Hedging In Academic Writing: A Pragmatic Analysis Of English And Chemistry Masters' Theses In A Ghanaian University

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1

Abstract

Academic texts are no longer perceived as mere neutral accounts of factual information; they are currently viewed as socially constructed rhetorical artefacts which aim at negotiating and persuading the reader. As a result, there has been growing interest in hedging as a useful rhetorical resource used to realize this communicative function within academic writing. However, despite the plethora of studies on hedging in the various academic genre types (e.g. textbooks, conference paper presentations, examiners' reports), it is probably the research article (henceforth, RA) which has been explored most extensively in the literature. Secondly, largely focusing on RAs, the literature on hedging primarily discusses how the concept is organized (i.e. the lexico-grammatical forms) in different disciplines and across different rhetorical sections, paying little or no attention to its discourse functions though the underlying motivation for the use of hedging in the enactment of academic texts has been well articulated. Thus, using Hyland's (1998) Poly-pragmatic Model, the present study investigates the discourse functions of hedges in English and Chemistry Masters' Theses in the University of Cape Coast. It further explores the differences regarding the discourse functions hedges perform in both disciplines. The study, which is both qualitative and quantitative in nature, reveals that hedging in English and Chemistry Masters' Theses perform three pragmatic functions and that the preference for these functions, to some extent, varies in both disciplines due to a number of factors. The study has a pedagogical implication.

Key Words: Hedging, Academic Writing, Pragmatics

1.0 INTRODUCTION

For the past three decades or so, academic writing has received considerable scholarly attention due to the central role it plays in the research process (e.g. Irvin, 2010; Drury, 2001). In Applied Linguistics and its allied fields, for instance, the topic has been extensively researched into. Whereas some scholars have directed their research at pedagogical issues, including theories and methodology (e.g. Benesch, 2008; Zemach and Rumisek, 2005;

Fulmiler, 2002), other researchers have focused on the actual practice of academic writing where various linguistic forms and rhetorical strategies have be explored. Firmly rooted in verbal texts, topics such as the terminology of specialist fields, the use of passive versus active voice, the construction of noun phrases, tense and aspect in Research Article introductions, and organizing signals in lectures have received considerable attention (e.g. Berkenkotter and Huckein, 1993; Halliday, 1993; Swales, 1990; Bazerman, 1988).

As a form of specialized writing, academic writing has developed its own conventions (Irvin, 2010) governing its use within the discourse community. These norms often take into cognisance the differences of the subject among disciplines or groups of disciplines and the expectations of the individual members. Regardless of the differences among disciplines and individual members' expectations, some features of academic writing seem prominent. They include objectivity, clarity of language, inter-textuality, metadiscourse, precision, and perhaps *hedging*. Central to these features is the position shared by some scholars that academic discourse should be kept as neutral as possible and be devoid of personal statements (Chris & Zawacki, 2006; Varttala, 2001; Hedge, 1994; Bolsky, 1988). As such, authors who subscribe to this notion forcefully criticise the use of vagueness in this type of writing but rather promote precision with the conviction that the use of vague and imprecise expressions in making claims leaves some doubts in the readers' minds as regard certainty and credibility of the claims of the writer (e.g. Hedge, 1994; Booth, 1988; Alley, 1987). They therefore take an entrenched position that epistemic elements, which are often referred to as *hedges,* are undesirable in academic texts.

In contrast, there are some scholars who favour the use of hedging in academic/scientific writing (e.g. Hyland, 1998; 1995). Drawing inspiration from classical rhetoric, they operate on the assumption that scientific texts are not only content-oriented and informative but also aim at convincing and influencing their audience. Their conviction is upon the fact that formulation of scientific text is not merely built on *docere* (i.e. instructing or informing) but also on *delectare* (i.e. entertaining) and *movere* (i.e. moving or enchanting). Thus, in addition to merely presenting the subject matter (i.e. *pragma*), a text should also activate the reasoning (i.e. *ethos*) of the audience to interrogate the reliability of the author and also move the reader emotionally (*pathos*). It is upon this premise that they consider the connotations of vagueness and imprecision hedging conveys in academic discourse as useful and appropriate, especially when it comes to reports on scientific research. They then stress that scientific texts, like any other form of communication, is supposed to be rational and ought to obey the same rules that characterise everyday ordinary communication where the form and the content are inseparable and that persuasion and many other rhetorical strategies are seen as fundamental ingredients for the enactment of the discourse. On the whole, it can be seen from this analysis that hedging can serve as a useful rhetorical resource to academic writers and therefore must be viewed as yet another important feature of academic writing but not merely as a decorative addition to an otherwise informative text.

As a result of the impact the above argument has made on linguistically oriented studies of the rhetorics of scientific discourse lately, there have been lots of growing interest in hedging and the motivation for its use in academic discourse. In most of these studies, it is often pointed out that despite the popular belief that scientific texts are neutral accounts of factual information derived from nature (e.g. Bazerman, 1988; Mulkay, 1979; Gilbert, 1976), they should better be regarded as socially constructed 'rhetorical artefacts' (Hyland, 1998, p. 16) where authors, instead of putting forward information in a straightforward manner, often engage in the processes of negotiation and persuasion. Thus, when the accuracy or precision of a claim may be subject to debate, authors may wish to formulate their statements cautiously, adhering to central virtues of humility, caution and scientific honesty normally expected by the scientific community. Authors therefore resort to hedging (i.e. the technique or strategies that researchers employ in presenting their claims with caution, precision, moderation and humility) (Varttala, 2001).

