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Salience, uniqueness, and the definite determiner *-tè* in Bulu*

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Abstract Analyses of the meanings of definite determiners both in English (Kadmon 1990; Roberts 2003; Elbourne 2013, among others) and crosslinguistically (Schwarz 2013; Arkoh & Matthewson 2013) have been framed in terms of two dimensions of meaning: familiarity and uniqueness. This paper presents an analysis of the Bulu (Bantu, Cameroon) definite determiner *-tè*. I argue that the antecedent of an NP with *-tè* is required to be salient and unique. Thus, salience is an additional dimension along which there is crosslinguistic variation in the meanings of definite determiners.

Keywords: Bulu, definite determiner, familiarity, uniqueness, salience, attention

1 Introduction

Since Russell 1905, research on the meanings of definite descriptions has been concerned with developing an empirically adequate semantics for the English definite determiner *the* (see e.g. Elbourne 2013 for an overview). The meaning of *the* has been analyzed in terms of familiarity (Heim 1982; Roberts 2010), semantic uniqueness (Kadmon 1990; Elbourne 2008, 2013), or a combination of familiarity and the weaker notion of informational uniqueness (Roberts 2002, 2003, 2005). Recently, drawing on a typologically diverse sample of languages, Schwarz (2009, 2013) and Arkoh & Matthewson (2013) have argued that at least two different kinds of meanings are encoded by definite determiners crosslinguistically. They characterize these meanings using the same two dimensions: familiarity and uniqueness.

In this paper based on original fieldwork on Bulu[1] (Bantu, Cameroon), I argue

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1 Bulu (A.74 on Guthrie's classification) is a member of the Beti group of Northwest Bantu languages.

for the inclusion of an additional dimension in the characterization of definite determiners crosslinguistically: salience. I propose that a salience presupposition is part of the meaning of a Bulu noun phrase (NP) with the definite determiner *-tè*. I also show that, like definites crosslinguistically, the meaning of an NP with *-tè* includes a uniqueness presupposition. More specifically, I argue that NPs with *-tè* require antecedent discourse referents (DRs) that are both salient in the discourse context and informationally unique among salient DRs.

Salience—or, alternatively, attention—has previously been argued to play a role in the interpretation of some types of definite NPs, a class which includes definite descriptions and at least pronouns and demonstrative NPs (Gundel, Hedberg & Zacharski 1993; Grosz, Joshi & Weinstein 1995; Roberts 2003, 2005, 2011; see also Elbourne 2008, 2013). For example, Gundel et al. (1993) characterize the antecedents of pronouns as being "in focus", which is to say at the center of attention in the discourse. Similarly, Roberts (2003, 2005) argues that the antecedent of a pronoun is the maximally salient DR that fits the descriptive content of the pronoun.

On the other hand, salience has not been argued to be a component of the meaning of a definite determiner. Thus, this paper identifies salience as a previously undescribed locus of variation in the meanings of definite determiners. In so doing, it provides further evidence for Schwarz (2013) and Arkoh and Matthewson's (2013) claim that the semantics of definite determiners vary crosslinguistically.

2 A brief introduction to the morphosyntax of Bulu *-tè*

Example (1) illustrates the morphosyntax of a typical utterance with *-tè*.[2,3]

(1) *Context: Last night Abondo was reading a book. Earlier today, he told Andeng about it. Now he notices that it is missing and says* Do you remember the book I was reading?

kálàtà tè à nɔ̀ ndʒáŋán.
book TE PN_1 COP missing

'The book is missing.'

It is spoken primarily in Southern Cameroon by approximately 858,000 native speakers and around 800,000 L2 speakers (Lewis, Simons & Fennig 2013). The dialect considered in this study is spoken in Yaoundé and Sangmélima. The original fieldwork for this study was conducted with a native speaker living in Columbus, Ohio from 2013-2014.

2 Bulu examples are written in IPA. In the interest of perspicuity, morphemic segmentation is avoided throughout. Abbreviations: 1,2,3: person; AUX: auxiliary; CONJ: conjunction; DEM: demonstrative; COP: copula; PL: plural; $PN_{\#}$: pronoun of noun class #; S: singular; TAM: tense/aspect/mood

3 High tone is indicated with an acute accent (e.g. á), and low tone is indicated with a grave accent (e.g. à). ˈ indicates downstep. Thanks to Emily Clem for consultation on tone.

Example (1) demonstrates the basic word order in Bulu: SVO. (1) also demonstrates the basic order of elements in NPs. The head noun is first, followed by any determiners, demonstratives, possessive pronouns, quantifiers, or relative clauses. (1) shows that NPs with *-tè* can occur in argument position. In Bulu, bare NPs can also occur in argument position. For example, in a minimally different context in which Abondo does not ask Andeng if she remembers the book he was reading but simply wishes to communicate that some book has been stolen, *kálàtà* 'book' may be used without *-tè* or any other determiner. Bare nouns in Bulu have both definite and indefinite interpretations, depending on the context.

