

Epistemic modality in Ghanaian Pidgin English

Anton Harry Nordén

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Supervisor: Henrik Bergqvist
Reviewer: Masja Koptjevskaja-Tamm
Examiner: Bernhard Wälchli



**Stockholms
universitet**

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Abstract/Sammanfattning

This study investigates the expression of epistemic modality in a corpus of Ghanaian Pidgin English (GhaPE). The epistemic expressions are manually identified and thereafter distinguished from each other in terms of grammatical status and their indication of different epistemic and evidential notions. 7 different elements are found, ranging from 1 pre-verbal marker, 1 adverb, 2 particles and 3 complement-taking predicates. The results indicate, in line with existing research, that to differentiate between usage properties of individual modal expressions it may be necessary to subdivide them in terms of not only epistemic but also evidential meanings. Moreover, a functional parallel between the GhaPE particle *abi*, the Swedish modal particle *väl* and the Spanish adverbs *a lo mejor* and *igual* is demonstrated, with respect to their simultaneous function of expressing epistemic probability and asking the hearer for confirmation. Finally, the results suggest, contrary to previous accounts, that the pre-verbal marker *fit* may indicate epistemic possibility without the addition of a preceding irrealis marker *go*. It is proposed that future researchers should make use of bigger corpora in order to arrive at a more ample conception of both individual modal categories and their interrelations.

Denna studie undersöker uttryck för epistemisk modalitet i en korpus av talad och skriven ghanansk pidginengelska (GhaPE). De epistemiska uttrycken identifieras manuellt för att därefter skiljas från varandra med avseende på grammatisk status samt deras uttryck för olika epistemiska och evidentiella kategorier. 7 olika former identifieras: 1 pre-verbal markör, 1 adverb, 2 partiklar och 3 verbala uttryck. Resultaten indikerar, i linje med existerande forskning, att förklaringen till varför ett specifikt uttryck används framför ett annat eventuellt måste innefatta hänsyn till både dess epistemiska och evidentiella betydelse. Vidare demonstreras en funktionell likhet mellan GhaPE-partikeln *abi*, den svenska modalpartikeln *väl* och dom spanska adverbena *a lo mejor* och *igual*, bestående i deras samtidiga uttryck för epistemisk sannolikhet och ett efterfrågande av bekräftelse från lyssnaren. Slutligen föreslår resultaten, i kontrast till vad som tidigare hävdats, att den pre-verbala markören *fit* kan uttrycka epistemisk möjlighet utan att föregås av irrealis-markören *go*. Framtida forskning kan med fördel använda sig av större korpora för att nå en mer helhetlig bild av både individuella modala kategorier och deras inbördes relationer.

Keywords/Nyckelord

Epistemic modality, evidentiality, Ghanaian Pidgin English, corpus analysis
Epistemisk modalitet, evidentialitet, ghanansk pidginengelska, korpusanalys

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Abbreviations

ABI	ability
CAU	causative
COP	copula
CPL	complementizer
DEF	definite article
DEO	deontic modality
EMP	emphasizer
FOC	focus marker
GhaPE	Ghanaian Pidgin English
INT	intentionalis
IRR	irrealis
L1	first language
L2	second language
NEG	negator
NPU	non-punctual aspect (progressive, habitual)
PB	plural bound pronoun
PO	plural free object pronoun
PST	past tense
QP	question particle
REF	referential marker
S	singular free subject pronoun
SB	singular bound pronoun
SEQ	sequential tense
StE	Standard English
TPC	topic marker
1SG	first person singular
???	unclear

(The abbreviations are partly adopted from Huber 1999)

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Presentation of examples

The GhaPE examples are presented as in the schematic illustration below.

Example no.	Speaker:	<i>GhaPE orthography</i>
		GLOSSING
		‘English translation’
		(Audio/text file reference)

The first row gives the language example written in a GhaPE orthography (explained below) and a speaker pseudonym (see below). The second row gives an interlinear morpheme-by-morpheme gloss whereas the third row offers a free translation into English. If the example is taken from my personal corpus (i.e. not cited from other authors), a fourth row will refer to an audio (or text) file which is named according to the following format: the date of recording followed by the name of the elicitation task used, occasional further information that distinguishes the file (e.g. “Part1”), the pseudonym(s) of the speaker(s) and a time indication showing where in the audio file the example was uttered (e.g. “20151208_FamProb_Part1_C25-C28 02:50”).

Speaker pseudonyms

Individual speakers are referred to using pseudonyms, which are constructed as either 1) the letter C (short for language consultant) followed by a number, indicating that it was the *n*-th language consultant I worked with, or 2) a letter from A-Z indicating who made the first utterance in the recording session (i.e. A was the first to speak, B the second one, and so on). The second variant is used in cases where I lack metadata about the individual speaker. Specifically, I cannot connect him or her to an individual entry in the metadata directory – where speakers are referred to using *C_n* pseudonyms – but only say that he or she is one among e.g. C7-C12.

GhaPE orthography

The transcription system applied in the present thesis is based on Standard English (StE) orthography. This means that words that have StE counterparts are spelled as in English (e.g. *this, that, I, you*). Words that are lacking from StE are in turn written according to orthographic variants used by (some) speakers of Ghanaian Pidgin English (GhaPE; e.g. [i] <e> ‘3SG’, [raidi:] <rydee> ‘right now’, [sekɔf] <sekɔf> ‘because’. Note however that the orthography used by speakers is not formalized – spelling is both inter- and intraspeaker variable. In other words, individual speakers can have their own preferred orthographic variants and even the same speaker can spell a word differently from time to time. The system used in this thesis is not based in a phonetic alphabet, and neither in an existing phonemic orthography (as that developed in Huber 1999: 176). The reasons for this choice are two-fold: firstly, it was a matter of time – writing “English” was faster than writing phonemically – and secondly, my belief is that it makes the text accessible to a wider audience, not least the language consultants that I have worked with, who themselves use variants related to this system.

1. Introduction

This study attempts to describe not primarily what is said, but how that which is said is qualified, conditioned or limited. For example, I can say that *I left the keys on the table*. Alternatively, I can state that *I am sure that I left the keys on the table*, or, given other circumstances, that *I don't know if I left the keys on the table*. Apparently, the proposition (*I left the keys on the table*) that describes an event can be framed in different ways, or given a certain status. The semantic domain which these qualifying devices evoke is called *epistemic modality*. Epistemic modality is an important device not least in academic writing (see e.g. Hyland 1994), but also in everyday conversations, functioning as e.g. a way of “avoiding playing the expert” (Coates 2003: 338).

The present study concentrates on the expression of epistemic modality in Ghanaian Pidgin English (GhaPE), one of the least researched varieties of West African Pidgin English (Huber 2012: 394). From what I know, no previous studies of GhaPE have specifically targeted the expression of epistemic modality, which renders this topic an interesting area of research. I was introduced to GhaPE by a professor at Stockholm University, who in turn was informed by a colleague at the University of Ghana-Legon. Through the collaboration between the two universities, carried out within the framework of the Linnaeus Palme programme, and with financial means granted through the Sida-sponsored scholarship programme Minor Field Studies (for more information about the programmes, see Sida 2016), I and my fellow classmate Carolina Lindmark were able to spend two months in Ghana in order to collect data. The project of studying GhaPE was, as mentioned above, suggested by a Ghanaian researcher. The English-lexifier language was considered a fairly manageable topic for two students with minimal previous experience of the region in which it is spoken. Later, when Carolina and I thought of individual topics of our Magister theses, I decided in consultation with my Swedish supervisor, on the basis of the nature of the collected data to focus on epistemic modality.

I want to give a big thanks to the people involved during the process.

2. Background

The notion of modality, although a frequently studied topic, has been defined in various ways. The Oxford Dictionary of English Grammar (2014) gives the following definition: “The semantic concept of modality is concerned with the expression of notions such as possibility, probability, necessity, likelihood, obligation, permission, and intention [...]”.

Palmer (2001: 1) argues that modality has in common with tense and aspect that they all are “concerned with the event or situation reported by the utterance”. However, modality stands out in that it concerns neither the time nor the nature of the event, but rather “the status of the proposition that describes the event”. It has been pointed out that “unlike the categories of time and aspect, which, in spite of disputes, can be defined in straightforward and coherent semantic terms, modality turns out to be very hard to delineate in simple, positive terms” (Nuyts 2006: 1) (cf. e.g. the respective definitions of these categories in the above mentioned Oxford Dictionary of English Grammar).

Nuyts (2006) surveys different views on modality, identifying both what he considers to be its three traditional categories (i.e. dynamic, deontic and epistemic: see below) and in which key aspects the characterization of modality is at variance among scholars. The overall definition of modality in Nuyts (2006) is much like Palmer’s (2001): “a semantic subfield of the wider domain of TAM categories or qualifications, one which is complementary to semantic domains such as tense/time and aspect.”

While it may be hard to give a concise definition of the notion of modality, Nuyts says that it is common practice to circumvent this by posing a number of more specific categories of modality. He thereafter points out three main ways in which the treatment of modality has differed: 1) in drawing the outer boundaries of the set of modal categories (e.g. whether evidentiality is modal: see below), 2) in dividing between modal categories and 3) in the proposal of which features link the categories together (Nuyts 2006: 1-2). However, the notion of epistemic modality – the primary topic of the present thesis – is the least disputed of the three traditional categories (the other two being deontic and dynamic) (Nuyts 2006: 6). In the following, deontic and dynamic modality will receive a brief treatment, where the emphasis will be put chiefly on how their exponents have already been described in GhaPE (e.g. in Huber, 1999), and less on alternative theoretical approaches. The various views on epistemic modality will be described in more detail, and here the bulk of controversy lies in its relationship to evidentiality. Furthermore, there will be a section on the proposed subdivisions of epistemic modality (into e.g. subjective/objective and performative/descriptive uses).

2.1 Deontic and dynamic modality

Traditionally, deontic modality is understood as an expression of permission or obligation. This may be generalized as concerning the degree of moral desirability of the state of affairs described in the utterance (Nuyts 2006: 4-5). In GhaPE, deontic modality can be expressed by the pre-verbal marker *fo* (Huber 1999: 223) (see the examples below).

01. *dε polis fɔ^l get paua*
DEF police DEO get power
‘The police should have power.’
(cited from Huber 1999: 223)

^l In Huber’s (1999) phonemic orthography, the marker which is here rendered as <fo> is written <fɔ>. Huber’s orthography is preserved in examples cited from him.

02. A: *abi e grow e fo go school*
*abi*² he grow he DEO go school
 ‘Since he’s grown he should go to school, right?’
 (20151208_FamProb_Part1_C25-C28 02:50)
03. E: *you fo attache description sef*
 you DEO add description FOC
 ‘You should add some descriptions.’
 (20151208_FamProb_Part1_C25-C28 04:09)

The above examples all concern degrees of moral desirability, but do not exhibit any expressions of permission, which is the second notion traditionally subsumed under deontic modality. What concerns permission, it seems in GhaPE to be expressed not by *fo*, but by another pre-verbal marker *fit*, which may also indicate dynamic modality. Dynamic modality is generally taken to include the notion of a capacity or ability of the first argument of the predicate (e.g. *That kid can sing like Frank Sinatra*; Nuyts 2006: 2-3). Huber (1999: 222-223) places *fit* under the heading of “Ability and permission”, which thus covers both the dynamic modal notion of ability and the deontic modal notion of permission. Below are examples of *fit* used in both senses, i.e. as indicating either ability or permission. Following Huber (1999), *fit* is glossed as ABI (short for ability) throughout, even where its actual meaning is permission (see example 5 below, where the meaning of *fit* is indicated on the far right).

04. *dè fit vanish bikəs dè get medisĩ* (physical ability)
 3PB ABI vanish because 3PB get medicine
 ‘They are able to vanish because they have charms.’
 (cited from Huber 1999: 222)
05. *ju pipu fit put de tfif bat de tfif stil gò* (permission)
 2S people ABI put DEF chief but DEF chief still IRR

de anda wi
 COP under IPO
 ‘You people may install the chief, but the chief will still owe allegiance to us.’
 (cited from Huber 1999: 223)
06. C30: *i too i no go fit produce money then use am* (ability)
 she TPC she NEG IRR ABI produce money then use it
 ‘As for her, she’s not able to produce the money she uses by herself.’
 (20151215_FamProb_Part2_C30 03:38)

An additional notion which may be included within dynamic modality is physical obligation (what Nuyts (2006: 2) terms “a need or necessity for the first-argument participant”). Huber (1999: 223) states that the marker *wan*, primarily indicating volition or intention, may by extension express physical obligation (see the example below).