Although several studies on hedging have given considerable attention to various kinds of academic genres (e.g. text books, conference paper presentations, examiners' reports), first of all, there are some academic genre types which seem to have been neglected or given very little attention. One of such academic genre types is the graduate students' thesis. At the expense of this equally important academic discourse type, it is probably the scientific research article (henceforth, RA) that has been dealt with most extensively in the literature. Secondly, largely focusing on RAs, the literature on hedging primarily discusses how the concept is organized (i.e. the lexico-grammatical forms) in different disciplines and across different rhetorical sections. Very little or no attention is often paid to the exact pragmatic functions that these hedging devices perform even though the underlying motivations for the use of hedging devices in the enactment of academic texts is over emphasised. More so, even though the popular view held in the literature is that there is a variation in the use of hedges with respect to different disciplines (see Varttala, 2001; Hyland, 1998; Salager-Meyer, 1997), there seem to be no single study that attempts to investigate whether there is any variation with regard to the motivation for the use of hedges across disciplines. The seeming neglect of the topic within the context of students' writing, coupled with the failure of the extant literature on pragmatic consideration with regard to the topic, creates a vacuum that ought to be filled. The present study therefore attempts to investigate the discourse or pragmatic functions of hedges in English and Chemistry Masters' Theses in the University of Cape Coast. It further attempts to explore whether there exist any differences regarding the functions of hedges, taking into account the disciplinary variations.

2.0 THEORETICAL REVIEW ON HEDGING

2.1 Towards Understanding Hedging

The words *hedge* and *hedging* can sparsely be defined as a barrier, limit, defence, or the act or means of protection or defence (see *The Oxford English Dictionary*). Although for the past three decades or so the terms *hedge* and *hedging* have been popular in linguistics and its

allied fields, there is no definition of the terms in the literature which seems satisfactory. As Hyland (1998) contends, "straightforward definitions of the notions are rather rare" as it is evident in the different use of terms by different scholars to describe the linguistic phenomenon that may be viewed as hedging (p.1). In the literature, such terms like *stance marker* (e.g. Atkinson, 1999), *understatement* (Hubler, 1983), *downtoners* (Quirk et al., 1985), and *downgraders* (House and Kasper, 1981) have been used by scholars where other researchers use *hedging*. Other terms that some researchers employ in a similar fashion to suggest hedging are *mitigation* (Stubbs, 1983; Labov and Fanshel, 1977), *indirectedness* (Hinkel, 1997; Lakoff, 1990; Tannen, 1982), *tentativeness* (Holmes, 1983) and *vagueness* (Myers, 1996; Channel, 1994).

Although studies on the concept of "hedging" used not to be common (Crystal, 1995), there have been tremendous studies on the topic in the past few decades. Almost all of these studies have been based on Zadeh's (1965) work on fuzzy logic, which posits that some objects of the natural world do not easily fit into the linguistic categories available for describing the universe. Principal of these pioneer works is George Lakoff's (1973) seminal work which draws attention to the problem of relating natural phenomena to natural language concepts. In this study, Lakoff claims that natural language (concepts) have "vague boundaries and fuzzy edges" (1973, p.458). When Lakoff made this assertion, he was more interested in the linguistic phenomena used to talk about the more peripheral members of broad conceptual categories (Varttala, 2001). Illustrating the viability of studying such linguistic items in the area of formal logic, Lakoff scrutinized certain groups of words which he regarded as hedges, "words whose meaning implicitly involves fuzziness – words whose job is to make things fuzzier or less fuzzier" (p. 471).

Even though the meaning of "hedging" has since been broadened to cover a wide range of linguistic items other than what Lakoff lists in his study, Lakoff's definition of hedges has formed the basis of many discussions on hedging. This is because it provides a solid semantic basis on which the notion of hedging rests as it throws more light on the theoretical significance of studying fuzzy expressions like hedges in natural languages using formal logic. According to Varttala (2001), for instance, Lakoff's (1973) analysis of hedges covers linguistically indeterminate means that could express natural phenomena that are peripheral to the core conceptual categories of natural language such as "animal", "fish" or "bird" (p.5). Thus, instead of one saying that:

1. Men are animals.,

one may say that men are among the more peripheral members of the group and may say that:

2. Men are *more or less* animals.

In the instance in sentence 2 above, the group membership of men is qualified by the hedge (*more or less*) to suggest that men are not typically animals. In effect, Lakoff's treatment of hedges can be said to be purely semantic where he focuses on the way hedging functions to reflect the conceptual categories of natural language. Thus, Lakoff can be said to have dealt with the role of hedges on conceptualization as regards the *experiential* component of the

ideational function of language (Halliday, 1978; 1970). That is it concerns the use of hedges in what Halliday (1978, p. 48) regards as the " 'content' function of language; … language as the expression of the process and other phenomena of external world", roughly corresponding to Widdowson's (1984, p.71) *conceptual* function of language.