The third word in (1) is what Bates (1926: 32) calls the "neuter pronoun connective". On Bates' account, this morpheme is a pronoun that takes the subject as its antecedent and obligatorily precedes the verb.[4] The morphological form of the neuter pronoun connective in (1) illustrates an important feature of Bulu morphosyntax: noun classes, which control agreement and thereby determine the form that the pronoun takes. Noun classes are a distinguishing feature of Bantu languages generally, as described in Maho 1999. Every noun in Bulu consists of a bound root plus a noun class prefix corresponding to the class of the noun. Most roots can combine with multiple class prefixes, resulting in different but related meanings. Across the Bantu family, class differences often correspond to differences in number (Carstens 1997; Maho 1999). For example, in Bulu, the singular noun *è-tétàm* 'a/the okra pod', consists of the class 7 prefix *è-* and the root *-tétàm* 'okra pod'. The plural noun *bì-tétàm* '(the) okra pods' combines the same root with the class 8 prefix *bì-*.

Just as noun classes control agreement on the neuter pronoun connective, so they also control agreement within NPs. For example, 'this okra pod' is *é-tétàm ˩dʒí-ná*, while 'these okra pods' is *bí-tétàm ˩bí-ná*, where the class prefix on the demonstrative root *-ná* agrees with the class of the noun. Like the proximal demonstrative root *-ná* exemplified immediately above, *-tè* is a bound root. However, in (1), as well as most examples in this paper, the class agreement prefix on *-tè* is dropped. This is a general pattern when *-tè* combines with singular nouns, though it is not without exception (Bates 1926:27). In contrast, when combining with plural nouns, *-tè* requires an overt class agreement prefix. This is exemplified in (2) in Section 3.3.1 below.

4 There are no phonetic analyses describing the degree to which the neuter pronoun connective, or the various TAM morphemes that intervene between it and the verb, are incorporated into the same phonological word as the verb stem. In the absence of such analyses, I will follow Bates 1926 and Abomo-Maurin 2006 in writing both neuter connective pronouns and TAM markers as separate words. Nothing in this paper hinges on this choice.

3 Bulu *-tè*, salience, and uniqueness

In (1), the speaker uses *kálàtà tè* 'the book' to refer to a book introduced by prior linguistic material in the discourse. According to Bates (1926), such uses are prototypical. Bates analyzes *-tè* as a demonstrative. However, in his discussion he describes its meaning in terms of the English definite determiner *the*. He says that *-tè* "is used with nouns to indicate a thing or person that has just been mentioned, or, at least, that has been in mind. It is often merely equivalent to *the* or *the thing we were speaking of*, &c" (Bates 1926:27).

Bates' characterization of *-tè* as similar to the definite determiner *the* is supported by two additional observations about example (1). First, in a minimally different example in which Abondo does not ask Andeng whether or not she remembers the book he was reading, (1) is not acceptable. This shows that an NP with *-tè* requires a familiar antecedent. Second, in a minimally different example in which Abondo brings up two books that he was reading, (1) is not acceptable. This shows that an NP with *-tè* requires a unique antecedent. Given data such as these, I assume that *-tè* is a definite determiner rather than a demonstrative. This characterization is supported by the fact that the use of *-tè* does not require a demonstration and by facts about the morphosyntax of *-tè*. When *-tè* combines with an overt class agreement prefix, the prefix is not the same morpheme that combines with demonstrative roots. Thus *-tè* differs from Bulu demonstratives both semantically and morphosyntactically.

NPs with *-tè* and English definite descriptions are acceptable in many of the same contexts, as noted by Bates and illustrated in (1). However, in some contexts where an English definite description is acceptable, an NP with *-tè* is not. Investigating such contexts reveals that the familiarity and uniqueness that license English definite descriptions are necessary but not sufficient conditions for the use of an NP with *-tè*. The data below motivate this claim. They also show that an NP with *-tè* is acceptable only when its antecedent is salient in the discourse context and informationally unique among all such salient DRs.

Section 3.1 introduces the theoretical assumptions underlying the subsequent discussion of the data. Section 3.2 develops an explicit characterization of salience. Section 3.3 presents examples demonstrating that NPs with *-tè* are acceptable only when they denote a DR that is salient in the discourse context. Finally, Section 3.4 demonstrates that the DR denoted by an NP with *-tè* must also be informationally unique among such salient DRs. Along the way, when discussing specific examples, I present evidence that the acceptability of NPs with *-tè* differs from the acceptability of any English definite descriptions, demonstrative NPs, and pronouns.

3.1 Theoretical preliminaries

The analysis developed here relies on the conceptualization of a linguistic context as a body of information, which is due to the pioneering work of Stalnaker (1978), Lewis (1979), Kamp (1981), and Heim (1982). This body of information is assumed to contain, among other things, a set of familiar DRs, indices corresponding to sets of information. In the tradition of Kamp 1981; Heim 1982; Farkas 2002; Roberts 2003, among others, I assume that the denotation of a definite NP is a DR. Like Roberts (2003), I use the term 'antecedent' to mean the familiar DR denoted by a definite, rather than a prior linguistic expression. I also follow Roberts (2003) in assuming that antecedent DRs can be merely weakly familiar. A DR is weakly familiar if it is entailed to exist by the common ground. Thus, for example, if an individual is physically perceptible and salient in the context of utterance, then there is a weakly familiar DR corresponding to that individual. The individual need not correspond to the denotation of any previous linguistic expression.