07. *à wan go pis*
 1SB DEO [sic] go piss
 ‘I have to go and urinate’
 (cited from Huber 1999: 223)

² In lack of a precise gloss of the multifunctional particle-like element *abi*, it is simply glossed as itself in italics. However, the meaning it contributes in example 2 is reflected in the free translation as the final ‘right?’. For more on *abi*, see section 4.1.3.

Note that Huber glosses *wan* in the above example as expressing a type of deontic modality. This seems to clash with Nuyts' (2006) definitions of deontic and dynamic modality, as one of Nuyts' examples of the dynamic category is a near-equivalent to Huber's above example (termed deontic):

08. Excuse me for a minute. I **have to** go to the bathroom urgently.
(cited from Nuyts 2006: 3)

This definitional conflict may serve to illustrate that there are several ways to determine what space a certain category of modality occupies. Below follows a description of different ways to delimit the category of epistemic modality.

2.2 Epistemic modality

Epistemic modality is typically defined as the speaker's (or someone else's) estimation of a degree of possibility, probability or certainty that what (s)he expresses in the clause is true or not (cf. e.g. Nuyts 2006: 6 and de Haan 2006: 29). See the examples below:

09. a. Someone is knocking at the door. That **will** be John.
b. This manuscript is damned hard to read. **Maybe** some more light can help.
(cited from Nuyts 2006: 6)

will in 9a is an English modal auxiliary, while *maybe* in 9b is a modal adverb. They both indicate that the speaker who utters the sentences estimates the degree of probability that the propositions ('that is John; some more light can help') are true. In functional linguistics, it is common to assume that the degree of certainty (or probability) may vary all the way along a polar scale, i.e. from absolute certainty that something is true, via various stages of probability down to absolute certainty that it is not true (Nuyts 2006: 6).

As for GhaPE, to my knowledge only one epistemic form has hitherto been explicitly described: the ability marker *fit* may according to Huber (2013) express epistemic possibility if (and only if) it is preceded by the irrealis marker *go*. Example 10 below illustrates this usage:

10. *wataim à gò fit get mɔni?*
When 1SG IRR ABI get money
'When will I be able to get money? OR: When will I possibly get the money?'
(cited from Huber 2013; the original example source is Huber 1999: 178)

2.2.1 Subdivisions of epistemic modality

As mentioned in the introductory paragraphs of section 2, there are a number of ways to subdivide the notion of epistemic modality. The subdivisions are attempts to distinguish between different usages of individual modal expressions or expression types (Nuyts 2006: 13). One division has been drawn between subjective and objective epistemic modality (Nuyts here cites Lyons 1977, Coates 1983 and Palmer 1986). An example of this distinction is found in Yang, Zheng & Ge (2015):

11. a. **I'm sure** we should sell this place. (subjectivity)
b. **It's likely** that they've heard by now. (objectivity)
(cited from Yang, Zheng & Ge 2015: 2)

Yang et al. (2015: 2; citing Thompson 1996: 60) argue that 11ab above differ with regard to the speaker's claim of responsibility for what is being expressed. In 11a, the speaker overtly marks his or her responsibility (*I'm sure*), while in 11b the attitude is more "objectively" stated (*It's likely*). Another way of defining subjective and objective epistemic modality is proposed by Lyons (1977: 797ff), who distinguishes between when the speaker, on the one hand, means that there is an

objectively measurable chance that the state of affairs is true, and, on the other hand, when (s)he is guessing (cited in Nuyts 2006: 13).

The analysis by Yang et al. (2015) above seems to mirror, only stated in other terms, Nuyts (2006: 13-14) division between subjectivity and intersubjectivity. This division pertains to whether the speaker presents the evaluation as being his or her own responsibility, or as shared with others (not necessarily with the hearer). Nuyts notes that the expression of these notions may require the option to code the issuer of the evaluation (so that it is restricted to verbal and adjectival expressions; see below). Cases where the issuer is not coded (see 12c below) are regarded as “neutral” with regard to subjectivity and intersubjectivity.

12. a. **I think** they have forgotten to take the key. (subjective)
b. **It is quite probable** that they have forgotten to take the key. (intersubjective)
c. **Probably** they have forgotten to take the key. (neutral)
(cited from Nuyts 2006: 14)

In 12a, the first person subject indicates subjectivity, while in 12b, the impersonal subject expresses intersubjectivity. These expressions have, as we shall see in the following section, ties to the notion of evidentiality. Following Nuyts (2001: 33ff), the division illustrated in example 12 will indeed be termed as one of (inter)subjective *evidentiality*, given that it pertains to the status of the evidence on which the epistemic evaluation is based (i.e. whether the evidence is known by the speaker alone or shared with others).

An additional difference between epistemic modal expressions lies in whether or not the speaker is committed to the evaluation. The former case is termed performativity and the latter descriptivity (Nuyts 2006: 15). Nuyts states that with a performative expression, the speaker commits him- or herself to the evaluation at the moment of speech. A descriptive expression indicates that the speaker is reporting on an evaluation, held either by someone else or the speaker – only not at the moment of speech – or alternatively, that the speaker poses a hypothetical evaluation. Like the subjective and intersubjective expressions introduced above, a descriptive evaluation requires marking of who issues it. This is the case at least in West Germanic languages (Nuyts 2001). In verbal and adjectival epistemic expressions, there is the option to change the grammatical subject (between first and non-first person) and/or the tense (between non-past and past) – thus the speaker may report on other’s evaluations or subjective attitudes that are not held at the moment of speech (Nuyts 2006: 15).

2.2.2 Epistemic modality and evidentiality

Evidentiality may be defined as the marking of the information source upon which an utterance is based (Aikhenvald 2004: 1). The various information sources, or in other words, types of evidence that are marked may be put into two main categories, namely direct and indirect evidence (de Haan 2013). In de Haan’s article, the direct evidence category subsumes information perceived through the speaker’s senses, e.g. visual or auditory evidence. The indirect category includes inferential evidence, where the speaker deduces something from available physical evidence, and reportative (hearsay) evidence, where the speaker has heard something from others. While some authors label only the obligatory marking of information source as evidentiality (e.g. de Haan 2013), such an approach would not be fruitful here, given that the status of evidentiality in English, Akan, Ewe and Ga (i.e. GhaPE’s lexifier and main adstrates) is merely lexical (Nuyts 2006: 10). Consider the below examples of (lexical) evidential expressions in English:

13. a. I’ve **noticed** that he’s quite down lately.
b. **Apparently** he’s in his office – at least, his coat is hanging here and I hear voices inside.
c. Your explanation sounds very **plausible**.
d. **I hear** he’s won the class competition this year.
(cited from Nuyts 2006: 10)

Nuyts labels the above examples as experiential (13a, sensory perceived), inferential (13b, deduced from available physical evidence), reasoned (13c, derived from general background knowledge) and hearsay (13d). Note that the meaning of these examples may be interpreted as bearing implications of probability – just as the sentences in 12 above (*I think [...]*, *It is quite probable [...]*) indicate the speaker's source of information. The connection between evidentiality and epistemic modality is, as pointed out by Nuyts (2006: 11), fairly obvious, given that “epistemic judgements are conceptually based on evidence, and evidentials refer to types of latter”. The exact nature of the relation between epistemic modality and evidentiality is however an ongoing debate. Dendale & Tasmowski (2001: 341-342) describe the main views on this matter as follows: “Three relations between the notions [...] can be found in modern studies: *disjunction* (where they are conceptually distinguished from each other), *inclusion* (where one is regarded as falling within the semantic scope of the other), and *overlap* (where they partly intersect)”. In the present study, epistemic modality and evidentiality will be treated as separate phenomena (of marking probability and information source, respectively), while simultaneously acknowledging that they may co-occur in an utterance (see e.g. examples 12-13).

2.2.3 Epistemic modality in different disciplines

This section briefly surveys how epistemic modality has been treated within different areas of research, beginning with examples from cognitive linguistics and further on to formal semantics and pragmatics. Parts of what is mentioned below will later be adopted into the theoretical and methodological framework of the present study.

Jan Nuyts, whose introductory chapter to modality (Nuyts 2006) has guided much of the previous section, has worked on epistemic modality from a cognitive-pragmatic perspective (see e.g. Nuyts 2001). Nuyts “paradigmatic approach” takes its starting point in the function of epistemic modality, and then goes on to identify the forms that may be used to express it (2001: 24). The goal of this approach is chiefly to answer what functional motivations govern the use of a certain form of expression among others (assuming no semantic equivalence between different forms) (Nuyts 2001: 30). Other cognitive accounts are e.g. Talmy's (1988) theory of *force dynamics*, which was further developed by Sweetser (1991) to cover epistemic modality.

Within formal semantics, modality in general is traditionally accounted for within the framework of *possible worlds semantics* (von Stechow 2006: 3; see e.g. Kratzer 1981, 1991). A basic idea in this approach, according to von Stechow, is that modals express quantification over possible worlds.

In pragmatically oriented studies, epistemic modality has been shown to fulfill a number of functions. Coates (2003: 333) argues that epistemic modal expressions may achieve several things at once – other than expressing doubt or certainty, they can show e.g. “sensitivity to others' feelings”, be used when “searching for the right word” and to “[avoid claiming] expert status”. A convenient term which captures all of the above is *mitigation*. Mitigation refers to the weakening of an utterance, and may be understood in opposition to *reinforcement* which strengthens what is said (Caffi 2006: 2). The notion of mitigation builds upon the concept of illocutionary acts (Austin 1962, Caffi 2006: 51), and thus one may say that part of what mitigation does is to serve in weakening the force of speech-acts. In Caffi's (2006: 91) overview of factors central to mitigation, she notes that it is also tied to notions such as self-presentation (see e.g. Goffman 1967, Brown & Levinson 1987) and the negotiation of what conversational moves should mean.

Within pragmatics, one may encounter the term *epistemic stance*. Stance is a wide concept which, according to Du Bois (2007: 163), refers to social actors' evaluation of objects, positioning of subjects (self and others) and aligning with other subjects. In Du Bois' words, stance may, from the perspective of the speaker, informally be defined as “I evaluate something, and thereby position myself, and thereby align with you” (2007: 163).

2.3 Ghanaian Pidgin English

Ghanaian Pidgin English (GhaPE) has around 5 million speakers and is used primarily in the urban areas of southern Ghana (Huber 2012: 394). It is considered an offshoot of the creole Krio, spoken in Sierra Leone, which in turn has part of its roots in a number of Afro-Caribbean creoles (see e.g. Huber 1999: 59-129 and Parkvall 2000: 126, 151; the latter cited in Corum 2015: 6). GhaPE may be divided into two varieties: an “uneducated” one, functioning as a lingua franca, and an “educated” variety (also known as Student Pidgin), which rather functions as an in-group language (Huber 2012: 394-395, Corum 2015: 12). As for the “uneducated” variety, its label implies simply that it is acquired and used in non-educational contexts (Huber 1999: 142). The “educated” variety refers to a variety which is most often learned from secondary school and upwards. Given that the speakers of Student Pidgin often are competent in both Standard English and have one more indigenous language in common, this variety is, as mentioned above, to be regarded as an in-group language rather than a lingua franca (cf. also Rupp 2013, who investigates factors motivating the use of Student Pidgin).

GhaPE’s main lexifier is English and its adstrates belong to the Kwa and Gur groups of the Niger-Congo family (Huber 2013: 167). The most comprehensive grammatical descriptions to date are found in Huber (1999) and Amoako (2011; which is based on his 1992 PhD thesis). What concerns epistemic modality in GhaPE, it has to my knowledge only received very minor previous treatment (see example 10 in section 2.2), although Huber (1999: 218-228) describes its TMA system.

2.4 Aims and research questions

The present study aims to identify and describe expressions of epistemic modality in a corpus of spoken Ghanaian Pidgin English (GhaPE). The following research questions will be addressed:

1. What expressions of epistemic modality are there in the corpus?
2. What categories of epistemic modality (i.e. possibility, probability or certainty) do these expressions indicate?
3. Can the expressions be subdivided in terms of their indication of subjective vs. intersubjective evidentiality or performative vs. descriptive uses?

3. Method

3.1 Data

The present study is based on an audio-recorded corpus of dialogues and monologues in Ghanaian Pidgin English (GhaPE) of around 5 hours in length. The data were collected primarily at the University of Ghana-Legon during a field trip by the author and Carolina Lindmark between November 2015 to January 2016. Two conversations were recorded at the Presbyterian Boys' Secondary School, Legon, and another one near Wli Falls, Hohoe. The data were transcribed and translated with the help of language consultants fluent in GhaPE.