Following Lakoff's (1973) study, many studies have shifted from the conceptualization function of hedges, and instead, have emphasized the function of hedging as social interaction between discourse participants. Hedging here is viewed as a pragmatic rather than a purely semantic phenomenon. In this way, hedging has been perceived as contributing to the *interpersonal* function of language where we may "recognize the speech function, the type of offer, command statement, or question, the attitudes and judgments embodied in it, and the rhetorical features that constitute it as a symbolic act" (Halliday and Hassan, 1989, p.45). Since hedges make comments on what is being said, they perform a *metadiscoursal* function where they draw attention either to the relationship between the author and the claims on the text or the relationship between the author and the reader of the text (Geisler, 1994). This form is a subtype of *interpersonal* metadiscourse (e.g. Crismore, 1989).

2.2. **Hedging as a Pragmatic Phenomenon**

Apart from its role in conceptualization, language serves a social purpose as it provides the means for conveying basic conceptual positions in the minds of people, thereby allowing them to get things done in social interactions (Widdowson, 1984). Thus, alongside the ideational component, language has an *interpersonal* element within which the speaker's role in the speech situation, his personal commitment and his interaction with others are expressed (Halliday, 1973).

In recent studies that deal with hedging, it is this interpersonal aspect of the phenomenon that has been given prominence. For instance, addressing hedging in news writing, Zuck and Zuck (1985, p. 172) define the strategy as "the process whereby the author reduces the strength of what he is writing" in case the information reported turns out to be incorrect. Here, hedging is viewed as a rhetorical means through which writers seek protection for their image. In another cross-linguistic study of hedges in philosophical texts, Markkanen and Schroder (1987, p. 48) define hedging as a strategy of "saying less than what one means". In this instance too, like the previous, hedging is presented as a strategy used to modify writers' responsibility for the truthfulness of an utterance, to modify the definiteness of an utterance, and to modify the attitude of the author to the propositions put forth in a text or even to hide this attitude. Crismore and Vaude Kopple (1988, p. 185) also see hedges as items that "signal a tentative or cautious assessment of the truth of referential'', which allow senders to reduce their responsibility toward information presented. All of these descriptions above undoubtedly capture some essential discourse function of hedging (i.e. the primary concern writers have about how to present themselves in a text). However, these descriptions are somewhat insufficient and simplistic since they seem to portray that the discourse functions that hedges perform are exclusive to writers. What many discussions on the phenomenon

seem to gloss over is a more thorough analysis that does not only deal with writers' self-protection but also explore the communication situation as a whole where the relationship between the discourse participants among other things is addressed. This somehow brings to mind the issue of linguistic politeness.

According to Watts et al. (1992), the notion of linguistic politeness has to do with the ways in which human beings "successfully manage interpersonal relationships to achieve both individual and group goals" (p. 1). Linguistic politeness therefore comprises all the various forms of language structure and usage which allow the members of a socio-cultural group to achieve these goals". The notion of linguistic politeness first received attention in Grice's studies on *conversational maxims* where he suggested that, in order to account for language use in context, a politeness maxim should perhaps be added to the well-known maxims he had established within his cooperative principle (i.e. maxim of quality, quantity, relation, and manner). Grice's idea became the basis for what Fraser (1990) calls the *conversational-maxim view of politeness*, which is found in the works of Robin Lakoff (1973) and Geoffrey Leech (1983). In Robin Lakoff's (1973) paper where she calls for an elaboration of the Gricean maxims with regards to politeness, she demonstrates that, in addition to abstract semantic and syntactic rules, language users follow rules of pragmatic competence for reasons of politeness. Here, Robin Lakoff emphasizes that underlying our behaviour during linguistic interactions are two basic areas of linguistic competence, one area being realized by adhering to the principle of *clarity* and the other by observing the principle of *politeness*. She stresses that acknowledging the importance of both areas is necessary for understanding the mechanics of cooperative linguistic interaction.

Robin Lakoff's elaboration of Grice's original principle is further developed in the work of Leech (1983), which includes politeness in *interpersonal rhetoric*. Interpersonal rhetoric, according to Leech, involves *three* different sets of conversational maxims − those pertaining to Grice's cooperative principles, the principle of politeness akin to that of Robin Lakoff, and the *irony principle*. In Leech's (1983) theory, politeness may be realized by weighing one's linguistic behaviour against a group of maxims whereby speakers can minimize hearer cost and maximize hearer benefit (*tact maxim*), minimize their own benefit and maximize that of hearer (*generosity maxim*), minimize hearer dispraise and maximize hearer praise (*approbation maxim*), minimize self-praise and maximize self-dispraise (*modesty maxim*), minimize disagreement and maximize agreement between oneself and others (*agreement maxim*), and minimize antipathy and maximize sympathy between oneself and others (*sympathy maxim*).

Thus far, it appears that the most thorough treatment of the interpersonal features of hedging found in the literature is on politeness, which takes a centre stage in Brown and Levinson's (1987/1978) well-known study of politeness phenomena. In this popular study, hedging is viewed primarily as a negative politeness strategy. In contrast to Lakoff and Leech, Brown and Levinson (1987/1978) developed a seemingly different approach to the study of linguistic politeness. While Robin Lakoff and Leech had been interested in politeness as a part of a system of conversational principles, Brown and Levinson looked at politeness as though it were a reason not to follow conversational principles. Brown and Levinson's (1987,

p. 5) position is that a clear distinction should be drawn between Grice's cooperative principle and linguistic politeness where the cooperative principle will be a description of " an 'unmarked' or socially neutral (indeed asocial) presumptive framework for communication; the essential assumption 'is no deviation from rational efficiency without a reason.'" In Brown and Levinson's work, the principle of politeness is seen as distinct from such rules. It is rather viewed as a social reason to deviate from Grice's 'asocial' principles of linguistic behaviour. Brown and Levinson built their theory of politeness around Goffman's anthropology-based concept of *face* defined as "the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self delineation in terms of approved social attributes …" (Goffman, 1967, p. 23). This model reiterates the idea that interlocutors are aware of two basic kinds of desire regarding their face (i.e. face-want) namely, "the desire to be unimpeded in one's action (negative face), and the desire (in some respects) to be approved of (positive face)". In this, Brown and Levinson attempt to account for politeness as a systemic feature of linguistic interaction.