I follow Roberts 2003, 2005 in assuming that the kind of uniqueness that is relevant for interpreting definite descriptions is informational uniqueness. Roberts (2005:4) characterizes informational uniqueness as "a requirement that there be no more than one discourse referent in the interlocutors' common ground which satisfies the definite's descriptive content." On this proposal, the presupposition triggered by a definite description such as *the dog* is not that there is only a single dog in the world, the model, or some appropriately minimal situation. Rather, it is that among all of the familiar DRs entailed to exist in the common ground at the time of utterance, only one is entailed to bear the property denoted by *dog*.

3.2 Salience

Following Roberts (2010, 2011) and, to a lesser degree, the work of Gundel et al. (1993) and Grosz et al. (1995), I define salience in terms of attention capture. What is salient to a given individual is what she is paying attention to. Since developing a theory of attention capture is a psychological task, not a linguistic one, I turn to the literature on attention capture to see what factors are at work in capturing attention. Broadly speaking, this literature describes two types of attention capture: top-down and bottom-up (see Awh, Belopolsky & Theeuwes 2012; Zehetleitner, Goschy & Müller 2012; Chen, Zhou, Chen, He & Zhou 2013; Inukai, Kawahara & Kumada 2010; Nordfang, Dyrholm & Bundesen 2013; Parmentier 2008; Tanenhaus, Chambers & Hanna 2004 and the references cited therein). Top-down attention capture refers to attention that is driven by intentions. In short, people pay attention to the things that are relevant to their current and past tasks and goals. If we believe something is relevant to what we are doing, we attend to it. In contrast, bottom-up

attention capture is essentially unintentional. It refers to attention that is driven by properties of the stimulus attended to, in particular its perceptual prominence. Stimuli may be perceptually prominent due to sudden change, movement, standing out from surrounding stimuli, and a host of other factors.

Much of the literature on attention capture seeks to isolate one form of attention or the other, or to determine which type is dominant under certain conditions. For the purpose of this paper, the crucial point is that both kinds of attention capture are at work in tandem. Each interlocutor is attending to whatever is relevant to her goals as well as whatever is perceptually prominent in the context of utterance. This claim entails that the interlocutors are giving top-down attention to the content of the discourse. As argued by e.g. Grosz et al. (1995) and Roberts (2010, 2011), if sharing information is a goal of the interlocutors, then they will attend to whatever is relevant to that sharing, i.e., the topics under discussion. Roberts argues that, in particular, they will pay attention DRs that are relevant to answering the current question under discussion (QUD; see Roberts 2012 for a theory of discourse structured buy QUDs). However, Roberts also assumes that interlocutors attend to things that are relevant to their own personal goals as well as things that are perceptually prominent, and includes those factors in her definition of salience as I do here.

An additional step is needed to connect attention and salience. Attention is an individual, cognitive phenomenon. Salience, as it relates to the meaning of linguistic expressions, is a discourse phenomenon. Connecting the two is possible because, following Prince (1992) and Gundel et al. (1993), only the addressee's attentional state is relevant for discourse salience. This is because the speaker's attentional state can be assumed. For any referential expression in an utterance, the speaker is necessarily attending to the DR denoted by that expression. Otherwise, she could not use the referential expression. Discourse salience therefore hinges on whether or not the addressee can be assumed to be attending to the DR as well.

Prima facie, assuming that the addressee's attentional state is central to determining discourse salience would seem to put the speaker in a difficult position. In order to determine whether or not a DR is salient, and thus, on this story, whether or not she can refer to that DR using an NP with *-tè*, the speaker must track the addressee's attentional state. Fortunately, there is experimental evidence that interlocutors do track each others' attentional states. For example, Böckler, Knöblich & Sebanz (2011); Liebal, Behne, Carpenter & Tomasello (2009); Staudte & Crocker (2011); Rohde & Frank (2011) have shown that interlocutors track each other's gaze and use the information gathered from doing so in resolving the meanings of referential expressions (see also studies cited in Roberts 2011). Their results lend experimental support to the claim that interlocutors keep track not only of what is being discussed but also of what is being attended to by the other parties to the conversation.

3.3 *-tè* requires a salient antecedent

In order for an NP with *-tè* to be acceptable, its antecedent must be salient. This means that the speaker needs to have (accurate) evidence that the addressee is attending to that antecedent. The addressee's attention may be captured due to top-down or bottom-up factors. Data supporting the claim that *-tè* requires a salient antecedent are presented in Sections 3.3.1 and 3.3.2.[5]

3.3.1 Top-down attention and *-tè*

Top-down attention is driven by relevance to an agent's tasks or goals. The minimal pair in (2) demonstrates that an NP with *-tè* can be used to denote a DR corresponding to an entity that is known to be relevant to the addressee's personal tasks or goals.

(2) a. *Context: Jefferson's cousin Dave likes all kinds of meat, including white and dark meat turkey.*[6] *At Thanksgiving dinner, Jefferson sees him poking around in the turkey dish picking out pieces of turkey to eat. Jefferson says:*

#mə́ m bì̀lì̀ məbɔ̀ mətè.
1.S TAM have leg.PL TE

Intended: 'I already have the legs.'

b. *Context: Identical to (2a), except that Dave prefers dark meat, and he makes sure to get the dark meat every year.*

mə́ m bì̀lì̀ məbɔ̀ mətè.
1.S TAM have leg.PL TE

'I already have the legs.'

In (2a) the goals of the addressee are not known to involve the legs of the turkey. Therefore, the speaker has no reason to believe that the addressee is attending to the legs, and using *məbɔ̀ mətè* 'the legs' is unacceptable. In contrast, in (2b), when the addressee is known to have the goal of finding the dark meat, which includes the legs, the use of *məbɔ̀ mətè* 'the legs' is acceptable.

