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The message in the navel: (ir)realis and negation in Swahili

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Abstract

It is argued that the encoding of conceptual categories such as 'realis' should be investigated by analyzing the meanings of linguistic signs rather than by focusing on *a priori* message-categories that may not be expressed by specific linguistic forms. Applying this method to the expression of 'realis' in Swahili reveals a complex relationship between tense-aspect-modality, negation, and realis status in which some forms signal information related to irrealis, but no forms explicitly signal the meaning 'realis'; the two negation markers span the realis/irrealis divide. Sign-based analysis makes it possible to identify subtle differences between apparently synonymous messages that are conveyed by forms differing in realis status.

Keywords

realis, Swahili, negation, tense-aspect-modality

1. Introduction

In his contribution to the symposium on irrealis a decade ago, Bendix (1998) pointed out some important problems in the definition and application of the label "irrealis". Aside from the inevitable inconsistencies in the way different linguists define it for different languages, it may be applied as a metalinguistic term to language-specific grammatical categories that are used to refer to "unreal" events, 'in a confusion of the unreality of the referents with the category's meaning' (pp. 245-6). Bendix went on to provide a nuanced analysis of a Newari verb suffix that can be used to refer to "unreal" events, and concluded that the meaning of the suffix has to do primarily with evidentiality, and that the message of irrealis should be regarded as a pragmatic inference rather than the meaning of this form. In what follows I ask similar questions about the relationship of the meanings of the Swahili tense-aspect-modality (TAM) and negation markers to ir/realis as a conceptual category. I argue that a distinction should be made between *meaning*—the conceptual content conventionally associated with a specific linguistic

sign—and *message*—conceptual content that is inferrable from a combination of linguistic meanings and contextual and pragmatic information. Looked at from this point of view, there is no form in Swahili that explicitly signals the meaning 'realis'; instead the message that an event or state of affairs is claimed to actually occur (or not to occur) is a pragmatic assumption that can be defeated by placing the forms in an irrealis context. However, some of the Swahili TAM markers do explicitly signal that an event's occurrence is called into question, i.e. that it is irrealis, and they further indicate various degrees of probability of occurrence. Ir/realis shows a complex relationship to negation, signaled by two different negation markers one of which spans the realis/irrealis divide.

The paper is organized as follows. In section 2 I discuss the problem of definitions of ir/realis and what it means to say that a given conceptual content is "coded" in a given language. I introduce a pair of examples from a Swahili text in which objectively similar negated events are coded differently with respect to realis status. In order to understand why these events are coded differently, it is necessary to consider the differences between the meanings of the linguistic signs used in the contrasting examples, and how they are integrated into the Swahili TAM system as a whole. This is taken up in section 3 and its subsections. In section 3 I lay out the structure of the finite verb. In section 3.1 I outline the diachrony of the Swahili TAM markers within the Bantu family. In section 3.2 I discuss the relationships between the TAM prefixes and suffixes, illustrating them with contrasting examples from Swahili texts. Section 3.3 addresses the relationships between the TAM affixes and the two negation markers, whose distribution, while different, also shows some overlap. I argue that the two negation markers express different degrees of confidence or forcefulness with which the speaker negates the occurrence. In section 4 I return to the pair of examples originally introduced in section 2, showing why they are coded differently with regard to realis status despite the apparent similarity between the states of affairs they describe. I then provide quantitative data that further demonstrates the distributional differences between these alternative ways of categorizing events. Section 5, the conclusion, summarizes the analysis and returns to the question of a priori vs. linguistically motivated principles of categorization.

2. The question of coding

The present symposium posed the question 'What do languages code when they code realisness?' In order to be in a position to compare languages with regard to the encoding of (ir)realis, it must be clear:

- what is the substantive content of this notion?
- at what level(s) (morphological, propositional, discourse) does the notion apply?
- in a given language is (ir)ealis constantly or only sometimes conveyed by specific linguistic forms?
- If conveyed by specific forms, does (ir) realis have unified conceptual content or does it involve more than one semantic dimension?

These questions are all interrelated, but we can try to discuss them separately. First, it is well known that there is not general agreement about the substantive content of (ir)realis.

For example, Palmer (2001, p. 5) regards realis/irrealis as equivalent to indicative/subjunctive mood, whereas Elliott (2000, p. 69) argues that realis should be distinguished from both mood and modality. Also, definitions of realis do not always make it clear at what level it applies. For example, Elliott (2000, pp. 66-7, following Roberts 1990) talks about 'realis/irrealis propositions' in the early part of her paper:

> a. **A REALIS proposition** prototypically asserts that an event or state is an actualized or certain fact of reality;
> b. **an IRREALIS proposition** prototypically implies an event belongs to the realm of the imagined or hypothetical, and as such it constitutes a potential or possible event but it is not an observable fact of reality.

It is not completely clear why Elliott describes a realis proposition as 'asserting' and an irrealis proposition as 'implying', but in any case later in the paper she replaces 'proposition' with 'event or state':

> Reality status can be understood as the grammaticalised expression of the location of **an event or state** in either the real world or in some hypothesized, but not real, world. (Elliott 2000, p. 81)

Similarly, Palmer (2001, p. 1) begins by stating that modality (which he equates with ir/realis, as mentioned above) 'is concerned with the status of the proposition that describes the event', but later (p. 8) he distinguishes between 'propositional modality' and 'event modality', which presumably means that at least some types of modality/realis marking do not conform to the earlier definition in terms of propositions.

Bugenhagen (1994, p. 37) is more cautious. Instead of attempting a general definition of realis, he suggests a series of language-specific definitions for the Austronesian languages in his survey and concludes with a list of contexts where the forms labeled 'irrealis' are prototypically found.

By contrast, Fleischman (1995, p. 523) specifies that 'as used here, irrealis refers solely to *meaning*, with no requirement that this meaning be expressed formally by a 'dedicated' irrealis morpheme.' Fleischman's definition of irrealis:

> a speaker's *lack of belief in* or *lack of commitment to* [emphasis in original] (a) the reality, realization, or referentiality of an event or sequence of events predicated in an utterance; (b) the realization of an agent's wishes, hopes or intentions, as expressed in the proposition of an utterance; (c) the authenticity of an utterance or chunk of discourse (i.e. a sequence of utterances); or (d) what for lack of a better term I will call the 'canonicity' or normalcy of a discourse or of a communicative situation. (Fleischman 1995, p. 522)

Note that Fleischman's definition of irrealis, unlike Elliott's, refers to a speakers' belief or commitment rather than to 'the location of the event' in a real vs. imaginary world. That is, for Fleischman irrealis primarily reflects the perspective of a speaker rather than

the objective status of what is being referred to. However she, too, describes the level of application in various ways ('event or sequence of events predicated', 'chunk of discourse', 'proposition' etc.).

Why does it matter whether the notion of (ir)realis applies to a proposition, a clause, an event, a morpheme/set of morphemes, or is a purely semantic notion? This bears directly on the question what is meant by "coding". Take the notion of "proposition". Most linguists would probably agree that propositions are not linguistic units, they are instead information that may be EXPRESSED BY MEANS OF linguistic units. For example, as defined by Lyons (1977, pp. 141-142), '[a] proposition is what is expressed by a declarative sentence when that sentence is uttered to make a statement.' Lyons is careful to distinguish between a proposition (a semantic notion), a sentence (a linguistic unit, pp. 29-30) and a statement (a speech act, p. 30). Since the same proposition can be expressed by different linguistic forms (see e.g. Langacker 1988, pp. 6-10), analysis of propositions leaves open the question of the meanings of linguistic forms.

Another reason why it is problematic to define coding of realis status in terms of messages conveyed in discourse rather than in terms of specific linguistic signs is that it leads to confusion between linguistic meaning and pragmatic inference, as pointed out by Bendix (1998). For example, Givón (1994, p.270) mentions 'correlations' between past tense and realis. But he also states that the realis status associated with past tense morphology can be overridden by e.g. epistemic adverbs (like *maybe, probably, presumably* etc.) or presence in a clause subordinate to a non-factive verb of perception-cognition-utterance (*think, imagine, say* etc.), pp. 272-3. If the purported realis status of, say, a past tense can be overridden by other expressions in the context, then we might best say that in such cases it is the semantic substance of PASTNESS that is "coded"—conventionally associated with a particular linguistic form—whereas realis status would instead be a pragmatic inference that is conveyed in particular contexts of use.

A third problem with defining "realis" as a semantic substance detached from specific linguistic forms is that its status as a cognitive universal becomes assumed rather than investigated. As pointed out by Danziger (2001, p. 204) in regard to the linguistic expression of spatial relationships, 'because it defines the framing question which is asked of every participant, the original [semantic] domain will necessarily emerge as universal'. This point is relevant to any study based on translating decontextualized sentences from the researcher's source language: this method is most likely to elicit uses that most closely correspond with those envisioned in the questionnaire (which in turn are likely to be affected by the languages already known to the researcher).