3.1.1 Data collection

The corpus from which the present data have been extracted consists of a number of texts of different types. This section illustrates the overall contents of the corpus by describing the means of data collection. In order to collect 'naturalistic' language data (i.e. relatively spontaneous narratives, conversations etc.), a number of (mostly) semi-structured tasks were presented to the language consultants. The use of semi-structured tasks reduces the risk of bias towards the specific questions asked by the interviewer, compared to e.g. structured elicitation (Bowerman 2015: 131). An additional reason not to focus on structured elicitation was, in this case, the fact that the collectors were not yet knowledgeable enough to ask the 'right questions', i.e. to choose a specific area of investigation. The solution was therefore to adopt a quite opportunistic approach, by eliciting broad data and subsequently – from the resulting materials – determine an area of interest. The nature of the data is nevertheless obviously restricted, in terms of overall content, by the specific tasks that were used. Table 1 below gives the names of the tasks, information about how they are construed in general (e.g. if a task is a picture prompt or a word list) and their respective authors.

Table 1. Elicitation tasks (presented in alphabetical order)

Elicitation task	Type of task	Author(s)
Frog Story	Picture prompt	Mayer (1969)
My Brother Task	Map task	Lindmark (2015); see Appendix 1
Myself Task	Autobiographical narrative	See Appendix 2
Swadesh 100 list	Word list	(Swadesh 1971: 283)
The Ethnography of Emotions	Semi-structured interview	Le Guen (2009)
The Family Problems Picture Task	Picture prompt, problem-solving task	(San Roque et al. 2012)
Topological Relations (BowPed)	Structured elicitation (of terms for spatial relations)	Bowerman & Pederson (1992)

In what follows, the nature of each task is explained further. Beginning with Frog story, this task entails asking one or more consultants to make up a story based on the picture book "Frog, Where Are You?" (Mayer 1969). The book consists only of pictures, so that the consultant has to produce his or her own linguistic representation of what happens. The overall plot of the Frog story centers around a boy, his dog and his pet frog. One morning, the boy realizes that the frog has escaped from the jar in which it was trapped. The boy and his dog embark on an adventurous search for the lost frog, and finally find it behind a log in the woods. Among linguists, the book is popularly known as simply the "Frog story". According to Slobin (2005: 115), the Frog story was first utilized as a research tool by Bamberg (1985, 1987).

The second task, "My Brother Task" (Lindmark 2015: see Appendix 1), is a map task, i.e. it entails asking a consultant to describe a route on a map. The goal is to guide the listener to his or her brother.

A label “YOU” marks the starting point on a road near some traffic lights. The road to “my brother” winds along a number of entities, e.g. an elephant and a school building, in such a way that the consultant may tell you to “pass right/left” or “continue straight” at a certain point.

The third task, called “Myself Task” (see Appendix 2), was created with the aim of eliciting a written auto-biographical narrative. The consultant is asked to write a short essay about him- or herself. Additionally, the sheet of paper on which the task was distributed also contains a metadata table to be filled out by the consultant (thus facilitating the collection of metadata).

The “Swadesh 100 list”, the fourth task, follows Swadesh’s (1971: 283) original list except for some minor editions (a few obscure words were replaced with new ones). The list was distributed with the words in English and corresponding empty slots for GhaPE variants and optional further comments. An instruction was added, stating that if the GhaPE word was deemed identical with its English correspondent, the consultant could skip filling it in.

“The Ethnography of Emotions” is the fifth task. It is based on the guide by Le Guen (2009) and The Max Planck Institute of Psycholinguistics on investigating cross-cultural emotion categories in language and thought. The procedure of this task began with positing a number of emotions (e.g. sadness, happiness), and then asking the consultant about these (e.g. “Can you recall the last time when you were happy? How did it feel?”) with help from the questionnaire provided in Le Guen’s (2009: 41-42) guide.

The sixth task, “The Family Problems Picture Task”, consists of 16 picture cards which were utilized in 3 steps: 1) the consultant(s) were asked to describe the contents individual pictures, handed out one by one in a random order, 2) the pictures were then to be sorted in a coherent (chronological) order and 3) based on the line-up created in step 2, the consultant(s) were asked to tell a story about what happens in the pictures. The plot revolves around a man with drinking problems who hits his wife and goes to jail. However, the sorting of the cards is quite optional and several different interpretations of the course of events are possible (cf. San Roque et al. 2012: 149-151). Although San Roque et al. (2012) recommend using this task with minimally 2 people, it was due to practical circumstances (e.g. the difficulty of arranging meetings with several people) mostly used with single consultants (during 5 out of in total 7 sessions).

The seventh task, “Topological Relations (BowPed)”, consists of 71 drawings depicting topological relations between objects, e.g. a cup on a table and an apple inside a bowl. In this task, a consultant was asked to answer the question “Where is the [object in a specific picture]?”.

When it comes to expressions of epistemic modality, these may be expected to be found in most of the texts resulting from the above tasks, except perhaps the Swadesh list – based on the assumption that they all may very well prompt the consultant to reflect upon the likelihood of a certain state of affairs (e.g. ‘I’m not sure whether what I see in this picture is an X or a Y’). The chance of finding expressions of epistemic modality is probably especially high in the data resulting from The Family Problems Picture Task, given that it is designed to target precisely these types of features (among others). The authors of the task state that “the problem-solving nature of the task stimulates participants to express [...] their own processes of observation, inference, and discovery, and *judgments of doubt or certainty*” (San Roque et al. 2012: 140; emphasis added).

3.2.2 Data selection

Out of the total 5 hours of speech in the corpus, around 3,5 hours have been transcribed. It is only the transcribed material that has been analyzed for this study. The selected texts correspond to 17 different recording sessions (7 renditions of the Frog story, 6 Family Problems Picture Tasks, 1 Ethnography of Emotions and 2 Myself Tasks). For reasons of space, not all examples of epistemic forms have been included in this paper. However, in Appendix 3 there is a table with frequency measures of all forms presented during section 4, showing their distribution over the selected texts.

3.2.3 Language consultants

In the texts selected for the present study, there are 26 participants (all males), of which 25 participated in audio recordings and 1 contributed only with written material. The mean age of the sample is 22 and the median age is 22 (the oldest consultant was 31, the youngest 15)³. The younger consultants were attending secondary school, whereas the older consultants were either currently or previously in tertiary education.

All language consultants that contributed with data to the whole corpus (non-transcribed recordings included) are in total 51 individuals (46 males, 5 females), of which 37 participated in audio recordings and 14 contributed only with written material. The mean age of this sample is 20,7 years and the median age is 20,9 (the oldest consultant was 31, the youngest 14)⁴.

3.2 Ethics

Part of conducting linguistic fieldwork is to establish a framework of professional ethics. In the present study, the ethical framework is based upon the requirements and principles adopted by *Humanistisk-samhällsvetenskapliga forskningsrådet* (HSFR; Vetenskapsrådet 2002), a Swedish research council for the humanities and social sciences. HSFR posits two overarching requirements, of which the first states that ethical research should exhibit good scientific quality and produce beneficial knowledge. This requirement must be weighed against the second, which is divided into four basic principles that pertain to the protection of individuals (see below):

- I The participant has to be informed of the purpose of the investigation, and their right to, at any point in time, cancel their participation. Any risk of discomfort or harm must be disclosed.
- II The participant has to give voluntary consent, and must be able to cancel their participation without any negative implications.
- III Information about the participant must be held confidential so as to eliminate the risk of unauthorized access.
- IV The information about participants may only be used for specific scientific purposes (which were disclosed before the participant gave their consent).
(based on Vetenskapsrådet 2002)

The above principles are a summary of HSFR's requirements, and indicate what measures the field researcher must take in order to protect the individuals involved. To ensure that this was achieved, I (and Carolina Lindmark, my co-worker and classmate) set up a routine which preceded each recording session. Every prospective language consultant, i.e. a person we wanted to work with, was first informed of 1) the purpose and nature of our research project, and that they were allowed to cancel their participation at any time, 2) that participation was completely voluntary, 3) that their name was to be replaced by a pseudonym (see the section "Presentation of examples"), eliminating the possibility of personal identification and 4) that the information about them was only to be used for linguistic analysis. The conditions were presented orally, and, in case the consultant was to perform a writing task, also in text (see Appendix 2 on Myself Task).

³ The information on age of the participants in the selected texts was calculated for only 20 of the 26 consultants, as age was not recorded for the remaining 6 individuals.

⁴ The information on age for all the participants in the whole corpus was calculated for only 37 of the 51 consultants, as age is unknown for 14 individuals.

3.3 Analysis and procedure

The definition of epistemic modality is adopted from Nuyts (2006) and reads as follows:

“[I]t concerns an indication of the estimation, typically, but not necessarily, by the speaker, of the chances that the state of affairs expressed in the clause applies in the world. In other words, it expresses the degree of probability of the state of affairs [...]” (Nuyts 2006: 6)

The corpus was manually analyzed in order to identify expressions of epistemic modality, with basis in the above definition and assumptions from conversation analysis (see below). The analysis of forms has been checked with language consultants fluent in GhaPE (in other words, the analysis is informed by *native speaker judgements*. However, it is uncertain to what extent, if any, GhaPE enjoys L1 status, which renders the expression *native speaker* somewhat inappropriate). After having been identified as indicating epistemic modality (and, in applicable cases, additional evidential notions: see table 2 below), the forms were listed according to what notions they may express, e.g. ‘possibility’, ‘probability’ or ‘certainty’. The actual examples that are presented in this study are excerpts from the corpus, including as much context as was estimated to be needed for the reader to understand.

As Kärkkäinen (2003: 2) points out, an approach based on conversation analysis may recognize that epistemic expressions occur within sequences of turns-at-talk. Along the turns-at-talk, speakers accomplish conversational actions. This perspective, that situates the forms in an overarching conversational structure, can explain why the literal meaning of a form may be at variance with its discourse function(s) (Kärkkäinen cites Biber & Finegan 1988: 30 for mentioning this dilemma of form and function). It also widens the concept of epistemic modality to include instances that may be seen as discourse-based or pragmatic rather than semantic. In line with Palmer (2001: 18), this wide conception of epistemic modality will be called *notional*, so as to include meanings achieved at various linguistic levels.

The methodology shares a surface similarity with Nuyts (2001: 24) “paradigmatic approach” (mentioned in the Background section), which, taking its starting point in the function of epistemic modality, then goes on to identify the forms that may be used to express the function. While Nuyts most of all seeks to answer what functional motivations govern the use of a certain form among others, such an endeavour is beyond the scope of the present study. The illustrative similarity lies rather in the method of starting from function (i.e. a notional definition of epistemic modality), as opposed to starting from *a priori* forms.

During the analysis, a certain number of analytical categories were posed (presented in table 2 below), so as to be able to differentiate individual forms from each other. These categories have been presented during section 2, and are here repeated for sake of clarity. As seen in table 2, there are 3 subcategories of epistemic modality, namely epistemic (im)possibility, (un)certainty and (im)probability. There are 4 subcategories of evidentiality, namely direct (subsuming different types of sensory evidence) and indirect evidentiality (including inferential and hearsay evidence), subjective and intersubjective evidentiality and finally there is a distinction between performative and descriptive uses of modal expressions. (The columns are to be read as separate lists, i.e. a value in the left column does not correspond to a value in the right one.)

Table 2. Analytical categories used in the study

Epistemic modality	Evidentiality
(Im)possibility	Direct evidence (visual, auditory or other sensory evidence)
(Un)certainty	Indirect evidence (inferential or hearsay evidence)
(Im)probability	Subjective/intersubjective evidentiality
	Performative/descriptive use of modals

3.4 Delimitations

Given the limits of time, certain aspects which may be seen as constitutive of or closely related to the system of epistemic modality have nevertheless been left aside. In this section, three such possibly important but excluded aspects are presented. Firstly, the corpus contains what appears to be essentially English epistemic expressions, such as *I no know*, *I think*, *I sure*, *of course* and *probably*, which moreover seem to be used in more or less the same way as in Standard English. These will not be described in the Results section, assuming that it is more interesting to focus on “GhaPE-like” forms. Given that GhaPE as spoken at the universities of Ghana is an acrolectal variety (i.e. relatively close to Standard English (StE)) and that speakers may be prone to codeswitch to StE, it is difficult to say whether a form is “really” GhaPE or English. Nevertheless, the above forms are here considered to be enough close to their StE correspondences for them to be less interesting in the context of a study of GhaPE. (A possible exception from this principle is the verb *figa*, included in the Results section, which, judging from its phonological form, may be derived from the English *figure*. However, a consultant denied that it is related to the English word, and claimed that it does not mean ‘figure’ in GhaPE, but rather ‘think’. Therefore, *figa* is included in the study.)