In this theory, Brown and Levinson discuss politeness on the basis of linguistic interactions, arguing that certain illocutionary acts threaten a person's positive or negative face and such utterances are referred to as face-threatening acts (FTAs). They therefore content that politeness is at play whenever we want to tone down the effects of FTAs. The basic tenet underlying Brown and Levinson's work is that " a face-bearing rational agent will tend to utilize the FTA-minimizing strategies according to a rational assessment of the face risk to a participant" (1987, p. 91). For example, a hearer's face may be threatened when a speaker is too assertive, or a hearer's positive face may be threatened when a speaker insults the hearer. Similarly, an illocutionary act may be damaging to a speaker's own negative face when he or she is forced to make an involuntary offer or promise. In the same way, the speaker's face may be on the line when he or she has to admit a mistake. Two kinds of politeness (negative and positive) can be adopted to avoid doing FTAs badly, and they are that politeness may be used to counteract the threat that FTA may impose. The chosen strategy, according to Varttala (2001), is dependent on the power relation (P) and social distance (D) between speaker and hearer based on the ranking of imposition (R) that an on-record FTA within redressive action would constitute.

The interpersonal aspect of hedging can be traced to Brown and Levinson's (1987) discussion on hedges where it is mentioned that hedges can be used to avoid "presuming or assuming that anything involved in the FTA is desired or believed by the hearer" (p. 144). By this, it means that hedging can be used to indicate that the speaker does not want to impose upon the hearer's desires or beliefs. Although they point out that hedges may have other functions which include the protection of positive face, Brown and Levinson discuss hedging at greater length as one of the ten strategies linked to negative face protection. In support of Brown and Levinson, Hubler (1983, pp. 156-159) discusses the idea of hedging phenomena as indicative of negative politeness and contends that hedges are primarily used in negative face work where hedging devices are "deintensifying" elements which senders can only employ " to maximize the emotional acceptability of the propositional content presented to the hearer for

ratification". On the one hand, senders may hedge utterances so as to leave room for the audience's opinions. In this way, they recognize the want of self-determination. It is particularly this aspect of hedging that has been emphasized in the literature on politeness where hedges are believed to be useful means of avoiding "apodictic statements" that might be "ex-cathedra formulations" overlooking the audience's wish to judge for themselves (Hubler, 1983, p. 159).

On the other hand, hedges can also be interpreted as simultaneously serving the sender's negative face needs. As explained above, hedging has previously been described as a means of self-protection. In being tentative and cautious through hedging, senders can limit their responsibility toward the sender's views. Hedging may thus allow the sender to bow out gracefully and maintain their face regardless of critical comments. This is because the original utterances are toned down in order not to exclude the possibility of being proven wrong. In this case, hedging may be seen as a strategy protecting the sender's negative face on occasions when the sender "indicates that he [or she] thinks he [or she] had good reason to do … and act which [the addressee] has just criticized" (Brown and Levinson, 1987, p. 67). In the context of scientific discourse, for instance, this might be taken as the central motivation for hedging. As Salager-Meyer (1994, p. 150) suggests, in toning down the force of one's conceptualizations of the universe by hedging, it is possible to limit one's responsibility toward what is said and thus avoid embarrassing situations in case one is found to be wrong (see also Zuck and Zuck, 1985). Hedging may thus be characterized as a "primary and fundamental method of disarming routine interactional threats (Brown and Levinson, 1987, p. 146). It therefore increases the probability of acceptance by the audience. Using the following as an illustration,

10. Linguistic politeness is *more or less* the most interesting area of pragmatics.

11. *I think that* politeness theories constitute the most interesting area of pragmatics.

(Vartttala, 2001, p. 24) intimates that, in (10) and (11), the expressions modifying the illocutionary force are inserted to qualify the assertions. According to him, in conceptual terms, *more or less* distances linguistic politeness from the category of the 'most interesting area of pragmatics' and *I think that* modifies the force of the entire utterance placing the proposition somewhere on the continuum between absolute truth and falsehood. In this way, the hedging strategies mark the utterances as subjective views but not categorically correct assertions.

According to Varttalla (2001), hedges are easily identifiable in terms of politeness since it is possible to decipher two reasons for inserting the hedging devices as indicated above. First, the hedges may be seen as indications that the sender does not want to impose his or her views on the addressees since the latter may perhaps have their own areas of interest within pragmatics. This, he says, would constitute negative politeness toward the addressees. Secondly, he intimates that, granted that the addressees may have their own ideas about the

importance of politeness theories, the hedges can be seen as a way out for the sender should the addressees object to his or her views. By hedging the conceptual categorization in the first sentence and marking the proposition as a subjective assertion in the second, the sender allows for other opinions and simultaneously protects his or her negative face against critical comments from the audience.