Rather than assuming the relevance of a priori notional categories, it is more methodologically sound to interpret "coding" of a semantic substance to mean that the substance is conventionally, and constantly, signaled by one or more particular linguistic forms, or signs in Saussure's sense. This is how I will proceed here, in exploring notions related to realis in Swahili. Following Diver (1995, pp. 73-4), I will distinguish between *meaning*—the conceptual content conventionally signaled by a specific linguistic form—and *message*—the idea expressed when a linguistic form is used in a particular context.

Messages are the result of inference based on both the conventional meanings of linguistic forms and pragmatic factors such as knowledge of the linguistic and extra-linguistic context, communicative conventions, cognitive predispositions, and so on. Since a particular message-category, such as 'realis', can be inferred from an open-ended variety of sources, both linguistic and extra-linguistic, analysis that begins with the message-category rather than the linguistic forms does not lead to an understanding of why the forms are used where they are. Instead it imposes an a priori categorization on languages that obscures the categorizations made by the languages themselves.

In addressing these issues with regard to Swahili, I will focus on negation, which is known to be a "swing" category with regard to realis: some languages categorize negated events as realis, others as irrealis. In Swahili, however, the relationship between realis and negation is not a simple one whereby all negated events are marked as either realis or irrealis. Instead there are two different negation markers that co-occur with different TAM markers, and events that appear objectively similar may be categorized in different ways.

Consider the following pair of examples of negated events from a Swahili novel. (Of course, fiction itself refers to an imaginary world, but in Swahili at least, the TAM system is used in the same way for fictional worlds as for the "real world", so for present purposes we can pretend that the examples are talking about the "real world".)

(1) a. *'Endelea, mama,' alisema.*
'Bwana Msa, niliduwaa, *ni-* *si-* *w-* *e*
1sgSubj Neg2 be subjunctive
na la kusema,' Mwanatenga aliendelea. [Abdulla 1974, p. 31]

'Continue, ma'am,' he said.
'Mr. Msa, I was dumbfounded, I didn't have (neg. subjunctive) [anything] to say,' continued Mwanatenga.

b. *'Bwana O akanizungukia mimi. 'Mwanatenga mama,' aliniita, na hivyo ndivyo daima anavyoniita, 'unataka kuolewa na Saidi?' Na mimi kadhalika*
si[=ha+ni][1] *ku-* *w-* *a* *na la kujibu.'*
Neg1+1sgSubj PastNeg be indic. [Abdulla 1974, p.33]
'Mr. O then turned to me. 'Mwanatenga ma'am,' he called me, and that's what he always calls me, 'do you want to marry Saidi?' And I too didn't have (neg. past indicative) [anything] to answer.'

These examples are taken from a detective novel, and are uttered by the same protagonist. Both contain negative forms of the verb 'have' (which in Swahili is expressed by 'be' + the connective particle *na* 'with/and'), and both describe objectively similar negated

[1] The combination Neg1 {*ha-*} + 1st person singular subject prefix {*ni-*} is realized as *si-*, a "non-canonical" form that is widespread in Bantu (see Kamba Muzenga (1981, pp. 182-191).

events: not having something to say in response to a question. Yet the first is marked by a "subjunctive" verb and the second by an "indicative" verb, which have different negation markers. It would be hard to argue (without being circular) that there is a difference in correspondence with the "real world" here. In fact, the examples could be said to express the same "proposition". So how can we understand the difference in choice of verb forms? In order to do that we will have to look at how the various verbal markers used in these examples are integrated into the Swahili TAM system. I will start with a brief overview, then return to these examples in section 4.

3. Overview of the Swahili Tense-Aspect-Modality system

In this paper I will use the expression "Tense-Aspect-Modality" (TAM) to refer to a set of prefixes and suffixes that are attached to verb stems in Swahili, even though some of these affixes signal information that falls outside the scope of traditional definitions of tense, aspect, and modality (see Table 4 in section 3.2). I do so in order to distinguish these forms as a set from other verbal affixes (for example, the negation markers, subject and object prefixes etc.), and because "TAM" is the usual label used by Bantuists for such forms.

Swahili is an agglutinative language and the finite verb consists of a series of positional "slots", usually in the Bantu literature as shown in Table 1[2]:

Table 1.

Structure of the Swahili finite verb (adapted from Güldemann 1999, p. 546).

SLOT	Preinitial	Initial	Postinitial	Preradical	Radical	Final
FUNCTION	Neg1	Subject	TAM/Neg2	Object	Verb stem	TAM

As in other Bantu languages, different TAM markers are used depending on whether the event named by the verb stem is affirmed, called into question, or negated. The next three examples illustrate the affixes associated with the finite verb in Swahili.

(2) Affirmative (TAMs that cannot co-occur with a negation marker):

Initial	Postinitial	Preradical	Radical	Final
Subj.	TAM	(Obj.)	VStem	TAM
	Pfx.			Sfx.
tu-	*li-*	*wa-*	*on-*	*-a*
1pl.	Past	3pl.	see	indic.

'we saw them'

[2] For the sake of simplicity I omit "slots" that are irrelevant to the present topic.

The affirmative verb starts with an obligatory subject prefix followed by a TAM prefix, then an optional object prefix, then the verb stem, and at the end an obligatory TAM suffix. The TAM prefixes used in the affirmative structure cannot co-occur with a negation marker.

The next example shows structures in which the TAM markers signal information about events that are less than certain to occur. Unlike the affirmative markers illustrated in (2) above, these TAM markers may optionally co-occur with a negation marker.

(3) Optional negative (TAMs that may optionally co-occur with a negation marker):

a.

Preinitial	Initial	Postinitial	Prerad.	Radical	Final
(Neg1)	Subj.	TAM	(Obj.)	VStem	TAM
(*ha*-)	*tu*-	*ta*-	*wa*-	*on*-	*-a*
	1pl.	Future	3pl.	see	indic.

'we will (not) see them'

b.

	Initial	Postinitial	Prerad	Radical	Final
	Subj	(Neg2)	(Obj)	VStem	TAM
	tu-	(*si*)	*wa*-	*on*-	*-e*
	1pl.		3pl.	see	subjunc.

'let's (not) see them/so that we (not) see them etc.'

The verb in (3a) begins with the optional negation marker in "preinitial" position (henceforth called Neg1), and the rest of the structure is the same as the one illustrated in (2): subject prefix, TAM prefix, optional object, V stem, TAM suffix. In the second, subjunctive structure illustrated in (3b), a different negation marker is used (*si*- rather than *ha*-), and it comes after rather than before the subject prefix (i.e. in the "postinitial" position, henceforth called Neg2). There is no TAM prefix, and *–e* rather than *–a* appears in the Final slot.

Finally, structures illustrating the TAM markers that obligatorily co-occur with a negation marker.

(4) Obligatory negative (TAMs that must co-occur with a negation marker):

a.

Neg1	Subj.	TAM	(Obj.)	VStem	TAM
ha-	*tu*-	*ku*-	*wa*-	*on*-	*-a*
	1pl.	Past neg.	3pl.	see	indic.

'we didn't see them/haven't seen them'

b.	Neg1	Subj.	-	(Obj.)	VStem	TAM
	ha-	*tu-*	-	*wa-*	*on-*	*-i*
		1pl.		3pl.	see	gen.neg.

'we don't see them/won't see them'

(4a) is similar to the structure illustrated by the future tense verb in (3a), except that the preinitial Neg1 marker is obligatory rather than optional. The second example also starts with the obligatory Neg1 marker, but there is no TAM prefix, and the suffix is the "general negative" *–i* instead of the "indicative" suffix *–a* (found in 2, 3a and 4a) or the "subjunctive" suffix *–e* (found in 3b). I will illustrate the co-occurrence relationships between the TAM prefixes, the three suffixes, and the two negation markers in sections 3.2 and 3.3 below, after providing some historical information about the Swahili TAM system in relation to Bantu languages in general.