Secondly, although a number of meanings and functions in addition to epistemic modality will be described (e.g. evidential meanings and pragmatic functions), the description of an element is by no means intended to be exhaustive. The reference to meanings and/or functions other than epistemic modality has the sole purpose of illuminating differences between expressions with overlapping features. Thus, the expressions that are presented in this study may be used for numerous more purposes besides expressing categories of epistemic modality.

Thirdly, the present study does not account for the possible effects of prosodic variation (e.g. intonation, stress or pausing) on epistemic expressions.

4. Results

In this section, the results of the corpus analysis are presented, in the form of a list of the expressions deemed to carry epistemic meaning, together with the analytic reasons as to why the expressions qualify as such. The results section is divided in two overarching parts, based on the grammatical status of the elements. A division in terms of e.g. which epistemic notions the elements express would not yield a fair representation, because, as we shall see, epistemic modality is but one of several notions they indicate. The so-called *particle-like elements* are expressions whose primary meanings appear to be other than the epistemic ones (i.e. *fit*, a modal marker of ability and permission; *more times*, a temporal adverb; *bi*, a specific indefinite determiner) and the morpheme *abi*, which appears to be derived from the Yoruba (Niger-Congo) question particle *ábi*. For sake of convenience, these expressions are grouped under a broadly construed notion of discourse (or pragmatic) particles. The so-called *verbal elements* are unified in that they all contain a verb (*figa*, a mental state verb; *be*, a copula; *check*, an appearance verb) and appear clause-initially. The individual expressions are described under separate headings. Each of these subsections starts with a description of the element's meaning, function and syntactic placement, which is then accounted for with reference to examples from the corpus and, occasionally, references to the literature on modality. Finally, the Results section ends with a summary of the attested epistemic modal and (in some cases) evidential meanings of the expressions.

4.1 Particle-like elements

4.1.1 (go) fit

The morpheme *fit* has previously been described as a pre-verbal mood marker expressing physical ability or permission (Huber 1999: 222-223) (see section 2 for a display of Huber's examples). In our corpus, however, (*go*) *fit* (i.e. optionally preceded by the marker of irrealis mood) appears in some cases to have an extended meaning of epistemic possibility. The following excerpts illustrate the usage of *fit* in this sense by four different speakers.

14. A: *I dey see some nigga bi e dey bend down e check like e dey start fire*
I NPU see some man REF he NPU bend down it look like he NPU start fire
'I see a (certain) man. He bends down, it looks like he starts a fire'

or something I no sure ??? wey there another shorty too dey
or something I NEG sure ??? CPL there another girl too COP
'or something, I'm not sure, and then there's another girl there too.'

B: *e be shorty?*
it COP girl
'Is it a girl?'

A: *yeah this one me I dey figa e be shorty*
yeah this one me I NPU think it COP girl
'Yeah, this one me I think it's a girl.'

B: *this one e go fit be shorty ey e dey take what watermelon or what*
this one it IRR ABI COP shorty ey she NPU take what watermelon or what
'This one it could be a girl ey, she handles what, watermelon or what?'

A: *e fit be watermelon*
i ABI COP watermelon
'It could be watermelon.'

B: *I see that thing*
I see that thing
'I agree.'
(20151208_FamProb_Part1_C25-C28 00:28)

In 14 above, A and B discuss the contents of a picture. A asserts that there is a man and a girl, which B questions: 'is it a girl?'. A argues that he thinks that the individual in question is indeed a girl, to which B replies that *this one e go fit be shorty ey* 'this one it could be a girl ey [...]', indicating that he now also entertains the epistemic possibility of the person being a girl. B then goes on to suggest that the person handles a watermelon. A replies using the same expression as B just used, namely *e fit be watermelon* 'it could be watermelon', thereby expressing an epistemic possibility that what the woman handles is watermelon.

Example 15 below is similar to 43 in that A accounts for what he thinks (introduced by the form *abi*, which in this context may be translated into 'I guess') and B answers that yes, he holds that proposition for possible (*i go fit be* [...] 'it could be').

15. A: *check like them dey house wey then get visitor abi dema grandpopi [...]*
look like they COP house CPL then have visitor abi their grandfather
'Looks like they're at home and then have a visitor, I guess their grandfather [...]'

B: *e go fit be dema grandpopi or dema popi or something I no know*
it IRR ABI COP their grandfather or their father or something I NEG know
'It could be their grandfather or their father or something, I don't know.'
(20151208_FamProb_Part1_C25-C28 02:23)

Example 16 shows a negated form of *go fit*, as it is preceded by the negation marker *no*. This seems to express a notion of impossibility, similar to the English 'cannot'. C argues that an individual in the picture 'cannot be' the kid that they have mentioned before. C also adds what evidence he has for this claim by using the conjunction *sekof* 'because' to introduce the conjoined clause *this one tall* 'this one is tall'.

16. C: *this no go fit be the kiddie sekof this one tall*
this NEG IRR ABI COP the kid because this one be.tall
'This cannot be the kid because this one's tall.'
(20151208_FamProb_Part1_C25-C28 02:41)

In 17 below, C21 and C22 discuss the contents of a picture, to them seemingly portraying an angry man. C22 asserts that the man appears to be angry still (implicitly referring to him having been angry in other pictures). C21 replies with a thoughtful, hesitant *mmm*, whereupon C22 prompts him to account for his view ('or how do you see it?'). C21 answers that *okay, e go fit be true* 'okay, it could be true', followed by an (unfinished) conjoined clause explaining why (*sekof*- 'because').

17. C22: *right for this picture e check like rydee no some anger bi still*
right for this picture it look like right.now TPC some anger REF still
'Right, in this picture it looks like right now, still some (certain) anger'

dey inside
COP inside
'remains (inside of him).'

C21: *mmm*
mmm
'Mmm'

C22: *or how you dey see am ???*
or how you NPU see it ???
'Or how do you see it?'

C21: *okay e go fit be true sekof*
okay it IRR ABI COP true because
'Okay, it could be true, because'
(20151204_FamProb_Part1_C21-C22 12:25)

The proposed possibility meaning of *fit*, the morpheme which, as mentioned above, previously has been ascribed a meaning of ability or permission (Huber 1999: 222-223), deserves a reference to the literature on modality. It has been demonstrated that the meanings of modal auxiliaries in many languages stand in a systematic developmental relationship to each other (e.g. Goossens 1983, Shepherd 1993, Bybee & Pagliuca 1985, Stephany 1986, 1993; cited in Nuyts 2006: 16). The relationship is such that certain meanings tend to be diachronically prior to others, i.e. that the meaning of a modal auxiliary may evolve from e.g. dynamic to deontic to epistemic. Another developmental path has been shown to go from dynamic to epistemic (see Nuyts 2004 on Dutch *kunnen* 'can, may') – which could be the case with regard to *fit*. Now, as *fit* is not classified as an auxiliary but rather a pre-verbal marker (Huber 1999), one may wonder whether this developmental pattern is applicable. Nevertheless, it is interesting to note that the possibility meaning of *fit* does not seem to have been attested before, and it remains to be established if this is a recent innovation or not.

As will be shown below, there is a temporal adverb *more times* 'often, most of the time' that occasionally appears to express an epistemic meaning of probability. This is, like *fit* above, also interesting from a historical perspective. Traugott (2006: 107) notes that in European languages (for which there are extensive historical records), expressions of modality seem to have been derived from non-modal expressions. Concerning modal adverbials and particles, Traugott claims that the source expressions are a diverse collection, including e.g. manner and measure adverbials (cf. German *vielleicht* 'much easy', Abraham 1991; cited in Traugott 2006: 129).

4.1.2 more times

More times is in its primary sense a temporal adverb meaning 'often, most of the time' or 'sometimes'. Example 18 below illustrates the 'most of the time' sense:

18. *as I make free aa I dey play ball more times I dey rock*
as I CAU free TPC I NPU play ball more times I NPU play
'When I'm free, I play football. Most of the time, I play'

as a midfielder like Essien or Schweinsteiger
as a midfielder like Essien or Schweinsteiger
'as a midfielder, like Essien or Schweinsteiger.'
(20151204_Myself_C21)

In certain instances, *more times* may however have an epistemic meaning, indicating that its *modificandum*, a proposition, probably is true. This meaning is suggested by the core meaning 'often', and may be paraphrased by English expressions such as *it is usually the case that, you would think that* and in terms of 'expectation'. Consider the following examples:

19. C21: *okay e be true more-*
okay it COP true more
'Okay, it's (probably) true'

C22: *More times more times*
more times more times
'You would think so, you would think so'
(20151204_FamProb_Part1_C21-C22 01:32)

In 19, C21 acknowledges that he thinks something is 'true'. Before he has time to add *more times* to his utterance, seemingly an indicator of 'probability', C22 anticipates him. In 20 below, C22 first starts declaring that he is 'sure' that the state of affairs described in the complement clause will be true, then cuts off the initiated matrix clause and replaces it with a clause-initial *more times (i go be [...])*, which seems to bear the meaning of rather high 'probability'.

20. [C21 and C22 try to identify the two individuals in the speech bubbles of picture 15]
C22: *I sure sey e go more times e go be in wife no in paddie*
I sure CPL it IRR more times it IRR COP his wife TPC his friend
'I'm sure that it'll- you would think that it's his wife and his friend.'
(20151204_FamProb_Part1_C21-C22 13:02)

In example 21, given below, C21 offers an interpretation of what picture 2 stands for. He argues that it depicts a man as he is leaving prison, rather than entering it, as C22 previously suggested. To this new proposal, C22 answers that *more times i be so*, which may be translated into 'rather that's what's up', implicating that C21's interpretation is 'more probable' than the previous one.

21. [C22 just proposed that picture 2 depicts the man as he enters the prison. C21 does not agree:]
C21: *here e be like as e dey lef ??? here e be like as e dey lef*
here it COP like as he NPU leave ??? here it COP like as he NPU leave
'Here it's like as he's leaving, here it's like as he's leaving'

C22: *as e komot for*
as he come.out for
'As he comes out of'

C21: *sekof yeah e be like as e lef the prison sekof like in shadas and*
because yeah it COP like as he lef the prison because like his clothes and
'Because yeah, it's like as he left the prison because, like, his clothes and'

things like like e make dirty ??? like the man dey take give am that
things like like he CAU dirty ??? like the man NPU take give him that
'things like, like he's dirty, like the man gives him that'

the policeman take give am that
the policeman take give him that
'the policeman gives him that (new clothes).'

C22: *more times e be so*
more times it COP so
'Rather that's what's up.'

C21: *yeah for sure*
yeah for sure
'Yeah, for sure.'
(20151204_FamProb_Part1_C21-C22 10:02)

4.1.3 abi

The form *abi* probably derives from the Yoruba (Niger-Congo) question particle *ábi*. This morpheme has been borrowed from Yoruba into NigPE (Mensah 2011; who also provided the translation ‘isn’t it’ of the NigPE variant), and, it appears, onwards from there into GhaPE. It is not directly translatable into ‘isn’t it’ in any of our attested cases, but the related meaning of ‘suggesting something and asking for confirmation’ (e.g. *It’s like this, isn’t it?*) seems to have been preserved. *Abi* has by one language consultant (C4) been described as indicating that the person who uses it *is uncertain and most likely needs an answer or a confirmation*. Another consultant described it as similar to the English ‘I guess’ or, in some contexts (see below) ‘I hope’.

Abi seems to be functionally quite similar to a Swedish modal particle *väl*. From my position as a native speaker of Swedish, during the analysis of the GhaPE *abi* I started suspecting that there was a somewhat corresponding expression in Swedish. When comparing the usage examples of *abi* (presented below) with Aijmer (2015) – who analyzes the meaning(s) of the Swedish modal particle *väl* by studying its translations into English and French – the parallel seems quite reasonable. *Abi* is both similar to and different from *väl*. The likeness is represented by four meanings that Aijmer ascribes *väl*, of which one is termed “Signalling a high degree of likelihood” (Aijmer 2015: 179-180, 190). Secondly, there is a meaning of “Expressing reservation” (Aijmer 2015: 180, 190). In this sense, *väl* was translated into English by a mental state predicate such as *I think, I suppose, I guess* or adverbs such as *maybe* and *perhaps*, expressing a tentative statement. A third similarity I find in the meaning of “Expressing inference and certainty”, which represents an evidential dimension. Finally, there are two meanings that Aijmer (2015: 182, 190) terms “Asking for the hearer’s opinion [or positive response]”. In this sense, *väl* is used “to turn a declarative sentence into a yes-no question”, to which the speaker expects a positive response. In summary, these meanings of the Swedish *väl* serve as an illustrative mirroring of the GhaPE *abi*. (In contrast to the attested functions of *abi*, however, *väl* can also be used to e.g. challenge the hearer or to form polite imperatives (Aijmer 2015: 190).)