Here, the pattern of acceptability of *məbɔ̀ mətè* 'the legs' differs from the pattern of acceptability of *the legs* in English. *The legs* is acceptable in both contexts, because in both contexts the turkey legs are weakly familiar (entailed to exist due to the existence of the turkey) and informationally unique. Thus, (2a) shows that

5 In order to avoid a confound, in all of the examples in this section uniqueness is held constant. Here all of the DRs denoted by an NP with *-tè* uniquely satisfy the descriptive content of that NP, not just among salient DRs but among all weakly familiar DRs in the context.

6 Here 'dark meat' is a term covering legs and wings but not breast meat.

familiarity is not the right notion for characterizing the meaning of *-tè*. (2b) and the rest of the data in this section provide evidence that salience is.

In (2), pattern of acceptability of *mə́bɔ̀ mə́tè* 'the legs' also differs from that of the English NP *those legs* and the pronoun *them*. Both are unacceptable in the context of (2a) and marginal in the context of (2b).

The minimal pair in (3) provides another example of an NP with *-tè* in a context involving top-down attention capture. This example highlights the long term goals of the agent rather than her immediate tasks.

(3) a. *Context: Andung and Abondo have a special book that is a family heirloom passed down from Andung's mother. It has family genealogy written inside it. They always keep it on the nightstand beside their bed. One day when they come home, they find their house has been broken into. When they come to the nightstand, they see that the book is gone. They exchange a glance, and then Andung says:*

kálàtà tè à nə̀ ndʒáŋán.
book TE PN_1 COP missing

'The book is missing.'

b. *Context: Minimally different from (3a), except that Andung is speaking to her teenage son, who does not care about genealogy or family heirlooms.*

#kálàtà tè à nə̀ ndʒáŋán.
book TE PN_1 COP missing

Intended: 'The book is missing.'

In (3a), where the addressee is an adult and can be presumed to be interested in family history and heirlooms, *kálàtà tè* 'the book' is acceptable. In contrast, when the addressee is known not to care about such things, as in (3b), *kálàtà tè* 'the book' is unacceptable. In the examples in (3), the English definite description *the book* displays the same pattern of acceptability as *kálàtà tè* 'the book'. In contrast, *That book* is odd in (3a), and *it* is unacceptable in both cases.

In addition to paying attention to entities that are relevant for their personal tasks and goals, addressees are assumed to be attending to whatever is under discussion in the discourse, given that sharing information is a goal of a rational conversational participant (Roberts 2010, 2011). Thus, using an NP with *-tè* to indicate a previously mentioned antecedent that continues to be relevant in the discourse constitutes another type of example involving salience due to top-down attention. One such example was provided in (1) above. Another is provided in (4). In this context, an English definite description, demonstrative NP, and pronoun, are all acceptable.

(4) *Context: Sara is a photographer who takes pictures of white-haired people. Fred says:*

mà ŋgá jə́n mòt á fùp âŋgò?é. mòt tè à mbɔ́ ábə̀?ə̀
1S PST see person LOC farm yesterday person TE PN_1 AUX wearing
éfùmùlù ésì̀.
white hair

'I saw a person at the farm yesterday. The person had white hair.'

The examples in this section demonstrate that NPs with *-tè* can be used to denote DRs that are salient due to top-down factors. These factors include relevance to individual goals, as in (2) and (3), as well as relevance to the shared goal of communicating, as in (4).

3.3.2 Bottom-up attention and *-tè*

Bottom-up attention capture can also result in salience. The minimal pair in (5) demonstrates that an NP with *-tè* can be used to denote a DR corresponding to an entity that is perceptually prominent. When the same entity is not perceptually prominent, an NP with *-tè* is unacceptable, even if the entity is unique and familiar.

(5) a. *Context: Abondo is sitting on a bus when a man he does not know sits down beside him. The man says*

#vǰan tè wɔ́ fà̀i də́n.
sun TE PN_{11} shine today

'The sun is bright today.'

b. *Context: Identical to (5a), except that the stranger first opens the window shade on the bus, letting in sunlight.*

vǰan tè wɔ́ fà̀j də́n.
sun TE PN_{11} shine today

'The sun is bright today.'

In both contexts, the sun is weakly familiar and unique. It is for this reason that the English definite description *the sun* is acceptable in both contexts. However, weak familiarity and uniqueness are not sufficient to license the use of *vǰan tè* 'the sun' in (5a). In contrast, when the sun's perceptual prominence, and thus its capacity for bottom-up attention capture, are increased in (5b) *vǐan tè* 'the sun' is acceptable. In English, *that sun* is odd in the context of (5a) because the sun has not been indicated

deictically, and *it* is unacceptable.[7,8] Increasing the perceptual prominence of the sun by opening the window shade does not change the acceptability of either expression.

