). Kazimoto is concerned; she is dangerous to him. The section begins:

(10) Less important change. \[le\text{: LOW DEIXIS}\]  
\[Badiliko \ldots \text{nt } \text{li-le } \text{... alioa mke wa pilu, yaani Tegemea. (Kezilahabi 1974: 148)}\]  
“A change ... was \[le\text{-one (LOW)}\] [of a certain man]. He married a second wife, that is, Tegema.”

The woman Tegema tries to continue her old manipulative ways, this time on her new husband. He attempts to punish her, and she evades the punishment.

(11) More important change. \[h-o\text{: MID DEIXIS}\]  
\[Na \text{ h-il-o ndilo lilikuwa kosa lake kubua. (Kezilahabi 1974: 150)}\]  
“And \[h-o\text{-one (MID)}\] was indeed her big mistake.”

Manipulation and evasion of punishment run counter to cultural norms and are viewed as antisocial. Tegema is sent away where she ponders her fate. The narrator relates that she comes to think that her new married condition means following the normative behavior and she decides to do this.

(12) More important change. \[h-o\text{: MID DEIXIS}\]  
\[Na \text{ h-il-o ndilo lilikuwa dawa ya Tegemea ... (Kezilahabi 1974: 151)}\]  
“And \[h-o\text{-one (MID)}\] was indeed Tegema’s cure ...”  
[Her changed behavior is the “cure” to the rift caused by her original behavior.]  

She continues with the changed behavior in concord with the cultural norms. Eventually she completely internalizes the attributes she displays. This change in the woman is a complete reversal of her former personality and is ascribed to her husband’s influence. It is of great thematic importance in the novel, for she is no longer manipulative and violent, and thus no longer a threat to the narrator.

(13) Most important change. \[h\text{: HIGH DEIXIS}\]  
\[Kufuatana na badiliko h-il-li kwa njia fulani nilimsifu Kabenga na alinipendeza zaidi kuliko alivyokuwa zamanii. (Kezilahabi 1974: 152)\]  
“Following \[h\text{-change (HIGH)}\] in various ways I praised [her husband] and I liked him better than I had before.”

Table 2 summarizes both sections of the passage. The narrator begins both narrative sections with a ‘\[le\text{-change} \text{ (LOW)}\]’ which is only of mild interest — Manase’s transfer, and Tegema’s marriage. Each serves to set the stage for what the narrator finds of real interest. What he finds most important he marks with \[h\text{, HIGH DEIXIS} \text{ — the personality change in one enemy, and the deformed child of another.}\]

The narrator adds further depth to the structure of the section about Tegema with the use of \[h-o\text{, MID DEIXIS}. He starts that section, as we saw, with \[le\text{, LOW DEIXIS}. Then he marks with \[h-o\text{, MID DEIXIS two incidents — } h-o\text{-mistake in (11), and } h-o\text{-cure in (12) — that are pivotal in the bringing about of the final, HIGH DEIXIS change. The incidents in (11) and (12) are, in and of themselves, of sufficient localized interest and importance to warrant } h \text{ but they are downplayed to allow the highest deixis to be reserved for the most important item, the culmination of the section: the } h\text{, HIGH DEIXIS personality change in (13) of his once-potent enemy.}\]

This downplaying of important items to reserve highest deixis for the most important demonstrates the relational aspect of these deictic meanings: the meanings cooperate in an integrated system and are defined negatively \(vis-a-vis\) one another. Another example of downplaying comes from a murder mystery.
Table 2. Summary of ‘Changes’ passage (Kezilahabi 1974: 148–152): the changes (misfortunes) of the narrator’s enemies