Regarding the interrogative function of *abi*, a good example was quite often encountered in everyday conversations with speakers: *abi you dey bab?*, which one speaker translated into ‘I hope that you understand?’. *Abi* seems in this sentence to ask the hearer for confirmation, emphasizing the already (by phonological means) interrogative structure. This function, which pertains to the interaction between the speech participants, evokes a parallel to Du Bois’ (2007) concept of stance (as introduced in the Background section), specifically to the notion of *alignment* with the hearer. Consider also example 22 below, which illustrates the same construction (*abi you dey bab?*) as attested in of the recordings. C22 just has suggested what is in the picture, and then asks if C21 is on the same track.

22. C22: *abi you dey bab*
abi you NPU understand
‘I hope that you understand?’

C21: *I dey bab*
I NPU understand
‘I understand.’
(20151204_FamProb_Part1_C21-C22 13:57)

A similar example was produced by C19 and C20 as they were performing the frog story task (see 23 below). C20 suspected, perhaps because it felt strange that we wanted him to read from a children’s book, that we were trying to fool him. He asked C19 if that could be the case, to which he first replied with a hesitant *mmm*. C20 repeated his question ‘they want to fool us or what?’, whereupon C19 answered that ‘it’s their project that they’re doing’. Reassured by C19’s explanation, C20 then said that ‘ah okay, so I *abi* I can turn the next page’. *Abi* here appears to request the hearer’s confirmation, which makes it similar to the use in *abi you dey bab?*. However, it is also suggestive of a parallel to the English ‘I guess’ or ‘I suppose’, i.e. an *evidential* meaning indicating the mode of knowing. Can it even be labeled as an instance of *inferred certainty*, a category that is used “when the speaker has good

reasons to believe that the statement is true [...]” (de Haan 2006: 30)? I argue that there is indeed an inferential evidential meaning to this instance of *abi*, given that it appears to refer to reasoned knowledge. As is often the case, the evidential meaning also seems to imply a certain degree of probability (see e.g. Nuyts 2006: 11). In other words, C20’s use of *abi* expresses that he holds it for probable that he can turn the next page, while at the same time he requests C19’s confirmation of this claim.

23. C20: *the thing e check like they wan gyimi we or what*
 the thing it look like they INT fool us or what
 ‘The thing, it seems like they want to fool us or what?’

C19: *mmm*
mmm
 ‘Mmm’

C20: *they wan gyimi we or what*
 they INT fool us or what
 ‘They want to fool us or what?’

C19: *e be dema project them dey do*
 it COP their project they NPU do
 ‘It’s their project that they’re doing.’

C20: *ah okay so abi I fit turn the next page*
 ah okay so abi I ABI turn the next page
 ‘Ah okay, so I suppose I can turn the next page?’
 (20151203_FrogStory_C19-C20 00:48)

In 24 below, speaker A comments on the contents of a picture, suggesting that the depicted individuals have a visitor, who could be their grandfather. The proposition is qualified in two ways: first by the use of *check like* ‘looks like’ (further described below), and secondly by the morpheme *abi*. The function of *abi* in this context appears to be to mark the utterance as a fairly reasonable suggestion (i.e. epistemic probability). While the speaker is uncertain of whether it is really their grandfather who comes to visit, he may infer this conclusion from e.g. the person’s appearance (i.e. inferential evidentiality).

24. A: *check like them dey house wey then get visitor abi dema grandpopi*
 look like they COP house CPL then have visitor *abi* their grandfather
 ‘Looks like they’re at home and then have a visitor, I guess their grandfather.’
 (20151208_FamProb_Part1_C25-C28 02:23)

Example 25 below was uttered by the same consultant, asserting that if the boy in the picture has aged compared to the previously shown pictures (what another speaker just remarked), he should start attending school. The function of *abi* may here be interpreted as a case of inferential evidentiality, where the speaker infers from common background knowledge that children should go to school. The epistemic category may be one of probability.

25. A: *abi i grow i fo go school*
abi he grow he DEO go school
 ‘Since he’s grown he should go to school, right?’
 (20151208_FamProb_Part1_C25-C28 02:50)

In 26 below, a group of language consultants had been asked to describe individual pictures as they were handed out one by one. The first few pictures appeared to form a coherent story, but suddenly a picture did not seem to fit in (due to the fact that the pictures had been shuffled). C25 offered an

explanation as to why: ‘*abi* they didn’t arrange the story, so-’. Again, as in 25 above, *abi* seems to be a marker of inferential evidentiality, while simultaneously indicating that C25 finds the explanation probable.

26. C25: *abi they no arrange the story so*
abi they NEG arrange the story so
 ‘I suppose they didn’t arrange the story, so-’
 (20151208_FamProb_Part1_C25-C28 07:40)

Examples 27-31 below serve to further illustrate the argument put forth above, that *abi* appears to express both the category of inferential evidentiality and an estimation of probability. It is hard to claim, on the basis of solely 27-31, that they moreover indicate a request for confirmation from the hearer, but given the judgment from C4 that this meaning is conventionally present (see the first paragraph in this section) and example 22-23 (where the interrogative meaning is suggested from the utterance context), it can at least not be excluded that such an indication indeed is present.

27. A: *abi e no go bab abi e sock booze so e no go bab*
abi he NEG IRR understand abi he drink booze so he NEG IRR understand
 ‘I suppose he won’t understand, he drank booze, right, so he won’t understand.’
 (20151208_FamProb_Part3_C25-C28 00:42)

28. A: *e fini dey tok in story then e then in kiddi go walk abi e see*
he finish NPU tell his story then he then his kid go walk abi he see
 ‘He finishes telling his story, then he and his kid go for a walk, I guess he hasn’t seen’

am kyæ
 him for.a.while
 ‘him for a long time.’
 (20151208_FamProb_Part3_C25-C28 02:05)

29. Carolina: *What kind of person is a person who expresses sadness?*
 C4: *abi the person dey go through something e no dey like*
abi the person NPU go through something (s)he NEG NPU like
 ‘I suppose the person goes through something (s)he doesn’t like.’
 (20151127_Emoional_Sadness_C4 02:24)

30. C5: *a dey see sey abi then e be night tee wey the boy dey try watch*
 I NPU see CPL *abi* then it COP night time CPL the boy NPU try watch
 ‘I see that, I suppose, it’s night time and the boy tries to watch’

C6: *something for glass inside like that*
 something for glass inside like that
 ‘Something inside the glass.’

C5: *yeah*
 yeah
 ‘Yeah.’

C6: *eh abi like*
 eh abi like
 ‘Eh I guess like’

C5: *some frog too dey*
 a frog too COP
 ‘A frog’s there too.’

C6: *frog too dey inside*
frog TPC COP inside
'There's a frog in there.'

C5: *yeah*
yeah
'Yeah.'

C6: *like that*
like that
'Like that.'
(20151130_FrogStory_C5-C6 00:27)

31. C6: *for the this one what you dey see for here*
for the this one what you NPU see for here
'In the- this one, what do you see in here?'

C5: *okay abi the guy bed wey*
okay abi the guy sleep CPL
'Okay, I suppose the guy sleeps and'

C6: *the guy bed wey the dog too dey bed imbody*
the guy bed CPL the dog too NPU sleep next.to
'The guy sleeps and the dog also sleeps next to him.'
(20151130_FrogStory_C5-C6 01:31)

4.1.4 *bi* ((like) that)

bi is probably derived from the homophonous Akan morpheme /bi/, which has been labeled as a specific indefinite pronoun/determiner (Arkoh 2011, Arkoh & Matthewson 2012). In our data, only the determiner use has been documented, and it is a proposed GhaPE loan of this element that will be discussed below. The meaning of the Akan determiner can be translated into English as 'certain' (Arkoh 2011; see examples 32-33 below).

32. *Pàpá bí bá-à há*
Man REF come-PST here
'A (certain) man came here.' (cited from Arkoh 2011: 12, example 2)

33. *Kyìrèkyìrènyí Bǎǎ́ hwí-ì àbòfrá bí*
Teacher Baah cane-PST child REF
'Teacher Baah caned a (certain) child.' (cited from Arkoh 2011:15, example 8b)

Our data suggest that practically the same meaning may apply to GhaPE instances of *bi*. Example 34 below, which is part of a narrative written by a 19-year-old male student, has by two speakers (unfortunately there is no translation given by the writer himself) been interpreted as meaning '[...] a (certain) young girl':

34. *Wey I also dey love shoddies too. So if more tyms u get som kiddie girl bi for der aa, throw am gimme make I see top queer wae.*
'And I also love girls, too. So if at some occasion you've got a (certain) young girl over there, hand her over to me and let me handle it.'
(20151208_Myself_03)

An additional example of *bi* with this meaning is given in 35, produced by an 18-year-old male student as he performed an oral map task:

35. *if you see that street I dey tok aa e be some shop bi e dey*
 if you see that street I NPU talk TPC it COP a shop REF it NPU
- the road imbody*
 the road next.to
- ‘If you see that street I’m talking about, there’s a (certain) shop beside the road’
 (20151207_MyBrotherTask_C23 01:27)

The GhaPE *bi* also seems to have a secondary function, namely to signal ignorance or uncertainty on part of the speaker. (Whether this also holds for the Akan morpheme is a question that will be left open in the present thesis.) Example 36-37 illustrate this usage, invented during discussions about the meaning of *bi* by three GhaPE speakers in their mid-twenties:

36. *this man too e make serious bi*
 this man TPC he CAU serious *bi*
 ‘This man, he is serious (some way/not really).’

Firstly, one may notice that *bi* in example 36 could have scope over a predicative construction (*make serious*) rather than a noun. Secondly, the meaning of *bi* in this context was translated by the speakers into ‘some way’ or ‘not really’, indicating that a speaker who utters it may either not be sure that the man is ‘serious’, or alternatively that he is actually not ‘serious’ at all (i.e. a type of ironic meaning). The interesting meaning here is the one of ‘uncertainty’. Example 37 further illustrates this point:

37. *e go search the frog bi that*
 he go search the frog *bi that*
 ‘He went and searched for the frog (I’m not too sure about this).’

The meaning of *bi (that)* in 37 was said to contribute the meaning that a speaker who utters it is ‘not too sure’ about what they are asserting. If *bi (that)* has scope over only the frog or, more interestingly, the whole proposition, was not made clear during the elicitation session. Given that it has scope over the whole proposition, it is no longer properly labeled a determiner, but rather e.g. a modal particle. Also example 36 puts the determiner status in doubt (as *bi* follows a predicative construction rather than a noun), so much so that *bi* meaning ‘uncertainty’ would more appropriately be termed a (modal) particle.

The reader may notice that in example 37 *bi* is followed by *that*. According to the speakers who invented the examples, this does not entail any meaning difference. A fourth GhaPE consultant, a 29-year-old graduate, claims that *bi* may be followed by both *that* and an epenthetic *like*, rendering three logical possibilities: *bi*, *bi that* and *bi like that*, without any difference in meaning. Examples 38-39 below illustrate a seemingly synonymous use of *bi like that* and *bi*. Note however that the meaning of *bi like that* in 38-39 is not one of epistemic uncertainty (given that Kofi knows what girl he will meet): here it rather plays the role of a specific indefinite determiner. The construction (i.e. *some NP bi like that*) also functions as a way for Kofi to keep the identity of the referents secret.

38. [Kwesi asks his friend Kofi a question (given in English). Kofi answers (in GhaPE), but does not want Kwesi to know what girl he will meet:]
 Kwesi: What will you do this afternoon?
 Kofi: *I go visit some shorty bi like that*
 I IRR visit some girl REF like that
 ‘I’ll visit a (certain) girl.’

39. [Kofi had a lengthy talk on the phone, and Kwesi asks who he talked to. Kofi does not want Kwesi to know who it was:]
 Kwesi: Kofi, who was on the phone?
 Kofi: *some man bi*
 a/some man REF
 ‘A (certain) man.’

An interesting aspect of *bi* (*like that*), which at least in certain contexts seems to carry an epistemic meaning of ‘uncertainty’ (see 36-37 above), is whether it qualifies as an epistemic indefinite. Epistemic indefinites are existential determiners that “overtly mark a speaker’s lack of knowledge: they signal that the speaker is unable to give any further information about who or what satisfies her existential claim” (Becker, 1999; Haspelmath, 1997; cited from Alonso-Ovalle & Menéndez-Benito 2003). An example of the English epistemic indefinite *some* and its ignorance implicature is given in 40 below.