Turning to the semantic field of the types of negative politeness involved in the examples, the two interpretations described above (increasing and decreasing fuzziness) may be used to analyze the interpersonal potential of hedges. On the other hand, both *more or less* and *I think that* can be thought to increase conceptual imprecision and render things fuzzier. By virtue of the fact that *More or less* makes category membership indeterminate and *I think that* marks the truthfulness of the proposition as uncertain underline that what is being said might not be accepted by everyone. Thus, the fuzziness of the expression allows the addressees to disagree, offering the sender the possibility to forestall potential opposition from the audience. Alternatively, the hedges can be thought to increase the precision of the utterances to make things less fuzzy. The hedges may thus be seen as signals either that the conceptual category involved (i.e. 'the most interesting area of pragmatics') is not an adequate portrayal of *politeness theories* or that the proposition does not fulfil the criteria of 'true', but is more accurately worded when hedged. By hedging in order to be more precise, the sender may also be perceived to acknowledge the addressee's negative face by not imposing categorical utterances on an audience. Thus, the sender may be presumed to understand that the information presented may in some way be subject to debate. At the same time, the sender can protect his or her own face against criticism that might follow utterances lacking the refinement brought by the hedges.

In brief, both increasing and decreasing fuzziness in terms of hedging may be interpreted as aiming at the interpersonal goal of negative politeness. Furthermore, it may not always be easy to say hedges aim at the protection of sender, addressee, or perhaps both. The rationale behind the use of hedges is always a matter of the individual language user and his or her conception of the communication situation. Hence, negative politeness may be employed in different contexts. In sum, due to its negative politeness potential, hedging can be regarded as part of " a system of interpersonal relations designed to facilitate interaction by minimizing the potential for conflict and confrontation inherent in all human interchange" (R. Lakoff, 1990, p. 34). Thus, they may be more to the interpersonal relationship as a discourse function for which hedging is employed in academic texts.

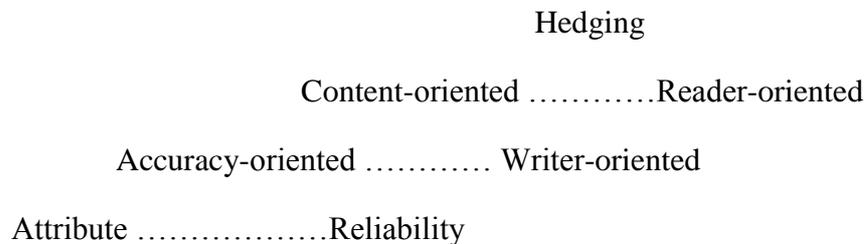## 2.2 **Analytical Framework**

2.2.1 *The Polypragmatic Model*

Convinced that the traditional linguistic principles such as (epistemic) modality and politeness cannot fully account for the various functions of hedging, Hyland (1998) devised the polypragmatic model of hedging to account for the multi-functional nature of hedging. According to this model, hedges can cover an array of purposes that "weaken force of

statements, contain modal expressions, express deference, signal uncertainty, and so on" (p. 160). Hyland, by proposing this scheme, tries to capture the multi-functional nature of hedges in the figure below:

Figure 1

A model of Scientific Hedging (Hyland, 1998, p.156)

Hedging

Content-oriented …………Reader-oriented

Accuracy-oriented ………… Writer-oriented

Attribute ………………Reliability

According to this model, Hyland (1998) divides hedges within the context of academic discourse into two main categories: *content-oriented hedges* and *reader-oriented hedges*. The *reader-oriented* hedges mostly deal with the interpersonal interaction between readers and writers. They make the readers involved in a dialogue and address them as thoughtful individuals who respond to and judge the truth value of the proposition made as exemplified below:

Thus, *we propose* that this insert is the major site of interaction with… p.182

Hyland argues that ignoring the readers in the text by the writers will present "claims as ex-cathedra assertions" which "display an unacceptable deviant persona" (p. 178). Certainty and categorical markers, he explains, do not invite the readers into a negotiation and imply that the assertion made by the writer is the only possible interpretation of the phenomenon. Claims presented this way don not only ignore the readers in the text but also suggest that the statement made by the writer needs no feedback.

Content-oriented hedges, however, "serve to mitigate the relationship between propositional content and a non-linguistic mental representation of reality; they hedge the correspondence between what the writer says about the world and what the world is thought to be like" (p. 162). Hyland further divides the content-oriented hedges into *accuracy-oriented* hedges and *writer-oriented* hedges. To him, the writer's main motivation for using writer-oriented hedges is to make a shield for the self against any probable falsification of the proposition. This is achieved through writers minimizing their involvement in the proposition and keeping a distance from it as indicated below:

These data indicate that photocrome A possesses the … p. 172

The accuracy-oriented hedges, on the other hand, refer to "writer's desire to express proposition with greater precision" (p. 162). The main distinction between writer-oriented and accuracy-oriented hedges is that the former is mostly concerned with the writer's presence in the text rather than increasing precision, which is the main concern of the latter. It

should be noted therefore that this distinction, as Hyland notes, is not very distinct and certain for hedges can have multiple meanings at the same time.