3.1. Diachrony of the Swahili TAM system

Historically, the Swahili TAM suffixes are older than most of the prefixes, and their "final slot" has been described as part of 'the oldest stratum of verbal morphology in Bantoid in general' (Güldemann 2003, p.185). With regard to realis, a century ago the renowned Bantu scholar Carl Meinhof described the suffixes in terms that sound like realis in his comparative Bantu grammar (Meinhof 1906, p. 64): *-a* 'wirklich' [real/actual], *-e* 'erwünscht, möglich' [desired, possible], *-i* 'nicht wirklich [not real/actual]'[3] More recent Proto Bantu reconstructions show a more complex picture in which a suffix **–a* with high or low tone may also have been used with some tenses in the negative as well as in the affirmative (see e.g. Kamba Muzenga 1981, p.341). There is general agreement, however, in reconstructing a suffix **-a* 'neutral, default' (Nurse 2008, p.261) and **-é* with some kind of "subjunctive" or "dependent" function; see e.g. Guthrie 1967, p.10; Meeussen 1967, p.110; Nurse 2008, p. 261). A suffix **-i* with negative function is also reconstructed for Proto Bantu by Kamba Muzenga (1981, p.340), but Meeussen (1967, p.110) lists it with a question mark, and Nurse (2008, p. 268) reports that negative *-i* occurs only in languages of the south and east of the Bantu region and is therefore probably of more recent origin.

As to the prefixes, they are usually traced to grammaticalization of what once was the first verb in an Auxiliary + Infinitive construction (see e.g. Güldemann 2003, p.185). The addition of TAM prefixes is a continual process in Bantu and one can often find different stages of grammaticalization ongoing within the same language (see e.g. Nurse 2003, p.94). The Swahili TAM prefixes are heterogeneous in origin: some derive from verbs (e.g. 'want' becomes the future tense, 'finish' becomes a perfective marker); some derive from copulas or other connective elements.

[3] Meinhof also noted the phonetic iconicity of the a-e-i series, with –e midway between the 'real' –a and the 'not real' -i.

With regard to the negation markers Neg1 (*ha-*) and Neg2 (*si-*), most Bantuists reconstruct at least two distinctive negation markers in pre- and postinitial position to Proto Bantu, though there are minor differences in the protoforms they posit (e.g. Meeussen 1967, p.108; Guthrie 1971, p. 10; Kamba Muzenga 1981, p. 24). Neg1 is labeled 'negative absolutive' (i.e., not relative clause) or 'indicative absolutive', and Neg 2 'negative subjunctive' (Meussen 1967, p. 108; Kamba Muzenga 1981, p. 24)[4].

Güldemann (1999, p. 564) sees pre- vs. post-initial negation as reflecting the following 'grammaticalization patterns whereby a morphotactic slot is derivable from a certain morphosyntactic source constellation' (p. 547, his Fig. 2):

	Illocutionary base as syntactic nucleus		*Propositional base as syntactic satellite*		
(1)	finite verb form	+	nonfinite verbal noun	>	positinial
(2)	finite verb form	+	finite dependent verb form	>	preinitial
(3)	illocutionary particle	+	finite dependent verb form	>	preinitial

In Swahili the relationship between TAM prefixes, suffixes, and negation markers is complex and does not lend itself easily to a binary split between 'realis' and 'irrealis', as I will show in the next two sections.

3.2. Relation between TAM prefixes, suffixes, and realis status

The Swahili prefixes and suffixes can be divided into 3 sets, based on whether or not they can co-occur on the same verb with a negation marker, as displayed in Table 2 below. Set I comprises prefixes that cannot co-occur with a negation marker. These convey a variety of notions, mostly having to do with location in time. Set II are prefixes (and one suffix) that may optionally co-occur with a negation marker. The Set III affixes must co-occur with a negation marker, i.e. negation is obligatory with these affixes. The table also displays the relationships between prefixes and suffixes. All prefixes must co-occur with a suffix (almost always *–a*), but not all the suffixes must co-occur with a prefix. (For details of the analysis represented in the table, see Contini-Morava 1989. Diachronic information is drawn from Nurse and Hinnebusch 1993 and Nurse 2008. PB=Proto Bantu; PNEC=Proto Northeast Coast Bantu.)

[4] Nurse (2008, p. 232) argues that preinitial Neg1 may be of more recent origin than postinitial Neg2, which he dates beyond Bantu to Niger Congo. Nurse hypothesizes that Neg1 occurred in indicative main clauses and Neg 2 elsewhere (including subjunctive, imperative, relative clauses, and other contexts), pp. 187-8.

Table 2.

Co-occurrence between TAM prefixes and suffixes [*–a* 'neutral verb marker'; *-e* 'occurrence questioned, somewhat probable'; *–i* 'occurrence negated, unspecified for time limitation'].

I. Not negated (may not co-occur with a negation marker):	II. Questioned (may or may not co-occur with a negation marker):	III. Negated (must co-occur with a negation marker):
<u>Dependent event:</u> *ka-* 'contingent' [inherited from PB] (suffix = either *–a* or *–e*) *ki-* 'backgrounded' [inherited from PB] (suffix = *–a*) <u>Time relevant:</u> *li-* 'past' [<copula] (suffix = *–a*) *me-* 'before deictic center' [<verb 'finish'] (suffix = *–a*) *na-* 'includes deictic center' [<conjunction 'and/with'] (suffix = *-a*) *a-* 'unspecified for time' [inherited from PB 'nonpast' tense] (suffix = *-a*) *hu-* 'indef. time' [<copula + infinitive] (suffix = *-a*)	*ta-* 'highly probable' (future) [<verb 'want'] (suffix = *-a*) *-e* 'somewhat probable' (subjunctive) (may occur either with no TAM prefix or with *ka-* 'contingent') [inherited from PB] *nge-* 'probability remote, conditional or counter-to-fact' [<concessive particle] (suffix = *–a*) *ngeli-* (or dialectal variant *ngali-*) 'prob. more remote, counter-to-fact condition' [<concessive particle + copula/past] (suffix = *–a*)	*-i* 'unspecified for time limitation' (may not co-occur with any TAM prefix) [inherited from PNEC Bantu] *ja-* 'limited in time, affirmative more likely, not-yet' [<verb 'come'] (suffix = *–a*) *ku-* 'limited in time, affirmative less likely, past/perfective neg.' [<infinitive in complex V structure] (suffix = *-a*)

Assuming that the co-occurrence relationships between prefixes and suffixes displayed in the table reflect relationships of semantic compatibility or contrast among their meanings, we may draw some conclusions with regard to their realis status. Let us first consider the suffix *–a*.

As indicated in the table, the suffix *–a* co-occurs with all the prefixes, regardless whether their meanings refer to time, uncertainty of occurrence, or negation. Whether or not Meinhof was right to surmise that *–a* meant 'realis' in Proto-Bantu, it clearly does not signal this meaning in Swahili. (The frequent label 'indicative' is equally problematic, given the fact that *–a* co-occurs with the conditional and counter-to-fact conditional prefixes *nge-* and *ngeli-*.) *–a* is evidently neutral to the various distinctions made by the prefixes. In fact, the suggestion has been made (by Okhotina and Gromova 1975) that *–a* should not even be analyzed as a suffix at all, but rather as part of the verb stem. According to these scholars, *-a* 'carries no grammatical information' (p. 5) and merely marks 'a formal feature of category membership (verbness) which is manifested on the phonetic level' (p. 9). They provide various morphophonological arguments in support of this position, such as the fact that *–a* is retained before consonant-initial noun-derivational suffixes but deleted before vowel-initial suffixes, and that *–a* is retained with reduplicated verb stems such as *-pigapiga* 'to beat unmercifully' (from *–piga* 'beat', p. 4). On the other hand they acknowledge that *–a* is not retained before the verb-derivational passive suffix *–w-* or the causative suffix *–y-* (p. 8), which weakens the morphophonological argument. Furthermore, treating *–a* as a non-segmentable stem vowel entails positing that all verb-derivational suffixes also coincidentally end in *–a*, as well as all non-derived verbs[5]. It is simpler to regard the verb-derivational suffixes as attached to the stem before the verb-forming suffix *–a*, as most accounts of Bantu verb structure do (see e.g. Meeussen 1967, pp. 108-111). Moreover, there is no reason why 'verbness' could not be regarded as a type of grammatical information that would motivate the analysis of *–a* as a meaningful sign. In any case it is clear from the distribution of *–a* that its meaning must be more general than 'realis'.

One might be tempted to attribute the meaning 'realis' to the TAM prefixes in Set I, based on the fact that they cannot co-occur with a negation marker. However, all these prefixes can be used both in realis contexts and in contexts where no claim of actual occurrence is being made. Space does not allow me to illustrate this point with all of them, but here is an example of the "present" tense *na-* in a counter-to-fact context:

(5) *A-**nge**-kuwa ameshaolewa a-**na**-wafanyia kazi wakwe zake.* [Muhando 1972, p. 10]

'If she were already married (*nge-* 'prob. somewhat remote') she would be working (*na-* 'event time includes deictic center') for her in-laws.'