40. A: Some minister has been shot
 B: # Who?
 (Alonso-Ovalle & Menéndez-Benito 2003; Strawson 1974)

B’s question is pragmatically inappropriate (marked #) because A’s use of *some* implies that (s)he cannot identify who the minister is. Had A instead used the indefinite *a*, B’s question would have been appropriate. The question is whether this same pattern holds for the GhaPE use of post-nominal *bi*. On the one hand, the occasional ‘uncertainty’ (or e.g. ‘non-specific, ignorative’) reading of *bi* (see examples 36-37 above) suggests that it may function as an epistemic indefinite. On the other hand, the Akan *bí* is a specific indefinite, commonly translated into ‘certain’, implying that the speaker has some degree of knowledge about the referent. Alonso-Ovalle & Menéndez-Benito (2013: 119; footnote 1) explicitly exclude the English *a certain* from the group of epistemic indefinites for this very reason. An additional reason to doubt the element’s status as an epistemic indefinite is that for something to qualify as such, the ignorance implicature must be conventionalized (Aloni & Port 2010: 1). Whether the GhaPE *bi* is conventionally signalling ignorance on part of the speaker is hard to say without further, speaker-reviewed corpus data. For the post-nominal use (see examples 34-35 and 37), there are as of yet two confirmed ‘certain’ uses and one ‘uncertainty’ (or ignorance) use. A full-fledged epistemic indefinite should (as mentioned above) have its ignorance implicature conventionalized (Aloni & Port 2010: 1), which at this stage cannot, on basis of the sparse evidence presented here, be said about the GhaPE *bi* (*like that*).

4.2 Verbal elements

4.2.1 *figa*

The verb *figa* optionally occurs with the complementizer *sey* and has by one speaker been translated as a near-equivalent to the English *think*. Now, what does *think* mean in terms of epistemic modality? Nuyts (2006: 110-111) argues that mental state predicates are semantically different from modal adverbs and adjectives. Specimens of the two latter groups indicate relatively specific positions on an epistemic scale, while as for the former, this scale is not equally explanatory. Nuyts states that although e.g. *know* will express a higher degree of certainty than *think*, mental state predicates such as *think*, *believe*, *suppose* and *guess* are comparatively vague in terms of what positions of the epistemic scale they refer to. It is clear, Nuyts argues, that they concern positive values (beyond possibility) and that their use in a specific context may constrain the meaning – but their individual differences are better explained in terms of *evidentiality* rather than epistemic modality. As for predicates such as *know*, *guess* and *suppose*, they can be said to express different types of inferentiality (e.g. inferences based on evidence or intuition), while predicates like *think* and *believe* indicate not inferentiality but subjective evidentiality (i.e. that the speaker takes personal responsibility for the evaluation) (Nuyts 2006: 112). With help from Nuyts’ analysis, then, we may assume that *figa* ‘think’ can express both

epistemic probability and subjective evidentiality. Below, this assumption is weighed against examples from the data.

41. C22: *I figa sey in momi do something make am bo wey e come tap*
 I think CPL his mom do something CAU him angry CPL he SEQ sit
 ‘I think that his mom did something which made him angry, thus he came to sit’

some place
 some place
 ‘somewhere’

(FamProb_Part1_C21-C22 01:20)

In example 41, C22 comments upon the contents of a picture. He has just suggested that the boy in the picture card expects his father to come back after a period of absence. C22 states that *I figa sey* [...] ‘I think that [...]’ the boy has had a quarrel with his mother, as an explanation to why he has come to sit alone and long for his father. Seemingly, the use of the mental state predicate *I figa* signals that C22 holds the following proposition (‘his mother did something that made him angry [...]’) for probable, while simultaneously it may indicate that this is his own belief, based on intuition (i.e. subjective evidentiality). In example 42 below, the notion of subjective evidentiality appears more overtly present, signalled by the use of the “free pronoun” *me* (see Huber 1999: 195-196 on the “free” 1SG *mi* and the “bound” 1SG *à*), which emphasizes the fact that it is the speaker himself who thinks that the person in question is a girl. As the bound pronoun *I (à)* bears a low tone and cannot be stressed (Huber 1999: 198), and the free pronoun *me (mi)* cannot (normally) directly precede the verb without an intervening bound pronoun (Huber 1999: 196), an emphasis on 1SG accordingly renders as *me a (dey) figa*. The epistemic category appears, like in 40 above, be one of probability.

42. B: *e be shorty?*
 it COP girl
 ‘Is it a girl?’

A: *yeah this one me I dey figa e be shorty*
 yeah this one me I NPU think it COP girl
 ‘Yeah, this one me I think it’s a girl.’

(20151208_FamProb_Part1_C25-C28 00:37)

Example 43-44 illustrate that *figa* may be used descriptively (as opposed to the performative uses in the previous examples). As mentioned in section 2.2.1, with a performative use of a modal expression the speaker commits him- or herself to the evaluation. In a descriptive use, however, the speaker reports on other’s evaluations (in 43 it is the man who sees the beehive, i.e. a third person, whose thoughts are reported on, and in 44 it is a third person who is said to think that he is at Makola Market).

43. *wey as at that time too then this nigga see this beehive I don’t know what*
 CPL as at that time TPC then this man see this beehive I don’t know what
 ‘And at that moment this man saw this beehive, I don’t know what’

then e dey figa so e dey try climb the this thing go tear assessment for
 then he NPU think so he NPU try climb the this thing go do assessment for
 ‘he was thinking, so he tries to climb the- this thing and investigate what’s on’

top this thing
 top this thing
 ‘top of it.’

(20151201_FrogStory_C7-C12 06:16)

44. A: *e think this place be club wey e dey dance oo*
 he think this place COP club CPL he NPU dance EMP
 ‘He thinks this place is a club so he dances!’

B: *I shock give am Ø figa sey e be Makola Market*
 I surprise give him he think CPL it COP Makola Market
 ‘He surprises me! (He) thinks that it’s Makola Market.’
 (20151221_FrogStory_Presec_C32-C33 07:51)

4.2.2 e be like

The phrase *e be like* (it COP like) is a consistently clause-initial element. It seems to be used as a preface, introducing a proposition that is ‘similar to’ (as suggested by *like*) the actual event or state of affairs that the proposition describes. However, *e be like* should not be understood as chiefly a device for comparison, as e.g. the English *it’s like [a jungle sometimes]* (from the first line of the Grandmaster Flash track *The Message*). *E be like* rather has a mitigating function, indicating that the following proposition is an approximation. The epistemic meaning of this expression appears to be one of probability, i.e. that what follows is deemed probable by the speaker, although (s)he cannot be completely sure. In terms of the division between intersubjective and subjective expressions (see section 2.2 and Nuyts 2006: 13-14), *e be like* may be classified as intersubjective, i.e. indicating that the responsibility for the evaluation is shared with others (though not necessarily with the hearer). Consider the following examples.

45. *okay so rydee make a tok my story right ok so some man i*
 okay so right.now CAU I tell my story right ok so some man he
 ‘Okay, so right now let me tell my story, right. Okay, so there’s a man’

dey wey i be like i get wife then kiddie
 COP CPL it COP like he have wife and kid
 ‘and it’s like he has a wife and a kid.’
 (20151127_FamProb_C4 00:10)

Example 45 above depicts C4’s very first utterances in his performance of a picture task. He starts out with asserting that there is a man, and secondly, *e be like* ‘it’s like’ the man has a wife and a kid. This may be considered as a relatively non-controversial interpretation of the picture’s contents, which suggests that both the meaning of probability and that of intersubjective responsibility may apply to this instance of *e be like*. Example 46, presented below, illustrates a less frequent use of *e be like*, namely where it is followed by a clause-final NP (*e be like inborn thing*). Normally, from the cases attested in the corpus, *e be like* is followed by a complement clause, as in [*e be like [e get wife then kiddie]*] (as in example 45) or [*e be like [e be inbuilt]*] (example 46).

46. *kiddies no dey learn happiness e be like inborn thing you know like learning*
 Kids NEG NPU learn happiness it COP like inborn thing you know like learning
 ‘Kids don’t learn happiness, it’s like an inborn thing, you know, like learning’

to love then things some you know e be like e be inbuilt you dey
 to love then things some you know it COP like it COP inbuilt you NPU
 ‘to love and things like that, you know, it’s like it’s inbuilt, do you’

bab
 understand
 ‘understand?’
 (20151127_Emotional_Sadness_C4 07:06)

47. *this here e be like them all crosh wey like them like talk about † like*
 this here it COP like they all meet CPL like they like talk about † like
 ‘This here it’s like they all meet and like they like talk about (palatal-alveolar click) like’

what e happen or something so
 what it happen or something so
 ‘what happened or something like that.’
 (20151204_FamProb_Part1_C21-C22 15:41)

A striking feature of example 47 above is, apart from the use of *e be like* which appears to correspond to the former examples, the multiple instances of *like*. *Like* has, in uses such as those above, been described as a discourse marker (e.g. Levey 2006; see Amador-Moreno 2012: 29 for a list of references). Levey (2006: 414) notes that “the discourse marking functions of *like* [...] have variously been explained in terms of focus marking, hedging, and exemplification, as well as having been associated with pause filling, hesitation phenomena, and word-finding difficulties [citing Underhill 1988, Miller & Weinert 1995 and Andersen 2001]”. Does *like* above express e.g. focus? A reason against interpreting *like* as a focus marker in GhaPE proper is the fact that the morphological focus devices described by Huber (1999: 247) all occur *after* the focused element. It may thus be argued that if *like* functions as a focus marker, it is a deviation from the GhaPE system, and could be a question of code-switching to English. As for example 47, it is probably not the case that *like* operates as a focus marker, given that it occurs no less than three times, but it may again (as in 45-46 above) function as to mitigate (hedge) what is said. However, the last *like* that may as well be ascribed the function of exemplification (i.e. ‘they talk about *like* what happened’). Another feature of 47, perhaps in need of explanation, is the palatal-alveolar click (†), which was preceded by a slight pause. The click can, according to some of our consultants, signal e.g. frustration. In this case it may thus indicate that the speaker was ‘frustratedly thinking about what to say’.

Example 48 below, produced by C37, illustrates that *e be like* may be used very frequently within a single stretch of speech. As it precedes a statement, e.g. *e be like booze or something*, it seems to express that what is said is tentative, although fairly probable. In other words, it signals that the speaker has limited knowledge about what really is at hand, but does his best to offer a plausible suggestion. The frequent usage of this expression may be explained with reference to the interactional context: C37 was given a set of picture cards depicting various events, asked to order them chronologically – knowing that there were multiple ways to order them – and then to tell a story based on his personal organization of the cards. Even though he was told that “there is no correct order”, knowing that one’s observations, judgements and ideas are under surveillance can be pressure enough for one to feel the need of mitigating them. While C37 performed the task by himself, other consultants worked jointly in pairs or bigger groups. For these consultants, the use of *e be like* may have been prompted from within the group itself as well as from the research setting.

48. C37: *in paddies wan give am drink e be like booze or something wey e say*
 his friends INT give him drink it COP like booze or something CPL he say
 ‘His friends want to give him a drink, it’s like booze or something, and he says’

no e no wan take am but be like then they try convince am make
 no he NEG INT take it but COP like then they try convince him CAU
 ‘no, he doesn’t want it, but it’s like then they try to convince him to’

e take wey e say no no e be like the boy be in kiddie wey e
 he take CPL he say no no it COP like the boy COP his kid CPL he
 ‘take it and he says no, no, it’s like the boy’s his kid and he

dey follow am or something
 NPU follow him or something
 (20160106_FamProb_Part1_C37 03:08)

Example 49 illustrates that *e be like* is optionally followed by what is either 1) the complementizer *sey*, 2) the English *say* meaning ‘for example’ or 3) something else. This feature, which has been observed in the speech of several consultants (see FrogStory_C5-C6, FamProb_C25-C28, FrogStory_C29, FrogStory_C32-C33, FrogStory_C34-C35), nevertheless seems to be less frequent than the bare *e be like*. Whether the addition of *sey* entails a change in meaning is hard to say from the current data. However, there are also two instances in the written corpus where *but* ‘but’ is followed by <say> (see 20151208_Myself_03, 20151208_Myself_06). Speaker C25 stated that *say* following *but* (e.g. *I dey like this guy waa, but say he bad* ‘I like this guy very much, but he’s bad’; 20151208_Lexicon_C25) is basically meaningless. As the matter of *say/sey*, given the limited data, cannot add to the discussion of epistemic modality, this matter will henceforth be left aside.

49. A: *e be like sey the boy spy something for there*
 it COP like CPL the boy see something for there
 ‘It’s like the boy sees something over there.’

B: *yeah i spy something*
 yeah he see something
 ‘Yeah, he sees something.’