Another example that illustrates the importance of bottom up attention capture is (6). In all three examples in (6), there is a single unique dog in the context. In (6a) and (6b) where the dog is simply present and pretty but not perceptually prominent, *mvú tè* 'the dog' is unacceptable. However, in (6c), where the dog is perceptually prominent due to its foul odor, *mvú tè* 'the dog' is acceptable. In contrast, English *the dog* and *that dog* would be acceptable across all three contexts, and *it* would be acceptable in none.[9]

(6) a. *Context: Masengmayang comes to Abondo's house and as he comes in he notices a dog in the corner sleeping. He says:*

ə́ŋvú {ˈɲíná/dʒòe} í nə̀ àbə̀ŋ.
dog DEM/2.S.POSS PN$_9$ COP pretty

'This/your dog is pretty.'

b. *Context: Masengmayang comes to Abondo's house and as he comes in he notices a dog in the corner sleeping. He says:*

??ŋvú tè ì nə̀ àbə̀ŋ.
dog TE PN$_9$ COP pretty

Intended: 'The dog is pretty.'

c. *Context: Masengmayang comes to Abondo's house and notices a foul smelling dog in the corner. He says:*

ŋvú tè jà ɲùm àbé.
dog TE PN$_9$ smell bad

'The dog smells bad.'

7 Under a reading where *it* does not denote the sun but rather means something like 'the day' or 'the weather' or 'the sunlight coming in the window', an English utterance with *it* is acceptable in (5b). Since *viǎn tè* 'the sun' has no such interpretation, I ignore that reading here.

8 Bates (1926) translates *viǎn* 'sun' as "sunshine", raising the possibility that the word does not actually indicate the situationally unique sun. However, the dialect investigated by Bates appears to differ from that spoken by the Bulu consultant whose judgments are given here. The consultant sometimes disagrees with both grammatical judgments and translations of particular words recorded by Bates, and she reliably uses *viǎn* 'sun' to indicate the sun, as in e.g. the translation of *the sun is a star*.

9 Craige Roberts (p.c.) points out that (6c) is similar to examples given by Heim, in which *it* can be used to refer to a smelly donkey that walks into the room, due to the donkey's high salience. She also notes that in this case, because the dog does not disrupt the scene in the way an entering donkey would, it is necessary for the addressee to notice that the speaker is looking at or otherwise indicating the dog. I take it that in this case, the pronoun has a deictic/demonstrative interpretation. However, if we imagine that Masengmayang's back is turned or he is focused elsewhere, *it* either indicates the general situation/room, or is uninterpretable.

3.3.3 Attention entailed by the common ground

The examples in the previous two sections have demonstrated that a DR may be salient due to top-down or bottom-up factors. The examples in (7) demonstrate that it is the addressee's attentional state, not top-down or bottom-up attention capture per se, that matters. They shows that the common ground may entail that the addressee is attending to something without that thing being perceptually prominent, related to any particular goal, or under discussion in the discourse.

(7) a. *Context: I go to Mejo's house. I see his hatchet leaning against the wall. I say, 'What are you doing today?' Mejo responds:*

óvɔ́n {#tè/↓wúná} ó nə̀ mbjâ átʃù. mà zù wɔ́ dʒə̀p.
hatchet TE/DEM PN_{11} COP very dull 1.S AUX PN_{11} sharpen

'This hatchet is very dull. I will sharpen it.'

b. *Context: I go to Mejo's house. I see his hatchet leaning against the wall, and I go pick it up. I say, 'What are you doing today?' Mejo responds:*

óvɔ́n tè ó nə̀ mbjá àtʃù. mà zù wɔ́ dʒə̀p.
hatchet TE PN_{11} COP very dull 1.S AUX PN_{11} sharpen

'This hatchet is very dull. I will sharpen it.'

In both examples in (7), the axe is neither perceptually prominent nor related to any known goals of the interlocutors nor under discussion. In (7b), but not in (7a), the addressee picks up the axe. As a result, only the context in (7b) entails that the addressee is attending to the axe, and only there is *óvɔ́n tè* 'the axe' acceptable. In contrast, the English definite description and demonstrative NP are acceptable across both examples, and the pronoun *it* is unacceptable in (7a) and marginal in (7b).

The data in this section have demonstrated that an NP with *-tè* is acceptable only when the DR it denotes is salient, where salience is defined in terms of the attentional state of the addressee. This pattern is not attested for English definite descriptions, demonstrative NPs, or pronouns, as summarized in Table 1. The contrast presented in Table 1 shows that the analysis of NPs with *-tè* cannot be subsumed under analyses of English definite descriptions, demonstrative NPs, or pronouns. In Section 5, I argue that it cannot be subsumed under the analysis of strong definites proposed by Schwarz (2009, 2013) and Arkoh & Matthewson (2013).

3.4 *-tè* presupposes a unique antecedent

The data presented in this section demonstrate that an NP with *-tè* requires not just a salient antecedent but also an antecedent that is unique among all of the salient DRs

Context	-tè	the NP	DEM NP	pronoun
(2a)	#	✓	#	#
(2b)	✓	✓	??	#
(3a)	✓	✓	?	#
(3b)	#	#	#	#
(4)	✓	✓	✓	✓
(5a)	#	✓	?	#
(5b)	✓	✓	?	#
(6a)	#	✓	✓	#
(6b)	#	✓	✓	#
(6c)	✓	✓	✓	#
(7a)	#	✓	✓	#
(7b)	✓	✓	✓	?

Table 1 Acceptability of NPs with *-tè* and three types of English definites

in satisfying the descriptive content of the NP. If more than one salient DR satisfies the descriptive content of the NP, an NP with *-tè* is unacceptable, as shown in (8).