[5] This applies to all Bantu-inherited verbs. Some verbs borrowed from Arabic end in other vowels, which unlike *–a* are never replaced by the subjunctive *–e* or the negative *–i*.

In example (5) a contrary-to-fact context is set up by *nge-* 'occurrence questioned, probability remote' in the first clause, which then serves as the deictic center for the relative tense *na-* in the second clause. If the first clause were omitted, the normal interpretation of the second clause would be 'she is working for her in-laws', i.e. the default deictic center is the (actual) moment of speaking (see Rapaport et al., 1994). Analogous examples can be found with the other Set I prefixes.

Instead of attributing the meaning 'realis' to the Set I prefixes therefore, it would be best to regard them as unmarked for this semantic feature. The message of realis, where relevant, is pragmatically inferred from (a) use of forms that do not explicitly signal irrealis, and (b) the fact that 'realis' is the default assumption unless context suggests otherwise, as it does in example (5). This point resembles Palmer's (2001, p. 64) description of Declarative modality as unmarked: '[i]t simply asserts without indicating the reasons for that assertion or the speaker's commitment to it'.

The affixes in Set II have meanings that are most closely connected to irrealis: that is, they are used to refer to events/states of affairs whose occurrence is called into question. One point to be emphasized with regard to the meaning 'occurrence questioned' is that it reflects a speaker's assessment of the situation being described, not its objective truth, as pointed out by Palmer (2001, pp. 3-4) with regard to the definition of irrealis. However, the semantic substance 'occurrence questioned' is deliberately vague with regard to the traditional distinction between "deontic" and "epistemic" modality. As in many other languages, in Swahili the same forms can be used to express either assessments of likelihood or desires, wishes, obligations etc. The question whether a particular use is to be interpreted as "epistemic" or "deontic" depends on context and is not directly signaled by the TAM markers themselves.

Within Set II, the suffix *–e* is in complementary distribution with the prefixes *ta-*, *nge-* and *–ngeli-* (all of which co-occur with *–a* rather than *–e*), and these affixes together subdivide the domain of 'occurrence questioned/irrealis' in terms of degree of probability that the event in question might occur[6]. At the top of the scale is *ta-*, used to predict highly probable events (and usually described as the "future tense"). The suffix *–e*, usually labeled "subjunctive", indicates a lower, but still positive assessment of probability. The lower-probability forms *nge-* and *ngeli-* (or its dialectal variant *ngali-*) are in a relationship of inclusion: *nge-* covers the lower range of the scale of probability, ranging from suppositional to counter-to-fact conditions, whereas *ngeli-* refers only to counter-to-fact conditions [7]. The following table shows the meanings of these forms along with the most frequent messages inferred from their use.

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[6] There is only one TAM prefix that the suffix *–e* can co-occur with: the Set I 'contingent' prefix *ka-*, which is also the only prefix in the system that can co-occur with a suffix other than *–a*. When used with *–a*, *ka-* usually conveys the message of 'narrative tense' or 'consecutive', whereas when used with *–e*, it refers to a desired/expected event whose occurrence depends on that of a preceding desired/expected event, such as the second of two commands.

[7] This analysis is similar to that proposed by Saloné (1983, p. 92), who analyzes *nge-* as an unmarked marker of unreality, and *ngeli-* /*ngali-* as marked for counter-to-fact/low likelihood. However, Saloné does not discuss the suffix *–e* at all and does not commit herself to an analysis of *ta-* (p. 116).

Table 3. Semantic relationships and inferences from the Set II (not-affirmed) prefixes and suffix *–e* (all share meaning "occurrence questioned/uncertain to occur"):

Signal	Meaning	Inferences
ta-	highly probable	future, future-in-past, speculation about likely event
-e	somewhat probable	speculation about possible event, obligation, purpose, consequence, permission/prohibition, jussive, polite command,etc.
nge-	prob. remote	suppositional or counter-to-fact condition (both protasis and apodosis), wish ("if only…"), unrealized obligation ("should have"), etc.
ngeli-	prob. more remote	counter-to-fact condition (both protasis and apodosis), unrealizeable wish

I cannot do justice to the full range of usage of these forms here, but the following examples illustrate the contrast between the "subjunctive" suffix *–e* and the other Set II affixes. I focus on *–e* because it is used in one of the apparently synonymous examples introduced at the beginning of this paper (1a in section 2).

(6) *-e* 'somewhat probable' vs. *ta-* 'highly probable':

*'Wote wawili walipanga mpango—labda—kama hivi: Bw. Wasiwasi a-tumi-**e** mali yake Bw. Hafifu kwa jina lake yeye Bw. Wasiwasi, bali matumizi hayo ya-w-**e** kwa mashauri na Bw. Hafifu na kuridhi kwake;… --mpaka binti yake Bw. H, Mwanatenga, yule pale a-fik-**e** umri wa miaka 21; au a-toke-**e** mume msuluhifu a-mw-o-**e** kabla kufika umri huo. Hapo tena—kwa kutokea mojawapo katika mawili hayo, au yote mawili kwa wakati mmoja—mali i-**ta**-tok-a katika kabidhi ya Bw.*

Leonard (1980) analyzes *–e* as meaning 'high likelihood of occurrence' and *nge-* as 'low likelihood', but he does not discuss *ta-*or *ngeli-/ngali-*. The present analysis agrees with Saloné that *ngeli-/ngali-* expresses a lower degree of probability than *nge-*, and agrees with Leonard that *–e* expresses a higher degree of probability than *nge-*, but places them all on a scale of degree of probability, with *ta-* at the top of the scale.

*W, i-w-**e** katika kabidhi ya Mwanatenga mwenyewe, au Mw. na mumewe.'*
[Abdulla 1974, p. 74]

'They together made a plan—maybe—like this: Mr. Wasiwasi would use (-*e*) Mr. Hafifu's money in his own name, but that use would be (-*e*) with Mr. H's advice and consent; … --until Mr. H's daughter Mwanatenga over there, would reach (-*e*) the age of 21; or [until] a suitable husband would appear (-*e*) [and] marry/so as to marry (-*e*) her before reaching that age. Then—on the occurrence of one of these things, or both at the same time—the wealth would leave (*ta*-) the control of Mr. W, [and so] become (-*e*) under the control of Mwanatenga herself, or Mwanatenga and her husband.'

Here the detective is reconstructing a conspiracy for laundering Mr. Hafifu's money, which was acquired from smuggling: Mr. Wasiwasi will play the role of front man so Mr. Hafifu can hide his identity, but when Mr. Hafifu's daughter comes of age, she will inherit the money. The detective uses *–e* 'occurrence questioned, somewhat probable' for all the imagined events until the main one: the money passing from Mr. Wasiwasi to Mr. Hafifu's daughter. Mr. Hafifu intends for this to happen no matter what, so it is marked by *ta*-, showing high probability.

(7) -*e* 'somewhat probable' vs. *nge*- 'probability somewhat remote':

*…hakuusahau urithi wa mateso alioachiwa na marehemu mama yake. Ah, mpumbavu yule! (Mungu a-m-rehemu[-**e**][8] alikolala.) Kwa nini aliganda kwa Fuad ilhali hatakiwi? Kwa nini a-si-ondok-**e** kutafuta riziki zake? Laiti a-**nge**-fanya hivyo mambo ya-**nge**-kuwa vingine. Lakini wapi! Alihiari kunyanyaswa, kutengwa, kuhamishwa.* [Mohamed 1976, p. 23]

…she didn't forget the inheritance of pain that her late mother had bequeathed to her. Ah, that fool! (May God bless her (-*e*) where she lay.) Why had she cleaved to Fuad when she wasn't wanted? Why not leave/should she not leave (neg.-*e*) and seek her destiny? If only she had done that (*nge*-), things would have been (*nge*-) different. But no! She chose to be disrespected, separated, kicked out.

Here a woman is thinking about her late mother's unhappy marriage. There are two examples of *–e*: a wish (may she rest in peace), and a question about something the mother could or should have done (seeking her destiny instead of staying with her unloving husband). The events marked by *nge*- are more clearly counter to fact.