A: *the log inners oo*
 the log inside EMP
 ‘Inside the log.’
 (20151221_FrogStory_PreSec_C34-C35 12:42)

In the following section, the expression *e check like* ‘it looks like’ will be presented. It is formally similar to *e be like* in two ways: it is invariably clause-initial and it contains a third person singular pronoun. However, there is a verb *check* ‘look’ instead of the copula *be*, suggesting a prominent evidential meaning in terms of either direct visual evidence or indirect inference (cf. de Haan’s 2013 classification, introduced in the Background). Occasionally, the two expressions occur in the same utterance (see 50-51 below). In 50, C22 states that *e be like then* [...], followed by *I sure sey* [...] ‘I’m sure that [...]’, i.e. indicating that he is actually (quite) *sure* about what follows. Whether the *e be like* and *I sure sey* express the same epistemic value, or the latter is a repair of the first evaluation, is hard to tell. It is also difficult to ascertain whether the soon following *check like then in paddie* [...] ‘(it) looks like then his friend [...]’ is to be understood as subsumed under the previously expressed attitude *I sure sey*, or if C22 is less sure about the event preceded by *check like*. Intuitively, *e be like* and *e check like* may be flexible in terms of the strength of the epistemic value they express, being able to express both a general notion of probability (i.e. from ‘probable’ and upwards), and to signal more subtle nuances, differentiating between evaluations of events of which the speaker is more or less knowledgeable (as described above, in relation to e.g. *sure*).

50. C22: *yeah e be like then I sure sey the man go some place wey e dey*
 yeah it COP like then I sure CPL the man go some place CPL he NPU
 ‘Yeah, it’s like then- I’m sure that the man goes somewhere to’

tap then check like then in paddie come tok am sey ei your woman
 sit then look like then his friend come tell him CPL ei your woman
 ‘sit and then it looks like his friend tells him that ei, your woman’

dey cheat plus some bro for somewhere
 NPU cheat with some man for somewhere
 ‘cheats with some man somewhere.’
 (20151204_FamProb_Part1_C21-C22 08:30)

51. C21: *yeah e check like as e komot from the prison e be like e dey*
 yeah it look like as he come.out from the prison it COP like he NPU
 ‘Yeah, it looks like as he came out of the prison, it’s like he’

miss like the outside the fresh air
 miss like the outside the fresh air
 ‘has missed like the outside, the fresh air.’
 (20151204_FamProb_Part1_C21-C22 10:33)

Non-modal usage of *e be like*

The only attested negated form of *e be like* (i.e. *e no be like*) does not appear to have a modal meaning, but rather one of comparison. Consider C4’s utterance below, where he says that he does not agree with being sad for nothing, because ‘it’s not like somebody died or something happens’.

52. C4: *sometimes I go be sad for nothing like there’s no events but I go feel*
 sometimes I IRR be sad for nothing like there’s no events but I IRR feel
 ‘Sometimes I will be sad for nothing, like there’s no event but (nevertheless) I will feel’

sad I no dey gree ‘cause ah why I dey feel sad e no be like
 sad I NEG NPU agree because ah why I NPU feel sad it NEG COP like
 ‘sad. I don’t agree (with that), because ah, why do I feel sad? It’s not like’

somebody die or something dey happen
 somebody die or something NPU happen
 ‘somebody died or something happens.’
 (20151127_Emoional_Sadness_C4 04:11)

4.2.3 *e check like*

The expression *e check like* ‘it looks like; it’s like; it appears that’ seems to express an epistemic meaning of probability, while at the same time it may indicate the evidential category of inferentiality (or, possibly, direct visual evidence). It has been translated as both ‘it looks like’ (by C4) and ‘it’s like; it appears that’ (C29, see FamProb_C29 05:10). *E check like* thus seems very similar to *e be like*, but from the lexical meaning of *check* ‘look’, it may be more directed towards the mode of knowing (i.e. evidentiality). The initial third person pronoun ‘it’ suggests that it expresses intersubjective rather than subjective evidentiality, i.e. that the speaker assumes that his or her evaluation is shared with others. In example 53 below, C21 and C22 have just been handed a new picture card. C21 starts out by uttering that ‘in this one it looks like they are at some farm or something like that’. Given that he has direct visual access to the picture, the evidential meaning can very well be interpreted as one of visual evidence, while the epistemic meaning appears to be probability. A usage that is more suggestive of inferential than visual evidentiality is presented in example 54 (a partial repetition of example 23 above), where C20 asks C21 ‘it looks like they want to fool us or what?’. Here, C20 is only ‘looking’ in a metaphorical sense, i.e. analyzing the situation and inferring that he may risk being fooled. While the evidential meaning seems to change between the two uses (in example 53 vs. 54), the epistemic meaning still seems to be probability.

53. C21: *for this one e check like them dey some farm or something so*
 for this one it look like they COP some farm or something so
 ‘In this one it looks like they’re at some farm or something like that.’
 (20151204_FamProb_Part1_C21-C22 02:00)

54. C20: *the thing e check like they wan gyimi we or what*
 the thing it look like they INT fool us or what
 ‘The thing, it seems like they want to fool us or what?’
 (20151203_FrogStory_C19-C20 00:48)

Example 55 below illustrates that there is a difference between epistemic probability, as indicated by speaker A's *e check like*, and epistemic certainty, expressed via *of course* in speaker B's reply. The consultants A and B are performing the frog story task, describing what they see in the pictures. First, A suggests, in a manner that might be read as somewhat hesitant (signalled by the *eh* followed by a short pause), that it looks like it is nighttime. Speaker B replies that *of course* it is nighttime, followed by both a conjoined clause indicating the evidence for his claim ('because the moon is there') and a disjunctive clause double-marked as interrogative (i.e. by the initial *or* and the final Akan question particle *àná*; 'or don't you see the thing (or what)?').

55. A: *ah e check like e dey eh night or night time e be evening tee*
 ah it look like it COP eh night or night time it COP evening time
 'Ah, it looks like it's eh, night or night time, it's evening time.'

B: *ah na of course e dey night time sekof the moon dey there or you*
 ah TPC of course it COP night time because the moon COP there or you
 'Ah, of course it's night time because the moon's there, or don't'

no dey bab the thing àná
 NEG NPU understand the thing QP
 'you see the thing (or what)?'
 (20151221_FrogStory_Presec_C32-C33 00:54)

4.3 Summary of results

The table below summarizes the proposed features of the elements presented in the previous sections. The left-most column gives the particle-like expressions, whereas the next column contains their proposed meanings. Here, the epistemic categories are (im)possibility, probability and uncertainty. The three verbal expressions, listed in the third column from the left, were all deemed to express epistemic probability. However, each expression is distinct in terms of its evidential meaning(s). Specifically, *figa* 'think' used with a first person subject (i.e. *I figa*) was analyzed to mark subjective evidentiality, due to the indication by the 1SG pronoun that the speaker assumes personal responsibility for the following proposition. This distinguishes *I figa* from *e be like* 'it's like', as the latter expression's 3SG pronoun *e* was deemed to signal intersubjective evidentiality (i.e. shared responsibility for the evaluation). Moreover, *e check like* 'it looks like; it appears that' is distinct from the two former assuming that the verb *check* 'look' indicates either inferential or visual evidentiality (depending on the context). As for the particle-like expressions, *(go) fit* and *bi ((like) that)* are unique among the present expressions in that they are the only attested means for expressing epistemic (im)possibility and uncertainty, respectively. *More times* and *abi* both were analyzed as indicating epistemic probability, but differ given that *abi* also expresses inferential evidentiality and has a prominent interrogative function.

Table 3. Summary of epistemic, evidential and other functions of the attested expressions

Particle-like	Meaning	Verbal	Meaning
<i>(go) fit</i>	epistemic (im)possibility	<i>figa</i>	epistemic probability; subjective evidentiality
<i>more times</i>	epistemic probability	<i>(e) be like</i>	epistemic probability; intersubjective evidentiality
<i>Abi</i>	epistemic probability; inferential evidentiality; interrogative	<i>(e) check like</i>	epistemic probability; intersubjective, inferential, visual evidentiality
<i>bi ((like) that)</i>	epistemic uncertainty		

5. Discussion

5.1 Method discussion

This section gives a methodological evaluation, addressing aspects of data sampling and collection, the theoretical framework and analytic procedure. Firstly, the short duration of the research project (8 weeks) and the opportunistic means of data collection have resulted in a limited sample. Linguistic variation is to be expected determined by factors such as sex, age, level of education, individual first and second languages, former and current place(s) of residence, educational institution(s), etc. No rigorous attempt has been done to weigh these factors against each other in the process of data collection. Moreover, the initial aim was not to investigate epistemic modality, but to capture conversational data in general. Therefore, the project could have benefited from more targeted elicitation of epistemic forms, perhaps through the use of more problem-solving tasks (cf. San Roque et al. 2012: 140, which highlights the utility of this type of task in obtaining judgments of doubt and certainty), and also through more structured (rather than semi-structured) elicitation with speakers. While the limited sample precludes any generalizations to larger populations of speakers, the present study has contributed to the groundwork on the topic and can hopefully inspire future projects in the same area. It remains to be seen whether the expressions discussed here are common among the majority of speakers, and if there are other important forms. Concerning the transferability of the results, it may be the case that they can give clues as to the situation in varieties of WAPE's other than GhaPE (e.g. NigPE). From what I know, there are no existing studies on WAPE's specifically dedicated to epistemic modality.

Concerning theory and analysis, these have been grounded in earlier works on modality and the functionalist tradition of linguistics. This means, firstly, that the notion of epistemic modality adopted is fairly conventional: the basic concept of epistemic modality is more or less common ground, but I have chosen a particular way to subdivide it and to establish its relation to evidentiality. Secondly, the study is based on assumptions from conversation analysis, specifically in that it relates the linguistic expressions to the sequences of actions in which they occur, which helps inferring their meaning. The analysis has also been informed by speaker judgements, a point which is worth discussing. While it is true that speakers know best what things mean, for their judgements to be transformed into a valid linguistic description ideally also the linguist should be an expert in the language. This I am not, which entails that the analysis is limited in this sense. Preferably, the work would have been executed in close collaboration with (or by) an individual whom is both a fluent speaker and linguistically trained.

5.2 Results discussion

As demonstrated in sections 4.1-4.3, 7 expressions that can indicate epistemic modality were found in the corpus: the pre-verbal marker *fit*, the adverb *more times*, the particles *abi* and *bi* ((*like that*) and the verbal expressions *figa*, *e be like* and *e check like*. Thus, epistemic modality in GhaPE can be expressed by several different lexical categories. It is also apparent that the attested expressions are not used singly to indicate epistemic modality, but are multifunctional and may serve other functions as well. These other functions apply either in usages that do not involve an epistemic assessment, i.e. when *more times* means 'often' and *fit* indicates dynamic modality, or simultaneously with an epistemic evaluation, e.g. in the case of *abi* that both indicates epistemic probability and asks the hearer for confirmation or *I figa* that indicates subjective evidentiality and epistemic probability.

As for *abi*, its combination of several functions has above been illustrated to partly correspond with the Swedish modal particle *väl* (as described by Aijmer 2015). Both expressions share e.g. the meaning of epistemic probability and the simultaneous function of asking the hearer for confirmation. While it is not news that modal particles (given that *abi* belongs to this category) may be multifunctional, it can be interesting to show what functions may combine in one form, and whether

certain combinations occur cross-linguistically. Thus, one may note that *abi*, in addition to its similarity with *väl*, also relates to the Spanish epistemic adverbs *a lo mejor* and *igual* ‘maybe, perhaps’. In Cornillie’s (2011) study, *a lo mejor* and *igual* are shown to “invite the interlocutor(s) to confirm or reject the view of the state of affairs (or part of it) presented” (2011: 309), through an investigation of their discourse functions in conversation. Cornillie states that they therefore “play an important role in the turn-taking process” (2011: 309). He further argues that *a lo mejor* can be seen as “a discourse strategy of the speaker to achieve alignment with the co-participant” (2011: 320). Finally, *a lo mejor* is also shown to indicate inferential evidentiality (2011: 313). It clearly seems that the proposed functions of *a lo mejor* and *igual* are related to those of the GhaPE *abi*. The relation holds specifically in that all three may express an epistemic evaluation while at the same time regulate the interaction in terms of alignment (and, in the case of *a lo mejor*, the similarity extends also to the indication of inferential evidentiality).