The accuracy-oriented hedges are again further divided into *attribute* and *reliability* hedges. Attribute hedges help writers to specify more accurately how far their results "approximate to an idealized state" (Hyland, 1998, p. 164). He provides an example on attribute hedges as:

> Although variable, the isoelectric point of kunitz seed inhibitor is *generally* lower… p. 164

Reliability hedges, however, acknowledge the writer's certain or uncertain knowledge in a proposition. They indicate the confidence invested in the validity of the claim. An example is provided thus:

> It is therefore *possible* that Firmstone *might* be different not only in … but also in … p. 180

3.0 METHODOLOGY

3.1 Research Design

The present study was situated within both the qualitative and quantitative research paradigms. The qualitative research approach seeks to explore and understand people's beliefs, experiences, attitudes, behaviours, and interactions (Fraenkel and Wallen, 2000), the goal of which "is to understand the process and character of social life and to arrive at meaning types, characteristics, and organisational aspects of documents as social products in their own right, as well as what they claim to represent" (Altheide, 1996, p. 42). This approach is particularly relevant in the present study because the researcher sought to investigate and understand the underlying motivations (i.e. discourse functions) of the use of the hedges in the rhetorical contexts of Introduction and Discussion sections of English and Chemistry masters' theses. The quantitative research design, on the other hand, is used to quantify relationships between variables with reliance on statistical tools such as correlations, relative frequencies or difference between mean (Dawson, 2000). This research approach seeks to discover what many people think, act or feel in a particular way as opposed to how and why they do. This approach was equally relevant in the current study as it provided me the opportunity to provide a statistical account of the data.

3.2. Research Site

The study focused on the University of Cape Coast, particularly the departments of English and Chemistry. Established in October, 1962, the University of Cape Coast is one of the public universities of Ghana. The university is situated in Cape Coast in the Central Region of Ghana and has the status of a full and independent university, with the authority to confer its own degrees, diplomas and certificates. Presently, the university has 6 schools, 3 faculties, and 37 departments which run both undergraduate and graduate programmes and have over the years produced many graduates. It also has many institutes, centres, as well as units. The university currently has a total student population of 35,922 some of whom are Regular

Students whereas the others are Sandwitch and Distant Learning Students (University of Cape Coast Diary, 2010 (Ed)).

3.3. Sampling Method

The two major sampling procedures employed in the study were the purposive sampling and random probability sampling procedures. The aim of purposive sampling, according to Cresswell (1994), is to purposefully select respondents or documents that will best answer the research question posed. For this reason, the researcher used purposive sampling to select data that were most useful for the study. I therefore purposively sampled Mphil graduate dissertations from the other categories of graduate dissertations such as Masters of Arts (M.A), Masters in Science (M. Sc) and even Ph.D dissertations. The second sampling method the employed in the data was the random probability sampling procedure. The random probability sampling procedure is the method of sampling which ensures that each and every member of the population has an equal and independent chance of being selected (Fraenkel and Wallen, 2000). This procedure is by far the most reliable sampling method because it ensures the validity and reliability of the findings of any given research (Fraenkel and Wallen, 2000). In all, a sample size of 40 theses (20 each from English and Chemistry) was selected.

3.4. Data Collection Procedures

Having obtained permission from the heads of English and Chemistry departments, I sampled the data from the libraries of the two departments where the dissertations are kept. Since the data are documents of the departments that cannot be taken home, I photocopied the Introduction and the Discussion sections of the dissertations after they had been sampled.

3.5 Methods of Analysis

The current study employed content analysis as well as descriptive statistics as the methods of data analysis.

3.5.1 Content Analysis

Content analysis is an important methodological means of analysing written texts. As a qualitative research method, content analysis enables the researcher to arrive at various meaning patterns of texts. It also helps the analyst to understand the types, characteristics and organisational aspects of the documents as social products in their own right as well as what they claim. According to Fraenkel and Wallen (2000), a person's or group's conscious or unconscious beliefs, attitudes, values and ideas often are revealed in their communications through a rigorous content analysis. One major advantage for doing content analysis is its unobtrusive nature. A researcher can, for instance, observe a phenomenon without being observed (Fraenkel & Wallen, 2000), and so avoids the dilemma of the observer's paradox. This is particularly true in the sense that the contents being analysed are not influenced by the

researcher's presence. Moreover, information that might be difficult or even impossible to obtain through direct observation can be gained using content analysis without any or so much hindrance.

Central to doing content analysis is coding. Coding is the process of putting tags, lines, names or labels against the pieces of data. The point of assigning such codes is to attach meaning to these pieces of data. Specifically, I employed colour coding to summarise the data by putting together identifiable patterns in order to find conceptual categories in the data. Given that content analysis conveniently employs the quantitative method, descriptive statistics was equally employed in the study.

3.5.2 Descriptive Statistics

The study also used descriptive statistics as a minor method in the analysis of the data. Descriptive statistics permits the researcher to describe information obtained in simple readable scores (Payne & Payne, 2004). This method was useful because of its relevance in clarifying data and its ability to render data into forms which facilitate the comparison of disparate kinds of information. Commenting on the relevance of descriptive statistics, Fraenkel and Wallen (2000: p. 477) maintain that "the most common way to interpret data is through the use of frequencies (i.e. the number of specific incidents found in the data) and the percentage and/or proportion of particular occurrences". Thus, quantitative analyses in the forms of simple percentages and frequency distribution tables were done to account for the frequency of forms of hedges, their number of occurrences and their discourse functions. The aim of this quantitative analysis was to demonstrate how the frequencies and simple percentages reinforce the qualitative claims of the study. Besides, frequencies and simple percentages provide a much more simple and elegant method of quantitative analyses.