As for the Set III affixes in Table 2 (the ones that obligatorily co-occur with a negation marker), the suffix *–i* cannot co-occur with any TAM prefix, including the two prefixes that are also used exclusively in the negative. These three signs carve up the

[8] -*rehemu* 'bless' and other verbs borrowed from Arabic are invariant in form and their final vowel is never replaced by a TAM suffix. The fact that this verb is a subjunctive can be inferred from the absence of TAM prefix and from the jussive context.

semantic domain of 'negated occurrence' as shown in Table 4 (see Contini-Morava 1989 for detailed discussion):

Table 4. Semantic relationships among the Set III (negated) prefixes and suffix *–i* (all share the meaning 'occurrence negated'):

Signal	Meaning	Inferences
ja-	occurrence negated time limited, affirm. more expected	high contrast with expectation of affirmative, continued opportunity for affirmative beyond time limit ("not yet")
ku-	occ negated, time limited, affirm. less expected	some contrast with expectation, but opportunity for affirm. does not extend beyond time limit ("past/perfect neg")
-i	occ. negated, unspec. for time limit or expect. of affirmative	low contrast with expectation, neg. state of affairs could continue indefinitely; generalized, state-like negation as opposed to context-bound, event-like negation ("present negative")

Here again I will focus on the form used in the pair of examples we started out with: the TAM prefix *ku-* and its contrast with the other Set III affixes.

(8) *ku-* 'neg., temp. bounded, affirm. less likely' vs. *ja-* 'neg., temp. bounded, affirm. more likely' :

*'Doto, babu! Nilipokuwa nikirudi, njiani niliona watu wanajenga banda kama wanajizatiti kwa ngoma leo joini. Basi kama unatka kwenda twaa hizi pesa ukatumie.' Doto h[a][9]-a-**ku**-jibu[-a] cho chote wala h[a]-a-**ja**-geuk-a kumtazama.* [Farsy 1960, p. 20]

'Hey, Doto! On my way home, on the road I saw some people building a pavilion as if they were getting ready for a party this evening. So if you want to go, take this money and use it.' Doto didn't answer (*ku-*) and didn't [even] turn around (*ja-*) to look at her.

In this passage a young woman is speaking to her sister, who usually likes to party and is always asking for money. The speaker, though usually frugal with money, has invited

[9] The final vowel of the Neg1 marker *ha-* is deleted before a vowel-initial subject prefix.

her new boyfriend over and wants to get her attractive sister out of the house. Both the event of answering and that of turning to look refer to negated events that could have occurred in the past, but *ku-* is more neutral, whereas *–ja* suggests an extra nuance of surprise, which I have tried to express by adding the word "even" to the English translation.

(9) *ku-* 'neg., temp. bounded, affirm. less likely' vs. *–i* 'neg., unspec. for time limit/affirm. expectation':

*…ilipofika saa sita mchana waliambiwa waende makwao. Maryam h[a]-a-**ku**-ju-a wapi pa kwenda. Baba yake ndio kisha kwenda zake, na mji h[a]-a-u-ju-**i**, na hakuna wa kumwuliza.* [Hilal 1971, p. 30]

…when noon arrived they were told to go on home. Maryam didn't know (*ku-*) where to go. Her father was already gone, and she didn't know (*-i*) the city, and there was no one to ask.

Here there are two negations of the verb 'to know', both understood as referring to the past, but they apply to different spans of time: the time when not knowing where to go would be relevant is shortly after the students have been told to go home, whereas the time of not knowing the city is open-ended and describes a persistent state.

With regard to realis, one can make the same argument for the Set III affixes as that made earlier for the Set I affixes: that realis should be regarded as a pragmatic inference, not part of their meanings. As in the case of the Set I affixes, 'realis' is the default interpretation for the Set III affixes, in the indirect sense that 'the non-occurrence of the event is regarded as the observed reality' (Elliott 2000, p.78, following Mithun 1995, p. 386). However, they too can be used in non-realis contexts. For example:

(10) *Basi sasa ni-fanyiz-ie mikate nataka ni-safiri[-e], ni-end-e mbali ni-ka-tafut-e mtu mwingine aliye Juha kama wewe. Ni-ki-mw-on-a u-ta-kuw-a mke wangu vivi hivi. La, **si[=ha- + ni-]ku-mw-on-a** nitakuacha.* [Abunuwas 34-5]

So now make me (*-e* 'somewhat probable') some bread, I want to travel (*-e* 'somewhat probable'), so that I go (*-e* 'somewhat probable') far away and look for (*ka-* 'contingent' + *-e* 'somewhat probable') another person who is [as big] a Fool as you. [If] I see one (*ki-* 'backgrounded'), you will be (*ta-* 'highly probable') my wife just like now. Contrariwise, [if] **I don't see one/haven't seen one** (*ku-* 'negated, limited in time') I will divorce you (*ta-* 'highly probable').

Here it is clear that the *ku-* marked negated event of seeing a person as foolish as the speaker's wife is hypothetical, not 'observed reality' (and in fact he winds up encountering a greater fool, so it never corresponds to reality).

In summary, the only affixes in the Swahili TAM system that are marked for realis are the affixes of Set II, which signal that the event they refer to is called into question, hence

irrealis, and further specify its degree of probability of occurrence. The other TAM affixes, including the ones that are obligatorily negated, are neutral or unmarked with regard to realis status. The picture becomes more complicated, however, when one looks at the relationship between the various TAM affixes and the two negation markers Neg1 (*ha*-) and Neg2 (*si*-). We turn to these in the next section.

3.3. Relationships between the TAM affixes and the negation markers

Table 5 below shows the co-occurrence relationships between the two negation markers Neg1 (*ha*-) and Neg 2 (*si*-) and the TAM affixes of Sets II and III. (Recall that the Set I affixes cannot co-occur with any negation marker.)

Table 5.

Swahili TAM affixes, co-occurrence with negation markers. [white box = co-occurs only with Neg1 *ha-*; shaded = co-occurs only with Neg2 *–si-*; shaded box = co-occurs with either Neg1 or Neg2]

I. Not negated (may not co-occur with a negation marker):	II. Not affirmed (optionally co-occur with negation marker):	III. Negated (must co-occur with a negation marker):
<u>Dependent event:</u> *ka-* 'contingent' *ki-* 'backgrounded'	*ta-* 'highly probable, future' [negated by *ha-*]	*-i* 'unspecified for time limitation' (may not co-occur with any TAM prefix) [negated by *ha-*]
<u>Time relevant:</u> *li-* 'past' *me-* 'before deictic center' *na-* 'includes deictic center' *a-* 'unspecified for time' *hu-* 'indefinite time'	*-e* 'somewhat probable' [negated by *si-*]	*ja-* 'affirmative more likely, not-yet' (prefix, must co-occur with suffix *–a*) [negated by *ha-*]
	nge- 'probability somewhat remote' [negated by *ha-* or *si-*] *ngeli-* 'probability more remote' [negated by *ha-* or *si-*]	*ku-* 'affirmative less likely, past/perfective neg. (prefix, must co-occur with suffix *–a*) [negated by *ha-*]

As may be seen from the table, the affixes in Set II are alike in that all of them may optionally co-occur with a negation marker, but they differ in their privilege of occurrence with the two negation markers. The suffix *–e* 'occurrence questioned, somewhat probable', can only be used with Neg2 *–si-*, the prefix *ta-* 'highly probable' can only be used with Neg1 *ha-*, whereas the low-probability prefixes *nge-* and *ngeli-* can be used with either Neg1 *ha-* or Neg2 *–si-*. The Set III affixes on the other hand,

which obligatorily co-occur with a negation marker, must always be used with Neg1 *ha-*[10].

Although not entirely complementary, the distribution of Neg1 (*ha-*) and Neg2 (*si-*) suggests that they differ in meaning, and this is reflected in the labels "indicative" vs. "subjunctive" that are often given to them (see section 3.1 above). Güldemann (1999, p. 571) traces Neg1 (preinitial) marking in Bantu to the pragmatic function of negation that was described by Givón (1975, p. 108f) as follows: 'negatives are uttered in a context where corresponding affirmatives have already been discussed, or else where the speaker assumes the hearer's belief in—and thus familiarity with—the corresponding affirmative.' Following Horn (1989), Güldemann describes this as 'metalinguistic' negation, 'directed at a proposition already in the discourse model' (quote from Horn 1989, p. 203, in Güldemann p. 575). As to Neg2 (postinitial), Güldemann points to the fact that negation can also occur in linguistic contexts that 'do not instantiate an illocution' (p. 574). Güldemann agrees with Horn (1989) that besides 'metalinguistic' negation, another type of negation must also be recognized, namely 'descriptive' negation, 'standing in a symmetrical relation to its affirmative counterpart' (575). Descriptive negation, unlike metalinguistic negation, is not necessarily linked to the illocutionary act of the utterance, and he equates this with Neg2.