Another aspect evident from the results is that of the occasional need to subdivide modal expression types in terms of different usage properties (cf. Nuyts 2006: 12-13 and section 2.2.1). The present study has utilized the notions of (inter)subjective evidentiality and performative vs. descriptive usages (as described in Nuyts 2001, 2006). These have proved to be useful in distinguishing between the meanings of the complement-taking predicates *I figa* ‘I think’, *e be like* ‘it’s like’ and *e check like* ‘it looks like’. In terms of modality, all three expressions appear to indicate a degree of epistemic probability – which is not a very satisfactory conclusion if one wants to arrive at a conception of why speakers choose one form among the others. However, when taking their evidential meanings into account, it appears that they are indeed different. *I figa* and *e be like* may be taken to differ in terms of (inter)subjective evidentiality (as signalled by the use of a personal vs. impersonal pronoun), while *e be like* and *e check like* contrast with regards to the nature of the indicated evidence (as suggested by the use of a copula vs. an appearance verb).

However, even though the expressions featured in the present study exhibit a range of meanings in addition to modality, this is not so for all modal expressions in GhaPE. One may argue that there is still a special category of grammatical forms which seems to be quite faithfully devoted to the traditional categories of modality (and mood) alone (i.e. dynamic, deontic, epistemic, irrealis), namely the pre-verbal markers (e.g. *fit*, *fo*; *go*; see the Background section). GhaPE is thus possibly in line with the cross-linguistically observed tendency for languages to have a demarcated category of forms used to indicate modal meanings in the traditional sense (cf. e.g. the modal auxiliaries in English) (this tendency is pointed out by e.g. Nuyts 2006: 15-16). A noteworthy finding of the present study is that the marker *fit* appears to express epistemic possibility in addition to ability and permission (the latter two are recognized by Huber 1999: 222-223), *without* necessarily being preceded by the irrealis marker *go* (as argued by Huber 2013: see example 10). This obviously corresponds with the English modal auxiliary *can*.

Interestingly, no expressions of epistemic certainty were found, except those that both in terms of form and function mirror Standard English (StE) expressions (e.g. *sure*, *of course*). Although these may very well belong to the established means of indicating certainty in GhaPE proper (just as there can be numerous other loan words which in their GhaPE use do not differ from that in their respective source language), we cannot rule out that speaker’s might feel that other forms would be more “authentically” GhaPE, and that *sure* and *of course* rather represent instances of code-switching to StE. Stated simply: are other means are there of expressing epistemic certainty than those attested in the present study? Obviously, this question could be extended to the other epistemic categories too, in all their possible variations and nuances (e.g. high/low probability). Taking into account that the present corpus is a limited sample, and that the collection of data was not targeted at epistemic modality in the first place, much of what exists may have gone under the radar. It is therefore suggested that future studies could make use of a bigger corpus and direct the collection towards types of conversation where a high frequency of epistemic expressions is to be expected. Larger portions of data would furthermore allow for quantitative analyses of e.g. the relative frequency of different forms, indicating the speakers’ customary means of expression. It could also be fruitful to widen the scope so as to include other

categories of modality, and thereby increase the knowledge of e.g. what connections actually hold between different categories (cf. the case of *fit* in the previous paragraph).

5.3 Ethics discussion

As for the ethical aspects of the study, it may simply be concluded that the principles (elaborated in section 3.2) were strictly adhered to, and no apparent problems surfaced.

6. Conclusions

This section concludes the findings of the present study and suggests possible topics of future research. For sake of clarity, the research questions are repeated below.

1. What expressions of epistemic modality are there in the corpus?
2. What categories of epistemic modality (e.g. possibility, probability or certainty) do these expressions indicate?
3. Can the expressions be subdivided in terms of their indication of subjective vs. intersubjective evidentiality or performative vs. descriptive uses?

As for questions 1 and 2, the analysis laid out in sections 4.1-4.3 shows that there are 7 expressions of epistemic modality in the corpus: the pre-verbal marker (*go*) *fit* (optionally preceded by *go*) expresses epistemic possibility; the adverb *more times* and the particle *abi* respectively indicate epistemic probability; the particle *bi* ((*like*) *that*) (optionally realized as *bi*, *bi that* or *bi like that*) expresses epistemic uncertainty; the verbal expressions *figa*, (*e*) *be like* and (*e*) *check like* indicate epistemic probability. However, three of these forms are normally used to express meanings other than epistemic modality: *fit* can indicate ability and permission; *more times* is originally a temporal adverb meaning ‘often, most of the time; sometimes’; *bi* can, like its counterpart in Akan (i.e. *bí*), function as a specific indefinite determiner. Furtherly, the epistemic meanings in some of the expressions co-occur with evidential ones (see below), and as for *abi* it also has a prominent discourse-regulating function.

Regarding question 3, it was shown (see section 4) that the verbal expressions *I figa* and *e be like* may be differentiated from each other in terms of (inter)subjective evidentiality (signalled by the first-person and the impersonal pronoun, respectively). The expressions *e be like* and *e check like* were in turn distinguished by ascribing the first a meaning of intersubjectivity and the second one of visual evidentiality (the latter meaning is signalled by the appearance verb *check* ‘look’). Moreover, it was demonstrated that the verb *figa* can be used both performatively and descriptively (i.e. with a first- or third-person pronoun).

In addition to answering the main research questions, the study also demonstrated a functional correspondence between the GhaPE particle *abi*, the Swedish modal particle *väl* (see Aijmer 2015) and the Spanish epistemic adverbs *a lo mejor* and *igual* (cf. Cornillie 2011). Their similarity lies in the simultaneous function of conveying an epistemic evaluation and asking the hearer for confirmation (see sections 4.1.3 and 5.2). It was also shown that the pre-verbal marker *fit* may indicate epistemic possibility, *optionally* (and not necessarily) preceded by the irrealis marker *go*; see sections 2.2 and 4.1.1).

The present study provides only a preliminary picture of the system of epistemic modality in GhaPE. In order to arrive at a more comprehensive understanding, it is therefore suggested that future researchers make use of considerably bigger corpora. One may also benefit from directing the collection of data towards types of conversation that typically contain high amounts of epistemic evaluations, e.g. problem-solving tasks (as pointed out by San Roque et al. 2012). A larger corpus would moreover allow for quantitative analysis of e.g. which expressions occur most frequently. Finally, as implied in the case of *fit* (see above), it remains to be established what connections hold between different modal expressions. Thus, ideally, future investigations would be preoccupied not only with epistemic modality, but also with other categories of modality.

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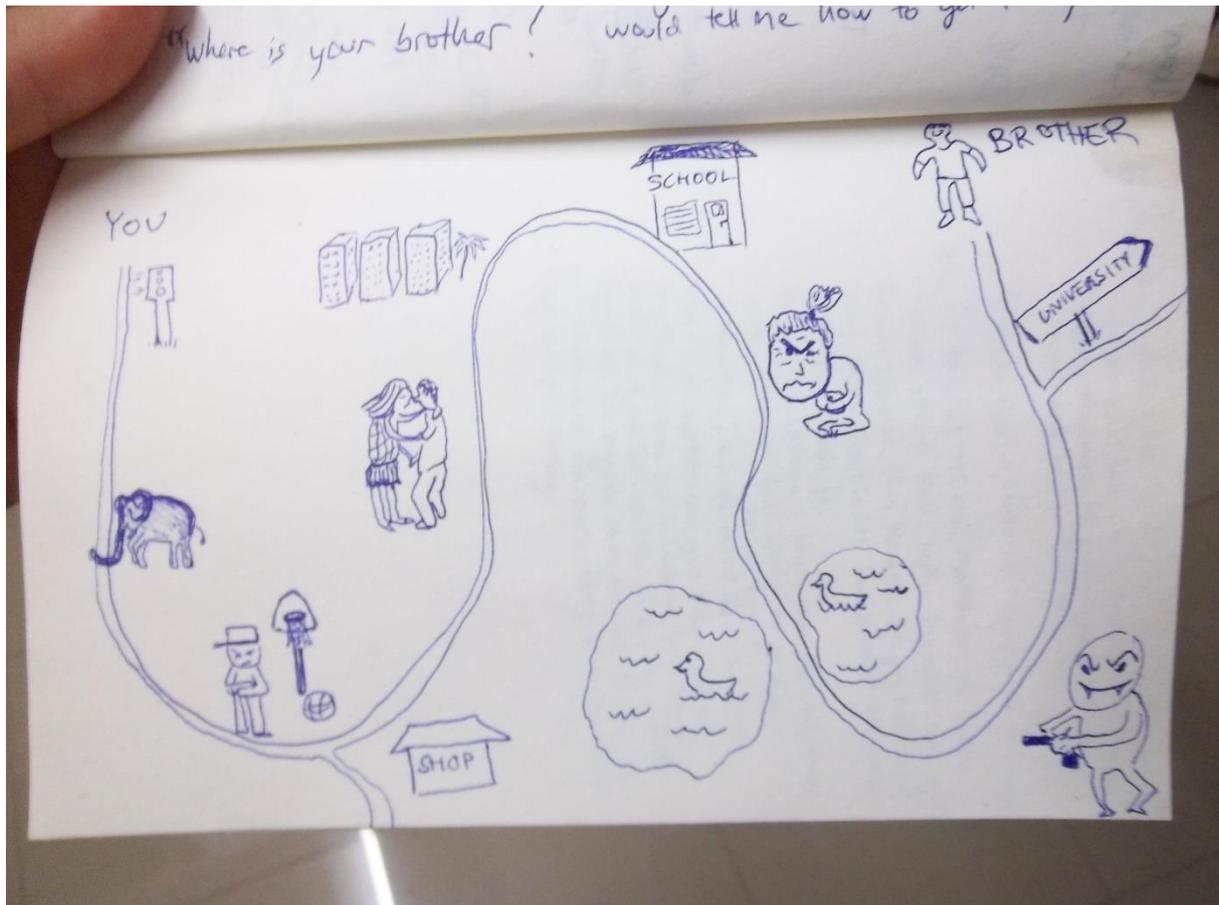
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Appendices

1. My Brother Task

This task entails asking the consultant for directions as to how to get to your brother (beginning from the text stating *YOU*). The picture was drawn by my co-worker Carolina Lindmark in 2015.



2. Myself Task

This task was developed after a suggestion from our local supervisor at the University of Ghana-Legon. The aim was to elicit a written auto-biographical narrative. In addition to the narrative, a metadata sheet was added, to be filled out by the consultants themselves, in order to facilitate the collection of speaker metadata.

Myself

The information you fill out in this sheet will be used for the purpose of linguistic analysis of Ghanaian Pidgin English (GhaPE), as part of a school project at Stockholm University, Sweden. Your name will be replaced with a pseudonym so that you cannot be personally identified by anyone. However, the information you give will increase the common knowledge of GhaPE.

Name	
Age	
Sex (Male/Female)	
Occupation	
Level of education	
First language	
Other languages	
Have you lived outside of Ghana (for at least 3 months)? Where?	
Have you studied at other universities? Where?	
Other comments	

Please write a short essay about yourself in GhaPE (e.g., what you like to do, what your dreams are, what a regular day in your life is like). Your contribution is highly appreciated!

3. Frequencies of presented forms

The table below presents the total frequencies of the forms presented in section 4, as they are distributed over the selected corpus texts. Note that the below numbers result from a mere counting of forms, and do not in each instance necessarily correspond to the meanings and functions identified during section 4 (e.g. some of the instances of *(go) fit* counted below express ability rather than epistemic possibility).

Text	<i>(go) fit</i>	<i>more times</i>	<i>abi</i>	<i>bi</i> <i>((like)</i> <i>that)</i>	<i>figa</i>	<i>(e) be like</i>	<i>(e) check like</i>	Text length (min)
Emotional_C4	0	0	2	0	0	0	0	5,04
Emotional_Sadness_C4	5	0	2	0	0	3	0	7,21
FamProb_C4	0	0	0	0	0	8	0	3,51
FrogStory_C4	0	0	0	0	0	25	0	5,1
FrogStory_C5-C6	0	0	5	6	0	8	0	12,51
FrogStory_C7-C12	1	0	1	8	2	16	2	10,46
FrogStory_C19-C20	1	1	3	0	0	0	7	7,16
FamProb_C21-C22	1	10	3	2	5	13	39	17,02
MyBrother_C23	0	0	1	4	0	1	0	2,37
FamProb_C25-C28	24	1	15	0	4	6	9	14,08
FamProb_C29	4	1	1	6	0	6	33	43
FrogStory_C29	5	2	0	1	3	1	9	30,26
FamProb_C30	2	0	0	0	0	0	0	18,27
FrogStory_C32-C33	0	0	0	3	1	0	9	8,11
FrogStory_C34-C35	1	0	2	3	0	2	0	15,2
FamProb_C37	1	0	0	0	0	9	0	11,24
Total	44	15	35	33	15	89	108	199,3

Stockholms universitet/Stockholm University
SE-106 91 Stockholm
Telefon/Phone: 08 – 16 20 00
www.su.se



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