4.0 ANALYSIS AND DISCUSSION

i. *What pragmatic functions do hedges used in English and Chemistry Masters' Theses serve?*

The data suggests that both English and Chemistry Masters students have various underlying reasons for hedging. These pragmatic motivations can be summed up into three - the desire on the part of the researchers to make claims accompanied by some degree of uncertainty, the need to prevent any future criticism capable of damaging their image, and an attempt to gain reader acceptability by presenting facts as tentative. These purposes broadly reflect the two main discourse functions of hedging prescribed by Hyland's (1998) model - *Content-Oriented* and *Reader-Oriented Hedges*. On the former, the data showed instances of use of hedges where both *accuracy-oriented hedges* and *reader-oriented hedges* were employed.

4.1 **Accuracy-Oriented Hedges**

Among the several purposes for which the researchers under investigation use hedges in their research report is the desire to express their propositions with precision in areas often characterized by revision and reinterpretation. They seek to present information as fully, accurately and objectively as possible. The researchers' use of hedges against this background seems to invoke the assumption that there is a world independent of language which can be described virtually by linguistic expressions (Hyland, 1998). And in order to accurately describe such objective domain of non-linguistic facts, attributes are hedged. They then use hedges to specify more precisely the attributes of the phenomena described, thus using *Attribute Hedges*. This is clear in the following examples where hedges are used to indicate variability with respect to certain descriptive terms:

> (84) ***Generally***, the concentration of mercury and cadmium for each sampling day decreases from Beposo to Shama Beach. CH 1

> (85) ***Normally***, when there is a conversation in progress and a headmaster arrives, there is a brief silence and he initiates a topic … EN 6

From the excerpts above, the researchers seek to classify and comment on their findings as accurately as possible using a lexicon of terms, but often there is a discrepancy between actual results and either an expected state or the concept available to explain. A hedge used in this fashion therefore indicates that results vary from an assumed ideal of how nature behaves and allows a better match with familiar descriptive terms. Attribute hedges generally cluster around this pragmatic core, and involve the use of finite set of terms which Ernst (1984) labels "degree of precision adverbs". These specify the extent to which terms used to describe events and relationships vary from an endpoint on a cognitive scale and convey a range of items when used with numerical data (Channel, 1994; Powel, 1985).

> (86) The average levels of the PAHs are ***quite*** high as compared to USEPA Standard requirement … CH 12

> (87) All the data collected from sites S2, S5, and S6 ***almost*** all from S1 exceeded the guideline. CH 6

> (88) … because there is a tendency to have ***more or less*** even syllable duration. EN 3

The data, again, suggests that the attribute can also be qualified by indicating the precise standpoint from which the reader might evaluate the truth of the claim, loosening a strict interpretation of how the descriptive terms used should be understood in characterizing real-world entities:

> (89) ***In a strict sense***, these experiments measure concentration level of … CH 7

> (90) … ***from a practical point of view***, it was realized that the first syllable of the di-syllabic words are strong … EN 6

In each of the examples above, the hedge acts to quantify the predicate intensity or the validity of the state of affairs expressed in the proposition. In sum, Masters students of English and Chemistry use attribute hedges to seek precision in expressions, and these core examples encode variability rather than writer perspective. Apart from their concern with

precision regarding their claims, English and Chemistry graduate researchers are also very particular with making known to the readers the degree of confidence they invest in their claims. Seemingly uncertain in their knowledge base, these researchers hedge to indicate the degree of confidence they invest in the validity of the proposition they make. By so doing, they create the impression that their proposition comes from a subjective viewpoint. *Reliability hedges* therefore play a crucial role here by indicating an assessment of the reliability of truth, keeping interpretations close to findings where claims may be less tenuous:

(91) It is therefore ***possible*** that combustion of liquid fossil fuel is the major source of PAH to the lagoon at the other sites … CH 11

(92) It is ***probable*** that the basis of that expression used to humble the face is in various Ghanaian languages. EN 6

In the above examples, the authors indicate that they have reservations concerning whether the stated situations actually pertain. Here, the principal motivation appears to be a desire to clarify the state of knowledge which is a hedge against complete accuracy, rather than a wish to seek protection against overstatement. In the data, other means of expressing reliability accuracy-oriented content hedges are the use of epistemic forms in the main grammatical classes, principally modal verbs, modal adjectives and nouns as exemplified below:

(93) From the table above, C is able to speak for thirty seconds because he ***appears*** to be more knowledgeable in the topic under discussion. EN 17

(94) This is ***probably*** due to the fixed complanarity in 1, 10-phananthrolime (11) as compared to the free ration between the two pyridyl groups. CH 11

(95) It is our ***suspicion*** that a low transport rate of a metal ion favours its being used in the fabrication of an ISE with Cuferron as carrier. CH 12

Content disjuncts are equally common options available to the authors wishing to mark reliability. These disjuncts usually comment on the probability of the content of a proposition being true, and they include both adverbs of certainty which convey doubt on the information (1) or mental perception which shows how results are understood (2) and (3):

(96) 1. The student erred ***possibly*** because he is not familiar with the noun-pronoun concord. EN 9

(97) 2. … It is ***likely*** to be due to the modifications of these factors. CH 19

(123) 3. This ***can*** be rationalized intuitively with the favourable effect of… CH20

To sum up, the defining characteristic of accuracy-oriented hedges in the data is their contribution to the precision with which a claim is made. Their major function therefore is to provide a specification of the state of knowledge rather than hedge the writer's commitment to the claim. However, as already indicated, English and Chemistry graduate researchers hedge, having their image in mind. Hence, they make use of writer-oriented hedges.