(8) *Context: Sara is a photographer and she likes to take pictures of white haired people. And Fred says:*

#mà ŋgá jə́n bòt bə́bàj á fùp âŋgòʔé. mòt tè à mbə́ á
1.S PST see people two LOC farm yesterday person TE PN_1 AUX PN_1
bəʔə́ éfùmùlù ésì.
wearing white hair

Intended: 'I saw two people at the farm yesterday. The person had white hair.'

In (8) two people are introduced into the discourse. Both are equally salient, in the sense that both are under discussion in the discourse. Here, *mòt tè* 'the person' is not acceptable. However, there are two ways to make (8) acceptable, and both involve uniqueness. First, in a minimally different context in which only one person is introduced in the initial sentence, the second sentence in (8) is acceptable. Second, in the context of (8), a minimally different utterance in which Fred uses *bòt bətè* 'the people' to say that both people have white hair is acceptable. Thus, to make the use of *-tè* acceptable, either a unique person must be introduced and made salient, or a unique plurality of people must be denoted by the NP with *-tè*.

The minimal pair in (9) confirms the uniqueness requirement.

(9) a. *Context: I say to you: 'Yesterday I saw two men and a woman at the farm. One of the men had black hair. The other man had white hair. The man that had black hair was white. The man that had white hair was black.' Then I continue:*

#fâm tè è mbɔ́ è kɔ́bɔ̀ fùlàsí.
man TE PN$_9$ TAM CL.9.PN speak French

Intended: 'The [black haired] man was speaking French.'

b. *Context: I say to you: 'Yesterday I saw two men and a woman at the farm. One of the men had black hair.' Then I continue:*

fâm tè è mbɔ́ è kɔ́bɔ̀ fùlàsí.
man TE PN$_9$ AUX PN$_9$ speak French

'The [black haired] man was speaking French.'

In both examples in (9), two men are introduced into the context. In (9a) but not in (9b), both men are described and thus both are salient due to being under discussion. As a result, in (9a) *fâm tè* 'the man' is not acceptable. Like English *the man*, it must pick out a unique referent. In contrast, *that man* is able to refer deictically to the most recently mentioned man. Similarly, *he*, especially when prosodically emphasized, can be used to refer to the most salient man, which here also happens to be the most recently mentioned. This example thus reveals an important distinction between English pronouns and NPs with *-tè*. On Roberts' (2003; 2005) analysis, pronouns select the maximally salient DR that fits their descriptive content. In an example such as (8), where two mention are mentioned, but they are in no way differentiated, a pronoun is unacceptable. However, in an example such as (9a), where two men are mentioned and they are differentiated, at any given point in the discourse, one of the two is more salient than the other, if only slightly, and *he* is acceptable. In contrast, *fâm tè* 'the man' is not. This shows that *-tè* requires not maximal salience but uniqueness among the salient DRs.

Examples such as (9) motivate including uniqueness in the conventional content of *-tè*. This also is in contrast to Roberts' (2010; 2011) salience-based analysis of English pronouns. For Roberts, salience yields a ranking on DRs in terms of attention that is determined by the top-down and bottom-up factors mentioned above, with special emphasis on the top-down factor of relevance to the current QUD. Given this ranking, she posits a general principle for the interpretation of all definites: when an addressee encounters a referring expression, she searches the domain of DRs for an antecedent beginning with the most salient and moving to the least salient. When she comes to the maximally salient DR that satisfies the descriptive content of the NP and other plausibility considerations, she takes that DR to be the antecedent. Making this a general principle yields nice results. For example,

the maximal salience condition on pronouns both falls out as a consequence of the general principle, and correctly predicts the acceptability of *he* in (9a). In contrast, if *-tè* imposed the same maximal salience condition rather than a separate uniqueness condition, *fâm tè* 'the man' would have essentially the same semantic content as *he* and would be acceptable in (9a) as well. Accordingly, in the analysis below, I represent both salience and uniqueness in the translation given for *-tè*.

The examples in this section have presented evidence supporting the two claims made at its outset. NPs with *-tè* display a different pattern of acceptability across contexts than English definite descriptions, demonstratives, or pronouns. They do so because they require a unique antecedent among salient DRs. This differentiates them from definite descriptions, which arguably require uniqueness among all weakly familiar DRs (Roberts 2003), from demonstrative NPs, which require some sort of demonstration (Kaplan 1989), and from pronouns, which require maximal salience but not descriptive uniqueness (Gundel et al. 1993; Roberts 2003, 2005).

4 Analysis of *-tè*

In this section I develop an analysis of the meaning of *-tè*. In the absence of a comprehensive account of the syntax and semantics of Bulu NPs, I do not embed this analysis in a compositional fragment. That is a task for future work.

Following the conceptualization of a linguistic context as a body of information mentioned above, I assume the following simplified model.

(10) a context $c =_{def} \langle \mathsf{I}, \mathsf{C}, \mathsf{D}, t \rangle$, where

a. $\mathsf{I}_c =_{def}$ the set of interlocutors, including speaker, s_c, and addressee, a_c

b. $\mathsf{C}_c =_{def}$ the common ground

c. $\mathsf{D}_c =_{def}$ the set of weakly familiar DRs

d. $t_c =_{def}$ the utterance time

Given such a context, it is now possible to represent salience formally in a way that conforms to the experimental results and data given in Section 3. Since salience is defined in terms of attention, in (11) I define an attention relation that holds between an interlocutor α_c, a time t_c, and a DR i just in case α_c is attending to i at t_c.