<table>
<thead>
<tr>
<th>LOW DEIXIS (Less attention)</th>
<th>MID DEIXIS (Mid attention)</th>
<th>HIGH DEIXIS (More attention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘A change that happened quickly was le-one (LOW) of Manase’s being transferred.’ (Of minor interest to narrator.)</td>
<td>The enemy Manase</td>
<td>Introduction ‘h-changes (HIGH) happened when I was at home’</td>
</tr>
<tr>
<td>(Manase’s child is deformed and terrifying.) ‘The people who told me h-news (HIGH) refused to describe the face of the child fearing that talking about it might cause them to give birth to such a horror.’ (This enemy caused the narrator’s sister to die in childbirth — this is cruel poetic justice.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘A change ... was le-one (LOW) of [a certain man]. [He] married a second wife, that is, Tegemea ...’ (Doesn’t involve narrator except to set the scene.)</td>
<td>The enemy Tegemea</td>
<td></td>
</tr>
<tr>
<td>The women try to avoid punishment — seen as counter to cultural norms) ‘And h-o-one (MID) was indeed her big mistake.’ (Pivotal incident leading to what narrator is most interested in.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘And h-o-one (MID) was indeed Tegemea’s cure ...’ (Her changed behavior is the ‘cure’ to the rift caused by her original behavior.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Following h-change (HIGH) in various ways I praised [her husband] and I liked him better than I had before.’ (The woman’s personality has changed: the narrator’s once dangerous enemy has been neutralized.)</td>
<td>Recapitulation ‘Yes, h-ones (HIGH) were indeed the changes that happened.’</td>
<td></td>
</tr>
</tbody>
</table>

2.2.2. Relational meanings exploited for special emphasis

In this passage, the protagonist, a detective, is explaining to the assembled suspects the how and why of the murder. He will produce two exhibits — a map and a photograph. Reference to the items on the map is straightforward; reference to the items in the photograph is downplayed. The detective flourishing the map and with his finger jabs at the important items he wants the company to pay attention to. He refers to them, quite appropriately, with $h$, HIGH DEIXIS.

(14) Items on map important. HIGH DEIXIS ...

... h-apa panapo kidole changu hichi, ni ufikwenu, h-uu h-uku mbuyu ... (Abdulla 1974: 69)

... h-place (HIGH) where I have this finger of mine is white sand, h-tree (HIGH) h-place (HIGH) is the baobab ...

A while later he produces the photograph. He points out three people in the photograph, and tells his audience to look carefully at them. But he refers to these people not with $h$ as we might expect but instead with $h$-$\alpha$, MID DEIXIS, even though in the grand scheme of the book these people are of much greater thematic importance than the places on the map he has just referred to with $h$. 
The detective is motivated to withhold high deixis from the people in the photograph in order to reserve that high deixis - contrastively high deixis - for a beautiful young woman who sits before them. Her facial features are the keystone to the solution of the murder and the denouement of the entire novel.

(15) Persons in photo (like items on map) important, yet only h-o: MID DEIXIS; author reserves h: HIGH DEIXIS for h-person... hebu tazame vizuri, h-uy-o hapo mwiisho, mkono wa kushoto, nani h-uy-o? ...hebu mtazame h-uy-o bibli aliyesimama ubuwuni kwake kachukia mtoto - umamwoneju? ... Ukintazama bibli h-uy-o, utaona h-UYU hapa... (Abdulla 1974: 70–71)

"Now look well, h-o-person (MID) on the end, on the left, who is h-o-person (MID)? ... now look at h-o-woman (MID) who, standing off to the side, holds a baby - how do you find her? ... If you look at h-o-woman (MID), you will see h-person (HIGH) here [because they resemble each other so strongly]."