Nurse (2008, pp. 187-8) disagrees with Güldemann's term 'descriptive' for negatives outside indicative main clauses, but his account of the difference between Neg1 and Neg2 is otherwise similar to Güldemann's:

> The primary negative [i.e. Neg1], involving as it does denial of something that went before, might be expected to occur at the edge of the verb (typically the left-hand edge in SVO languages), as it refers back to the foregoing affirmation, and forward, by having scope over the whole verbal proposition following... The scope of the secondary [Neg2] type can be seen by considering what it precedes. In languages such as Swahili (G42), where it contrasts with the pre-initial negative, the post-initial negative is not followed by tense-aspect markers, the TA slot being blank when the post-initial negative occurs. Its real scope is the following stem, simple or macro [macro=inflectional stem, i.e. derivational stem + final vowel + object prefix] (193-4)

Whichever terms one uses however, the distinction between denial of a previously mentioned or expected affirmative and negation whose scope is only the following stem does not really fit the data of Swahili. For one thing, both *ha-* and *si-* can be used in contexts where there is negation of a previously mentioned or expected affirmative:

(11) a. *Basi Sultani akamtafuta tena* ***a-si-mw-on-e****.* [Anonymous 1966, p. 107]

[10] Neg2 (*si-*) has an additional use not shown in the table, to negate a relativized verb, such as *a-**si**-ye-sem-a* [3sgSubject-Neg2-animate sg. relative pronoun-'speak'-neutral TAM suffix] 's/he/one who does not speak'. With negated relativized verbs no TAM prefix can be used.

So the Sultan searched for him again [but] **he didn't see him** (*si-* + *-e* 'somewhat probable').

b. *Akatoa merikebu zake ziende katika dunia yote kumtafuta binti yake;* ***ha-zi-ku-mw-on-a****, zikarudi.* [Anonymous 1966, p. 151]
So he sent out his ships to go throughout the world to look for his daughter; [but] **they didn't see her** (*ha-* + *ku-* 'negated, limited in time'), so they returned.

In both of these examples the context sets up an expectation that an event of seeing might occur (the Sultan's pursuit of a thief in 11a, and the ships' search for the Sultan's daughter in 11b), and in both cases the expected occurrence of seeing is negated, but the first uses a *si*-marked verb and the second uses a *ha*-marked verb. (This pair of examples is similar to those introduced at the beginning of this paper. We will return to examples such as these in the next section.)

Another problem with the claim that Neg1 (*ha-*) and Neg2 (*si-*) differ in scope is that, as mentioned earlier (and pace Nurse), the TAM prefixes *nge-* and *ngeli-* can co-occur with either *ha-* or *si-* and it is hard to see any difference in scope between them:

(12) a. *Kitu gani mapenzi; buyu la asali, ama misumari ya nyuki? Rehema hakutambua. Lakini katu* ***h[a]****-a-****nge****-m-samehe mtu aliyemwachia zigo tupu la maisha.* [Mohamed 1976, p. 23]

What is love; a cup of honey, or the stings of the bees? Rehema didn't know which. But she never would forgive (*ha-nge*) the person who had left her a life of pure misery.

b. *Kwa mara nyingine tena wasiwasi ulimfanya amjasusi vilivyo yule mtu. Lakini pia hakuona ishara yo yote ya uovu, wala dalili ya hatari. Na kwa hakika, ilionesha kama kwamba a-****nge****-mw-omba ampeleke huko Mwembeshomari wakati ule ule, a-****si-nge****-kataa.* [Mohamed 1976, p. 32]

Once again doubt made her assess what that man was like. But still she did not see any hint of evil, nor sign of danger. And indeed, it seemed like if she were to ask him (*nge-*) to take her to Mwembeshomari right then and there, he would not refuse (*si-nge*).

Based on the co-occurrence between *ha-* and *–si-* and the various TAM markers, one could perhaps analyze *ha-* as indicating a stronger degree of confidence in the (negated) assertion being made, and *–si-* as indicating a weaker degree of confidence, or less forceful assertion. Thus *ha-* is obligatory with the Set III affixes that do not explicitly call an event into question—hence are usually interpreted as 'realis'—and with the prefix at the top of the probability scale in Set II (*ta-*, often described as the "future tense"). *si-*

is used only with lower probability forms (*–e*, *nge-* and *ngeli/ngali-*), and with relativized verbs, which make no assertion at all.

Although it may seem odd for *ha-* to also co-occur with the prefixes at the bottom of the probability scale (*nge-* and *ngeli-*), the difference in forcefulness between *ha-* and *–si-* shows up even in these overlapping contexts, such as the examples in (12) above. In (12a), negated by *ha-*, the protagonist is quite certain that she would never forgive the man who made her life miserable; her certainty is reinforced by the adverb *katu* 'never, not at all'. In (12b), negated by *si-*, on the other hand, she is merely speculating about what might (not) happen. The marked, emphatic status of *ha-* with the low-probability TAM prefixes is also reflected in the fact that it is used far less frequently than *si-* with these prefixes. Although I have not done a large-scale study of their distribution, in the book from which examples (12a) and (b) were taken (Mohamed 1976), there are only two examples of *ha-* with *nge-* or *ngeli-* (example 12a is one of them), but 30 of *si-*. In two other novels also written by native speakers of Swahili (Yahya 1973 and Abdulla 1975), only *si-* and never *ha-* is used to negate *nge-* or *ngeli-*.

In summary, the two negation markers Neg1 (*ha-*) and Neg2 (*si-*) do not fit neatly with the realis/irrealis divide. Although the distribution of *si-* conforms reasonably well with 'irrealis'/non-assertion, *ha-* is not limited to 'realis' contexts and instead can also be used to refer to low-probability conditionals. Rather than analyzing the negation markers as "indicative" vs. "subjunctive", or claiming that they differ in scope, they appear to differ in the degree of forcefulness with which the negation is made. In general, greater forcefulness is associated with realis contexts and with asserted rather than presupposed information, but *ha-* can also be used to emphasize the denial of a hypothetical event.

4. The realis categorization of non-events

Now that we have looked at the semantic relationships among the prefixes, suffixes, and negation markers, we are in a position to return to the minimal pair I showed at the beginning of this paper. Here are the examples again, this time with fuller context:

(13) a. '*Nikikuoa mimi, aibu yako itazibika, na wewe utakuwa Mwana-wa-Shimowazi na heshima kubwa kama hiyo.*'
Bwana Msa alisikiliza yote hayo kwa tuo na mazingatio makini…
*'Endelea, mama,' a*lisema.
'Bwana Msa, niliduwaa, *ni- si- w- -e na*
1sgSbjNeg2 be occ.qstioned with
la kusema,' Mwanatenga aliendelea. 'Nilitaka nipate nafasi ya kufikiri mambo yale.' [Abdulla 1974, p. 31]

'If I marry you, your shame will be ended, and you will become the Mistress-of-Shimowazi with all that great respectability.'
Mr. Msa listened to all this calmly and intently…
'Continue, ma'am,' he said.

'Mr. Msa, I was dumbfounded, I didn't have (*si-* + *-e*) [anything] to say,' continued Mwanatenga. 'I wanted to get a chance to think about those things.'

b. '*Bwana O alimtazama Saidi kitambo, kisha akanitazama na miye, akacheka kidogo, kisha akamwuliza Saidi, 'Saidi, unataka kumowa Mwanatenga?' Saidi akainamisha uso wake chini, hana la kusema. Bwana O akanizungukia mimi. 'Mwanatenga mama,' aliniita, na hivyo ndivyo daima anavyoniita, 'unataka kuolewa na Saidi?' Na mimi kadhalika*

si[=ha+ni]	*ku-*	*w-*	*-a*	*na*
Neg1+1sgSubj	PastNeg	be	neutral	with

la kujibu. Yeye akasema…' [Abdulla 1974, p.33]

'Mr. O looked at Saidi for a while, then he looked at me too, and laughed a little, then he asked Saidi, 'Saidi, do you want to marry Mwanatenga?' Saidi cast his face down, having nothing to say. Mr. O turned to me. 'Mwanatenga ma'am,' he called me, and that's what he always calls me, 'do you want to marry Saidi?' And I too didn't have (*ha-* + *ku-*) [anything] to answer. He said,…'

From a logical standpoint all negated events could be claimed to be irrealis, because they describe states of affairs that fail to correspond to the real world. From a pragmatic-communicative point of view, however, speakers do not usually bother to mention something that doesn't happen unless there is some chance or expectation that it could happen. Yet some ways of expressing negation may foreground the contrast between expectation and reality more than others. This makes it possible to present the same state of affairs from different points of view. *ha-* + *ku-* + *-a* confidently negates the occurrence (by means of *ha-*) and indicates that its chance of occurring is limited in time (by means of *ku-*)—therefore its frequent interpretation as "past negative". *si-* + *-e* on the other hand explicitly calls into question the event's occurrence and suggests that it would have been somewhat likely to occur (by means of *–e*) and negates it with the less assertive negation marker *si-*, so brings it into the realm of uncertainty where alternatives may be weighed. In example (13a), the speaker is describing her reaction to a marriage proposal from Mr. Wasiwasi, who she has always thought was her father. When prompted to continue with the story, she describes herself as dumbfounded and not having anything to say, using *si-* + *-e* on the verb 'have'. She then explains that she needed time to figure out how to respond. The use of *si-* + *-e* here both highlights the contrast with expectation (Mr. Wasiwasi's proposal clearly demands a response), and suggests a link with the immediately preceding verb *niliduwaa* 'I was dumbfounded'—her failure to respond can be seen as a result of being dumbfounded.