(11) Given c, $\alpha \in \mathsf{I}_c$, and $i \in \mathsf{D}_c$: $\mathsf{att}(i, \alpha_c, t_c) \leftrightarrow \alpha_c$ is attending to i at t_c

Using (11) to define discourse salience proves slightly more complicated. Above, I argued that the most important criterion for salience is the attentional state of the addressee, because the speaker is entailed to be attending to anything she is discussing. That asymmetry is represented in the definition of the salience relation sal defined in (12).

(12) Given context c with speaker s_c and addressee a_c and $i \in \mathsf{D}_c$:
$\mathsf{sal}(i,c) \leftrightarrow \mathsf{att}(i,\mathsf{s}_c,t_c) \wedge \mathsf{C}_c$ entails that $\mathsf{att}(i,\mathsf{a}_c,t_c)$

sal is a relation between a context, c, and a DR, i, that holds just in case that i is salient in c. (12) gives two conditions that i must meet in order to be salient. First, the speaker must be attending to i. Second, the common ground must entail that the addressee is attending to i. In other words, the fact that the addressee is attending to i must be recoverable from the context. It must be something that the speaker and the addressee believe in common. The asymmetry is thus that salience is defined in terms of the speaker's actual attentional state and the addressee's public representation of her attentional state.

To see this asymmetry in action, consider again (2), where Dave is looking for dark meat on the platter of turkey at Thanksgiving. Dave's attention to the turkey legs denoted by *məbɔ́ mətè* 'the legs' is necessarily public. In (2a), where he is not known to have any reason to pay attention to the legs, *məbɔ́ mətè* 'the legs' is unacceptable. In contrast, the fact that the speaker is attending to the legs need not be known to Dave. In fact, it is presumably the utterance of (2b) that makes this fact known. Nevertheless, *məbɔ́ mətè* 'the legs' is acceptable.

Given the definition of salience in (12), it is possible to represent the meaning of *-tè* as a function from a property, which is denoted by the expression with which *-tè* combines, to a DR. That content is represented in two parts in (13), following the general trend in the literature to adopt a Fregean analysis of definites (see Roberts 2011 for discussion). On this kind of approach, the proffered content is simply the antecedent, a familiar DR, i. The salience and uniqueness implications are presuppositions, or conditions for felicity.[10]

(13) Given a context c,
$\textit{-tè} =_{def} \lambda P_{\langle e,t\rangle} \exists i \in \mathsf{D}_c[P(i) \wedge \mathsf{sal}(i,c) \wedge \forall j \in \mathsf{D}_c[(P(j) \wedge \mathsf{sal}(j,c)) \rightarrow j = i]].i$

(13) represents the meaning of *-tè* as a function from property, P, and a context, c, to the DR, i, that is presupposed to be unique among all salient DRs in c in satisfying the descriptive content of the expression with which *-tè* combines.

This proposal assumes that the meaning of *-tè* encodes an implication about the public representation of the mental state of a specific interlocutor, namely the addressee. In this respect, the current proposal follows Gunlogson (2001, 2002), Farkas (2002), Farkas & Bruce (2010), AnderBois (this volume), among others.

10 Assuming that the salience and uniqueness implications associated with *-tè* are presupposed predicts that they project from under negation and other entailment canceling operators (Tonhauser, Beaver, Roberts & Simons 2013, among many others). Testing for projection is a task for future fieldwork. The claim that NPs with *-tè* have anaphoric presuppositions is supported by the fact that they are subject to quantificational binding, a classic test for anaphoricity, following Partee 1984. Examples involving quantification are omitted due to reasons of space.

These authors assume that the interlocutors keep track of the each other's individual commitments, as well as the common ground. Individual commitments are not equivalent to an attentional state. The former are propositions, while the latter presumably is not. However, both kinds of proposals assume that the discourse context includes a representation of the interlocutors' cognitive states.

5 Bulu *-tè* and the distinction between strong and weak definites

Schwarz (2009, 2013) argues that there are two classes of definite descriptions crosslinguistically: strong and weak. Strong definites require linguistically introduced antecedents. Thus, they require a kind of strong familiarity, in contrast with Roberts' notion of weak familiarity described above. Weak definites, in contrast, encode only uniqueness. The data in Section 3 show that more than just uniqueness is required to license the use of an NP with *-tè*. But could an NP with *-tè* be a strong definite?

A comprehensive comparison of the analysis of strong definites proposed by Schwarz (2009, 2013) and Arkoh & Matthewson (2013) and the salience semantics for Bulu *-tè* proposed here is beyond the scope of the current paper. Here I merely show that NPs with *-tè* and strong definites behave similarly in many contexts, and then provide evidence that the analysis proposed for strong definites cannot account for the Bulu *-tè* data, at least not without modification.

The first similarity between NPs with *-tè* and strong definites is that both are used to denote antecedents that are introduced linguistically in prior discourse, as exemplified in (4) above. NPs with *-tè* and strong definites also display roughly the same pattern of acceptability in examples involving epithets and bridging. Both NPs with *-tè* and strong definites are used with epithets that refer to antecedents introduced in prior discourse. The use of *-tè* with an epithet is demonstrated in (14), where the epithet is *àkút*, which is translated as 'crazy/insane person'. For strong definites and epithets, see Schwarz 2013 and Arkoh & Matthewson 2013.