The persons in the photograph are referred to with h-o, MID DEIXIS, even though, as we noted earlier, within the book's larger context they are even more germane to the unraveling of the mystery than the items on the map in (14), which were referred to with HIGH DEIXIS. Further the detective truly means for his audience to pore over their physical characteristics, to fully concentrate their attention - "now look well," he says, "...how do you find her?" Yet they are referred to only by h-o, and not h. The speaker does this to reserve highest deixis for that which is of highest importance in solving the crime - the h-PERSON (written in capitals in the Swahili) who sits before them.\(^9\)

3. Conclusion

Examination of h, h-o, and le in actual discourse shows that Swahili speakers use higher deixis in situations judged worthy of higher attention. This worthiness of attention comes from two major motivations that stem directly from the communicative function and human use of language. One motivation is predominantly communicative: additional information requires additional attention. The other motivation is a very human one: the speaker wants the audience to pay most attention to what most concerns the speaker.

The deixis meanings can also establish boundaries, to alert the audience that important territory is being entered, and exited, as do the two HIGH DEIXIS signposts in the introduction and recapitulation of the "Changes" passages. In addition to such a straightforward signaling of the importance of items and events, one can also create special local effects. This is done by exploiting the value relation of the meanings, as, for instance, we saw above in the examples of withholding deixis.

Withholding deixis can create effects of great highlight and contrast. Items worthy of highest attention, other things being equal, can have HIGH DEIXIS withheld, and instead be referred to with MID. This gives the effect of creating room in the system to specially highlight items of extreme interest. Notice also that this reinforces the passage-structuring function: the items being played off against each other are perforce grouped together because it is only when considered as a group that the relational meanings deployed contribute to a coherent message. That is, without grouping together the downplayed and the specially highlighted referents, the hearer would not otherwise be able to infer a coherent motivation for the speaker having used the MID DEIXIS form.

In sum, a Swahili speaker can use the three deictic meanings to orchestrate information flow in general, to pragmatically organize whole passages into internally coherent units, and to highlight or downplay items for purely local reasons. The three deictic meanings in Swahili are an important resource for the pragmatic organization of text.

Notes

1. I am grateful for the valuable comments, insights and criticisms of earlier drafts of this paper by Ellen Contini-Morava, Allan Huffman, Ricardo Otheguy, Wallis Reid, Joseph Davis, and especially William Diver.

1. This is a different use of the term "deixis" than that familiar to most linguists, who use it to refer to the circumstances or participants of the speech situation, what Lyons calls the "orientational" features of language which are relative to the time and place of utterance (Lyons 1969: 275). "Deixis" in Columbia School analysis is used to distinguish between attention systems involved in communicative tasks dealing with entities as opposed to attention systems such as "focus" which deal with events.

2. In this paper the three deictic (demonstrative) forms of Swahili will be referred to uniformly as h, h-o and le. These forms attach to concord markers that indicate the noun class of the item referred to. Swahili has a typical Bantu noun class system: There are fourteen classes in Swahili. The following chart shows the deictic forms combined with the appropriate concord marker for each class. The numeration of the classes is the classic Bantu numbering system (as per Polomé 1967: 94–95).
3. A counter-argument supporting the proximity analysis was made by radically extending the notion of proximity (Wilt 1987). But this treatment was problematic not only in that proximity was now forced to include several quite unrelated parameters, but more importantly because proximity - even extended that way - still could not account for much of the Swahili data (Leonard 1987).


In reading Kirsner’s comparison of Columbia School and Cognitive Grammar analyses of the demonstratives in Dutch, it should be kept in mind that the Dutch and Swahili situations are not parallel. In Swahili, all three demonstratives can occur in sentences where the referent is physically proximate or nonproximate. But while the Dutch LOW DEIXIS form die can similarly occur in messages of either proximity or nonproximity, the Dutch HIGH DEIXIS form deze, when speaking of physical position, can only communicate proximity. In other words, the following Swahili example in which the traditional ‘proximate’ is used to refer to a distant location, is the type of use that we find in Swahili but not Dutch.

Distant but important referent. h: HIGH DEIXIS
Upand marshirtiki niweza kuona nyumba ya Baba ikitokeza jua ya miti.
Nlikumbuka kwambu h-apo muto alikuwa akizaliwa. (Kezilahabi 1974: 88)
In the east I could see father’s house sticking out above the trees. I remembered that h-place (HIGH) a child was being born.