Example (13b) also presents a (lack of) response to a surprising question. The same speaker, Mwanatenga, has been secretly in love with Mr. Wasiwasi's clerk Saidi. Mr. O, an eccentric friend of Mr. Wasiwasi's who lives in a shed on his property, suddenly pops out with the question whether Saidi wants to marry Mwanatenga, which Saidi is at a loss

to answer, and then Mr. O asks Mwanatenga the same question. Here, too, there is an expectation of a response, but the speaker presents her failure to respond in more neutral terms, with *ha-* + *ku-* + *-a*, as a negated event whose opportunity to occur is limited in time. This allows the negated event to be incorporated into a narrative sequence: Mr. O asks Saidi, Saidi fails to respond, then Mr. O asks Mwanatenga, she fails to respond, then Mr. O says something else.[11] Although the event of not having anything to say in (13b) is linked to the preceding context, it does not have the close causal/resultative connection to an immediately preceding verb that the *si-* + *-e* marked verb in (13a) has.

Examples (13a) and (13b) show that objectively similar states of affairs can be "coded" in different ways with regard to realis: the negated verb in (13a) is explicitly marked as uncertain to occur, i.e. as irrealis, whereas the one in (13b) is coded with a form that is not marked for realis and is therefore interpreted (by default) as realis. The difference in coding is motivated by differences in the relationships between these (non-) events and the discourse context[12].

It could be argued that one pair of examples may be exceptional, or that the above examples were chosen expressly to support the present argument. In order to provide further evidence for the claim that the abovementioned differences between *si-* + *-e* and *ha-* + *ku-* + *-a* are systematic and not just anecdotal, let us look at some quantitative data comparing their use in narrative discourse.

4.1. Quantitative evidence for differences in irrealis coding

Direct comparison of *ha-* + *ku-* + *-a* and *si-* + *-e* in discourse is complicated by the fact that the latter has a wider range of usage than the former. As illustrated by Table 3 and examples (6) and (7) in section 3.2, the "subjunctive" *–e* (in either affirmative or negative) can be used for jussives, speculatives, purposives, etc., in addition to contexts such as (13a) where it can be construed as referring to a past negative. On the other hand, 'past negative' is the usual interpretation of *ha-* + *ku-* + *-a.* In order to compare them with regard to contexts such as (13), I collected all examples of *ha-* + *ku-* + *-a,* and only the examples of *si-* + *-e* that could be interpreted in this way, from a book of folktales (Anonymous 1966 [1935]), a total of 129 examples of *ha-* + *ku-* + *-a* and 43 examples of *si-* + *-e* in the relevant reading. The examples were then compared with relation to contextual variables that bear on the hypothesized semantic differences between these forms. A difference in statistical skewing in the predicted direction provides evidence for the hypothesized meaning differences.

[11] For more detailed discussion of the relationship between negated events and narrative in Swahili, see Contini-Morava (1990).

[12] Some Swahili scholars have been so puzzled by the use of the "subjunctive" in examples such as (13a) that they have argued that this usage of *–e* is not a subjunctive at all, but rather a reflex of a now-obsolete perfective marker. In order not to distract from the main argument here, I address this issue in the Appendix to this paper.

One difference between examples (13a) and (13b) is that the *si-* + *-e* marked verb in (13a) follows after another finite verb (suggesting a causal/resultative connection between them, consistent with the irrealis meaning of *-e*), whereas in (13b) the *ha-* + *ku-* + *-a* marked verb is the first (and only) verb in the sentence. Although it is not the case that *si-* + *-e* must always follow another verb, one might expect it to favor such contexts more than *ha-* + *ku-* + *-a* would. The following table compares them with regard to this variable.

Table 6. Comparison of *ha-* + *ku-* + *-a* and *si-* + *-e* with regard to position in sentence[13]. Data: Anonymous 1966 [1935].

	1st main V in S	not 1st main V	Total
ha- + *ku-* + *-a*	72 (56%)	57 (44%)	129 (100%)
si- + *-e*	13 (30%)	30 (70%)	43 (100%)

As may be seen from the table, *ha-* + *ku-* + *-a* is much more likely than *si-* + *-e* to be the first main verb in a sentence. This is consistent with the marked status of *si-* + *-e* as calling into question an event's occurrence, and so suggesting a relationship of purpose or result with a preceding verb, as opposed to the more neutral reporting of *ha-* + *ku-* + *-a.*

The next variable to be considered is co-occurrence with an explicit time specification, either clausal (e.g. *alipofika* 'when he arrived') or adverbial (e.g. *leo* 'today'). Since the meaning of *ku-* refers to time whereas that of *–e* does not, we may expect them to differ with respect to contexts in which an explicit time reference is made. Table 7 shows the results of this count.

[13] Relativized verbs and infinitives were ignored for this count, e.g. in a sentence like *Simba aliposikia vile **hakusaili** tena* [Anonymous 1966, p. 66] 'When the lion heard this **he did not ask** again', the negated verb *hakusaili* 'he did not ask' was counted as the first (main) verb in the sentence. Also, quotations were treated as separate sentences, so in e.g. *Abunuwas akanena, **haikuzaa**?* [Anonymous 1966, p. 4] 'Abunuwas said, **didn't it give birth**?' the introductory verb *akanena* 'he said' was not counted as part of the same sentence.

Table 7. Comparison of *ha-* + *ku-* + *-a* and *si-* + *-e* with regard to presence vs. absence of explicit time specification. Data: Anonymous 1966 [1935].

	+ time specification	- time specification	Total
ha- + *ku-* + *-a*	28 (22%)	101 (78%)	129 (100%)
si- + *-e*	2 (4.7%)	41 (95.3%)	43 (100%)

As shown in Table 7, although explicit time specifications occur only in a relatively small number of examples in the text, *si-* + *-e* is far less likely than *ha-* + *ku-* + *-a* to co-occur with a time specification.

The last variable investigated was presence vs. absence of a pronominal object prefix. In Swahili, an object prefix may optionally appear on the verb immediately before the verb stem (see example verb structures in section 3), and it may co-occur with a co-referential object NP. In the case of inanimate objects, the object prefix is only used when the object is definite. With animate objects, it is usually used regardless of definiteness, but it can be omitted if the object is both indefinite and non-specific. The connection between presence/absence of an object prefix and coding of an event as neutral to realis (with *ha-* + *ku-* + *-a*) vs. irrealis (with *si-* + *-e*) is as follows. As mentioned earlier, 'realis' is the default assumption for most Swahili TAM markers unless the context suggests otherwise. Speakers may be expected to provide more detailed information about events that are connected to a time line—even if they did not occur—than about (non-occurring) events that are merely speculated about[14]. Therefore one may expect *ha-* + *ku-* + *-a* to show a greater skewing than *si-* + *-e* toward use vs. non-use of an object prefix. As we see from Table 8 below, this prediction is borne out.

Table 8. Comparison of *ha-* + *ku-* + *-a* and *si-* + *-e* with regard to presence vs. absence of object prefix[15]. Data: Anonymous 1966 [1935].

	+ Object Prefix	- Object Prefix	Total
ha- + *ku-* + *-a*	44 (34%)	85 (66%)	129 (100%)
si- + *-e*	9 (21%)	34 (79%)	43 (100%)

[14] For example, Hopper and Thompson (1980, p. 252) include presence of an individuated object, along with realis status, as components of "high transitivity", clauses, which in turn are associated with foregrounded events in discourse (p. 234).

[15] The "reflexive" prefix *ji-* was counted as an Object Prefix for the purposes of this count.

Although the skewing is less extreme than that shown in the preceding two tables, there is nevertheless a greater tendency to mark *ha-* + *ku-* + *-a* events with an object prefix than *si-* + *-e* events.

In summary, the use of *si-* + *-e* as opposed to *ha-* + *ku-* + *-a* for negated events that could have occurred in the past reflects a difference in the way such events are presented. The irrealis *si-* + *-e* raises the possibility of alternatives and/or suggests a causal connection between the *si-* + *-e* marked event and the preceding event, whereas *ha-* + *ku-* + *-a* is neutral with regard to realis status, and its temporal meaning suggests a relationship to the narrative time line. The statistical favoring of *ha-* + *ku-* + *-a* over *si-* + *-e* for the first or only main clause verb, for contexts in which an explicit time specification is mentioned, and for contexts where the verb is marked by an object prefix, are all consistent with the meaning differences that have been hypothesized.