(14) *Context: I am standing around outside my house. You ask what I am doing.*

mòt ézìŋ á nə̀ mà ndá. àkút tè dá kə̀ mà bíbì.
person certain PN_1 COP 1.S house. crazy.person TE PN_5 TAM 1.S hit

'There's {a certain/some} person in my house. The crazy person hit me.'

In many cases NPs with *-tè* and strong definites pattern together in examples involving bridging. Following Clark (1975), bridging is a phenomenon in which a DR introduced linguistically entails the existence of a related DR. For example, a DR corresponding to a unicycle entails the existence of a DR corresponding to a wheel, and so on. Both Schwarz (2013) and Arkoh & Matthewson (2013)

observe that there is some variability in bridging cases both across and within languages. However, according to Schwarz (2013), strong definites are unacceptable for examples involving part-whole bridging (e.g. the unicycle and its wheel) but acceptable for other types of bridging, such as producer/product bridging (e.g. a book entails the existence of one or more authors). In general, NPs with -*tè* follow this pattern, as illustrated in (15)-(16).

(15) *Context: Sara is a photographer making a book of pictures of houses with metal doors. Her friend Ron is a handyman. Sara asks Ron what he did yesterday. He responds, "I cut down a tree and also painted a house." Then:*

a. # mbéj (tè) ó mbə́ étʃè.
door TE PN_3 COP metal
'The door was metal.'

b. mbéj já ndá tè ó mbə́ étʃè.
door of house TE PN_3 COP metal
'The door of the house was metal.'

(16) *Context: You went hiking in the mountains and came upon a village, where you saw a traditional dance called an* àkùmámbà*. It is common cultural knowledge that in this dance, around midnight, the group plays a special song, and one of the best dancers enters the village from the forest wearing a mask and joins the dance, doing special dance moves. This dancer/character is called* àbàkújà*. You tell me that you visited this village. Then you say:*

mà ŋgá jɔ́n ákùmámbà, â àbàkújà (tè) à mbɔ́ àtʃə́ŋ.
I TAM see traditional.dance CONJ dancer TE PN_1 COP skill.

'I saw the traditional dance, and the lead dancer was excellent.'

One observation with respect to the part-whole bridging exemplified in (15) is that neither the NP with -*tè* nor the bare form is acceptable here. Instead, a construction involving both the original noun *ndâ* 'house' and -*tè* is required, as in (15b). This construction is preferred across nearly all part-whole bridging examples elicited thus far. The existence of this construction may, in part, block the use of NPs with -*tè* for part-whole bridging. In at least some cases where this construction is not preferred, part-whole bridging involving -*tè* is acceptable, as shown in (17). In addition, as shown in both (16) and (17), if bridging involving -*tè* is acceptable, -*tè* is generally not obligatory. A bare noun can be used as well.

(17) *Context: I go on a trip yesterday, return, and tell you*

mà ngá kə̀ maŋ. maŋ mɔ́ mbɔ́ ájòk. míntʃûa (mítè) mì̀ mbɔ́ ngùl.
1.S TAM go ocean ocean PN_6 COP severe waves TE PN_4 COP strong

'I went to the ocean. It was high tide. The waves were strong.'

The similarities between NPs with *-tè* and strong definites raise the question of whether or not meaning of *-tè* can simply be subsumed under the analysis given for strong definites. It cannot. To see why, consider the lexical entry for a strong definite determiner given in Arkoh & Matthewson 2013:10, following Schwarz 2009:260.

(18) Strong determiner: $\lambda s_r \lambda P.\lambda y : \exists! x(P(x)(s_r)\&x = y).\iota x.[P(x)(s_r)\&x = y]$

This lexical entry asserts the existence of an entity that is unique in a particular situation (s_r) and is equivalent to some DR that is already familiar: y. It is this connection to a familiar DR that proves problematic. Consider the following possibilities. If y ranges over weakly familiar DRs, then (18) predicts that both strong definites and NPs with *-tè* can be used, for example, to refer to the sun out of the blue. In fact, neither can. Thus, restricting y to weakly familiar DRs is too weak for both NPs with *-tè* and strong definites. On the other hand, if y is restricted to strongly familiar DRs, which is to say those that are introduced by linguistic expressions in prior discourse, (18) is too restrictive for NPs with *-tè*. In many examples above, NPs with *-tè* have antecedents that are not introduced by prior linguistic material. If the analysis of *-tè* were developed in terms of (18), the value of y would need to be limited to salient DRs. This is similar but not identical to the proposal that Arkoh & Matthewson (2013) make for the Akan determiner *nó*, for which they give the lexical entry in (18) but assume that y ranges over "hearer old" DRs. Comparing the two proposals and the data from Akan and Bulu in detail is a task for future work.

6 Conclusion

In this paper, I have demonstrated that an NP with *-tè* places two conditions on its antecedent. The antecedent must be a salient DR, and it must be unique among salient DRs in satisfying the descriptive content of the NP with *-tè*. I have argued that these conditions are not shared by any type of English definite or by the crosslinguistically attested category of strong definites. The Bulu data demonstrate that, in addition to the dimensions of familiarity and uniqueness, the dimension of salience is an important locus for variation in the meanings of definite determiners.

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