Although reference to a distant location, the motivation for HIGH DEIXIS is clear in the larger context of the novel. In h-place, the narrator’s emaciated sister is in labor, having been made pregnant, then abandoned by the narrator’s worst enemy. The sister dies giving birth to a stillborn child. This is the pivotal incident of the novel, the culmination of almost the entire first half of the book, and quite worthy of HIGH DEIXIS. (We will meet this enemy of the narrator again in examples (7-9).) See Leonard (1982, 1985, 1987) for more counterexamples to the proximity analysis. Also see note 9.

5. Examples other than (2) are from modern Swahili novels. English glosses are my translations.

6. There is some debate over which statistical test is the most appropriate for data such as these. One question is whether the events or trials produced in a connected text are actually independent. Statisticians I have consulted suggest that the trials are indeed independent since each time a form is considered by a speaker, the choice is free. The situation is thus “sampling with replacement” and analogous to the odds of choosing a red or green ball from a bowl containing some of each, if each time one chooses a ball one replaces it. For each trial, the odds remain the same. Someone might argue that a speaker does not really have free choice, because, for example, items that are inherently important must perforce command HIGH DEIXIS. But it is clear even from the few examples discussed in this paper that not is the case and that speakers can and do choose levels of deixis according to what they want to communicate and not because of any mechanical or automatic governance. The other question is whether Spearman rank correlation is not more appropriate because of the scalar nature of the deictics. In this case, my consultants say, the chi-square statistic is more appropriate than the Spearman rank correlation because the data is categorical rather than ranked. Although the data are ordinal they are so only on a very rough scale. Spearman rank correlation, my consultants argue, cannot be used because it assumes that each piece of data has a separate rank. While ties are allowed, it is expected that there are more than three possible ranks present. These data fall into only one of three categories based upon attention level and one of two categories based upon whether or not additional information is introduced. Further ranking is not possible given how these factors are measured. Thus the chi-square is the proper test of the dependence of the two variables of attention and additional information.

7. A 100 per cent correlation is by no means expected. All other things being equal we can expect a speaker to use higher deixis when introducing additional information, and lower when repeating identity, for the former situation requires alerting the hearer to a communicative task that is more difficult than just repeating an identity already known. But there are often other factors at work that can outweigh the note-worthiness of additional information or that can make some entity suddenly important even though its identity has already been well established before. Similarly, all other things being equal, HIGH DEIXIS forms skew towards proximate referents; this skewing no doubt is what led to the establishment of the proximity tradition in the first place. Human speakers can indeed be expected to be egocentrically involved in items close to them and to urge more attention be given to them than to items far from the speakers (Leonard 1985: 286-287). But there are many factors other than mere proximity that vie for attention, and this is why we do not expect (and most certainly do not find) a 100 per cent correlation between h and proximity, le and nonproximity, h-o and medial position. By definition, the invariant meaning of a form correlates 100 per cent with the form’s utterance. “Additional information” and “repetition”, “proximate” and “nonproximate” are but categorizations of factors that tend to influence a speaker to choose a certain degree of deixis.

8. The data in Table 1 are taken from Abdulla (1960: chapter 9; 1974: chapter 7) and Kiango (1974: chapter 1).
9. Notice that (15) is a counterexample to both the "proximity" and "previous mention" analyses. The images in the photograph referred to with h-o are more proximate to the speaker than the woman he refers to with h. The photo is actually held in his hand; she only sits before him. Regarding previous mention, the very first mention of the man and the woman in the photograph, indeed their introduction into the hearer's consciousness, is made with h-o. This is quite clear from the context since neither the young woman, to whom the detective's comments are initially directed, nor any but two of the audience, have ever seen this photograph before. The woman in the photograph, further, is the young woman's natural mother. Until this moment, the young woman thought another woman who had brought her up was her natural mother.

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