5. Conclusion

In conclusion, the domains of Tense-Aspect-Modality in Swahili encompass a variety of semantic dimensions that intersect with ir/realis in different ways. The TAM affixes can be divided into three sets based on their ability to co-occur with a negation marker. The Set I affixes cannot co-occur with a negation marker, and have meanings related to time, backgrounding, or contingency. The Set II affixes can optionally co-occur with a negation marker, and have meanings that call an event's occurrence into question and assess its degree of probability of occurrence. The Set III affixes must co-occur with a negation marker, and their meanings refer to whether or not the opportunity for the event to occur is limited in time. Although the affixes of Set II can be categorized as sharing the semantic domain of "irrealis", the remaining affixes—including the ones that are obligatorily negated—must be regarded as unmarked for realis, rather than as signaling the meaning 'realis'. This is also true of the suffix *–a*, which can co-occur with any of the prefixes in the system and is therefore neutral to the distinctions made by the various prefixes. Rather than a meaning therefore, 'realis' is a message that is normally inferred (for pragmatic reasons) if the context does not suggest otherwise.

Yet the binary irrealis/unmarked distinction is complicated by the distribution of the two negation markers, Neg1 (*ha-*) and Neg2 (*si-*), which do not match up neatly with these categories. *ha-* is obligatory with the Set III affixes and is the only negation marker that can co-occur with the Set II prefix *ta-*, at the top of the probability scale; *ha-* can optionally co-occur with the low-probability Set II prefixes *nge-* 'probability remote' and *ngali-* 'probability more remote', but it cannot co-occur with the Set II suffix *–e* 'somewhat probable', in the middle of the probability scale. Neg2 (*si-*) co-occurs only with irrealis affixes below the top of the probability scale (including the suffix *–e*), and is also used to negate relativized verbs. The difference in meaning between the negation markers *ha-* and *si-* does not coincide with the realis/irrealis boundary, but instead seems to express the additional dimension of forcefulness of assertion/degree of confidence with which the speaker negates the occurrence, which can be applied to both irrealis events and those not marked for realis status.

The pair of examples highlighted in this paper (13a and b) were chosen in order to illustrate the drawbacks of analysis of the message rather than analysis of the linguistic sign. From the point of view of the message, these examples appear virtually synonymous: both report the proposition that the speaker did not have anything to say, and both relate to a point in time located in the past. Based on the message, they do not appear to differ in realis status. As I hope to have shown, however, the fact that one of these events is marked as "irrealis" whereas the other is not can be understood by considering the meanings of the pertinent linguistic signs in their fuller contexts of use, and in relation to contrasting signs within the same TAM system—an under-appreciated factor that Saussure called "value". This provides the tools for discovering the more subtle differences between the examples that escape more superficial scrutiny.

In conclusion, "encoding" should be tied to specific linguistic forms. The question should be not "how is such-and-such a substance expressed in Language X?", but rather "what semantic concepts are conveyed by the linguistic signs, and how do the signs relate to one another?" Once that has been determined, we are on a sounder footing for making cross-linguistic comparisons.

APPENDIX. The "Old Perfect" hypothesis

The use of the negative "subjunctive" *si-* + *–e* to refer to negated events with an implicit past time reference, as in examples (11a) and (13a) in this paper, is often described by Swahili grammarians as "idiomatic", since it does not conform to traditional notions of "subjunctive". There has been some debate in the literature about the origin of this use. Haddon (1936) suggests that the "idiomatic" *–e* forms, rather than being subjunctives, are really relics of an archaic perfect suffix, widespread in Bantu but no longer used in modern Swahili, that has been reconstructed as *-įle (į = super-high front vowel, e.g. Nurse and Hinnebusch 1993, p. 388). Bryan (1937) identifies some examples of the archaic Perfect in old Swahili poetry, and notes that the super-high front vowel of the perfect suffix induced a number of sound changes in the verb stem to which it was attached, e.g. t > s, raising of the stem vowel, etc. (p. 196). Although Bryan notes that *–e* marked verbs in Modern Swahili show none of these phonological changes, she surmises that 'these constructions must have come into being after the period of sound change' (p. 198), apparently conflating diachronic sound change with synchronic morphophonemic alternation.

Miehe (1979), in a study of the language of old Swahili poetry, includes examples of *si-* + *-e* in the category of 'Negation des Perfekts', and mentions Bryan and Haddon's theory that this represents the 'missing negative perfect', but she also points out that the theory was disputed by Lambert (1955, pp. 88-9) on the reasonable grounds that if the "idiomatic" negative subjunctives really were negative perfects, the verb stems would show the morphophonemic changes characteristic of perfect stems, whereas they never do (cited in Miehe p. 192). Even more compelling evidence against the Old Perfect theory is the fact, noted by Miehe, that the Old Perfect was negated with *ha-* whereas *–e* has always been negated with *si-*. Miehe, however, is sympathetic to the Old Perfect theory, suggesting that the perfect stem might have allowed either negation marker, just as *ngali-* does (p. 192), and that the use of *–si-* with the perfect stem might have been confined to subordinate clauses. However, she gives no examples of use of *si-* with perfect stems.

Recently Devos (2008) has revisited this issue. Based on comparative evidence from other Swahili dialects and from other Bantu languages, and on alternative TAM marking in non-modal contexts, she concludes that although the use of *–e* after certain temporal adverbials may be due to homonymy between subjunctive and the old Perfect, the other uses described as "idiomatic" (including the use of *si-* + *-e* under discussion here) are true subjunctives.

As far as I can tell, the main basis for the "Old Perfect" hypothesis is semantic: its proponents have trouble reconciling certain messages associated with *–e* with traditional uses of the "subjunctive". Since *–e* in some contexts can be interpreted as referring to events that are past or completed (or would be had they occurred), it is assumed that this *–e* must really be a perfect rather than a subjunctive. However, there are several reasons to reject this hypothesis. First, as mentioned above, no *–e* forms in modern Swahili show any evidence of the morphophonemic changes associated with the obsolete *-įle.

Second, also mentioned earlier, *-e* and *-ile were used with different negation markers, and no evidence has been provided that *-ile was ever negated with *si-*. Last, and most important, the semantic argument is based on assumptions of what can and cannot be a "subjunctive", derived from the use of forms labeled as such in other languages. However, as argued in relation to examples (13a and b), and as shown by the quantitative data in section 4.1, the use of *–e* in these examples is motivated by its irrealis meaning, and there are systematic differences between the contexts where *–e* is used and those where the more neutral "past negative" *ku-* is used, which relate to the fact that *ku-* is a tense whereas *–e* is not. Although the context does not always provide redundant information that can prove conclusively why one or the other form was chosen, it is possible to find examples of *si-* + *-e* that can be interpreted either modally or temporally, and such crossover cases help explain the use of *–e* in contexts that appear temporal, without positing a merger with the obsolete Perfect. For example:

(i) *Umefahamu maneno yale niliyosema mimi na mvuvi? Akasema, La, sikufahamu. Akamwambia, Wewe Waziri mzima* ***u-si-fahamu[-e]*** *maneno yale, akayafahamu mvuvi. Sharti unifahamishe. Akamshika Waziri hata* ***a-si-w-e*** *na raha.* [Ab 23]

Did you understand those words that I spoke with the fisherman? He said, No, I didn't understand (*ha-* + *ku-* + *-a*). He told him, You, a full Minister, **couldn't/didn't understand** (*si-* + *-e*) those words, [yet] a fisherman understood them. You must explain [them] to me (*-e*). He pressed the Minister until **he didn't have** (*si-* + *-e*) peace.

Here the Sultan has had a cryptic conversation with a fisherman in the presence of his Minister, and he then demands that his Minister explain what it meant, which the Minister cannot do. There are two references to not understanding: the first, spoken by the Minister, is marked by *ha-* + *ku* + *-a*, and the second, spoken by the Sultan, is marked by *si-* + *-e*. Although both refer to the same past (non-) occurrence, they present it in different ways: the Minister's utterance is merely a statement of fact, whereas the Sultan foregrounds the contrast with expectation by reminding the Minister that someone of his exalted status should be capable of an intellectual task that a mere fisherman can accomplish. The second example of *si-* + *-e* can also be interpreted as referring to past time, but here the Minister's not having peace is the result of the Sultan's insistence, once again motivating the move to irrealis.

The "Old Perfect" hypothesis illustrates the pitfalls of imposing a priori message categories on linguistic forms rather than investigating how those forms are actually used.

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