4.2 Writer-Oriented Hedges

It is apparent that, in some cases, researchers in question seek to present claims for which they lack adequate grounds. The hedges used in this sense therefore attest to their desire to gain some distance from the propositions rather than simply specify the accuracy of the claim. Here, care is taken to avoid assuming explicit responsibility for an assertion. According to the model, there are a number of ways in which this pragmatic purpose for hedging may be achieved. However, the most distinctive characteristic of writer-oriented hedges in the data is the absence of writer agentivity. In this way, claims are presented to reduce the author's responsibility for performing the act by the use of passive constructions or making a clause the subject:

(99) *It was also observed* that, at each sampling site, cadmium levels are higher than mercury levels.
CH 1

(100) The rhythm in the transcription *is assumed* to be peculiar to the various backgrounds of the participants.
EN 16

Another common strategy used by the researchers to distance themselves from their claims is the construction of "abstract rhetors" (Hyland, 1998, p. 126) which, by nominalising a personal projection, suggests that the situation described is independent of human agency:

(101) *The data agrees* with the findings of the writers above.
EN 8

(102) *Table 5.12 shows* that most students now think the sole use of the masculine pronoun to refer to … has outlived its importance.
EN 10

(103) *The sampling gave* a least mercury concentration of 3.58 ug/g and a high of 4.3 ug/g in the second sampling.
CH 4

The role of epistemic lexical verbs, particularly judgment lexical verbs, can be said to be central in qualifying speculative claims. In the data, these epistemic verbs are the principal means by which writer-oriented hedging is accomplished. As depicted above, these verbs are sometimes combined with non-writer agents to indicate that the writer is not prepared to personally guarantee the proposition. The tentativeness conveyed in this strategy relates principally to the commitment the author wishes to bestow on the statement rather than a strict concern with the truth of its propositional relationships.

A further means of implying that the writer does not wish to be thought fully and personally committed to a belief in the proposed state of affairs is the use of evidential lexical verbs to often avoid attributing beliefs to the writer.

(104) *It seems that* 'zeal' and 'enthusiasm' were considered as one unit rather than separate units that require a plural pronoun to refer to them.
EN 4

(105) *From this discussion, it would appear that* the concentration levels in muscles follow that of the river.
CH1

Thus far, the discussion on writer-oriented hedges indicates that English and Chemistry masters students presume that assuming full responsibility of claims could be problematic, if

not suicidal. It is especially so when such a claim is proven to be false. They therefore deem it not only as a matter of convention but also as a matter of convenience to distant themselves from their claims. Deeply concerned about the readers rather than themselves, they thus resort to writer-oriented hedges to make their claims more acceptable.

4.3 Reader-Oriented Hedges

 It was also observed that English and Chemistry student researchers express propositions as an alternative view rather than a definitive statement of truth. They hedge to signal that the claim is perhaps a personal opinion, allowing their readers to choose the more persuasive explanation. Personal attribution, from the model, is one the means used to express these reader-oriented hedges when introducing claims. Like writer-oriented hedges, reader-oriented hedges in the data make frequent use of epistemic lexical verbs (judgment i.e. 1-2, and deduction i.e. 3-4).

> (106) 1.Thus *we propose* that many micro-organisms will concert platinum in solids to very harmful compounds that could cause several health problem.   CH 3

> (107) 2. *I believe* that, by the time the groups write their third assessment, they might be prepared to …
> EN 12

> (108) 3. *We infer* that the electrode will respond well within the iron concentration range in human blood serum.   CH 18

> (109) 4. *I can speculate* that the address forms were used for three purposes.   EN 16

In addition to the use of personal subjects with lexical verbs, personal attribution, which is an indication of alternations and an establishment of a relationship with the reader, may be invoked by the use of questions:

> (110) Could such a putative interaction of an aminoacyl-tRNA synthetase with precursor tRNA have a physiological significance?   CH 19

> (111) With regard to violation of unity text, what two major problems do students have?   EN 20

Questions, as exemplified above, signal an important unresolved issue or the tentativeness of a solution, but also they genuinely seek a response. In so doing, they involve the reader more closely in the research and convey the communality of the scientific quest (Hyland, 1998).

So far in the discussion, we have attempted to explore the various discourse functions that hedges used in English and Chemistry masters theses perform. It has been observed that the pragmatic implication of the extant use of hedges in the data not only affects the claim itself, but also the authors as well as the readers. However, it is as ye not known whether there is any preference for a particular pragmatic function of hedges with respect to a particular discipline under discussion. The subsequent discussion then focuses on the possible differences that may exist in the choice of hedges as regard their pragmatic functions in English and Chemistry.

ii.   *Are there any significant differences between the functions of hedges used in English and Chemistry Masters' Theses?*

Fig. 1: Frequency of Functions of Hedges in English and Chemistry Masters Theses
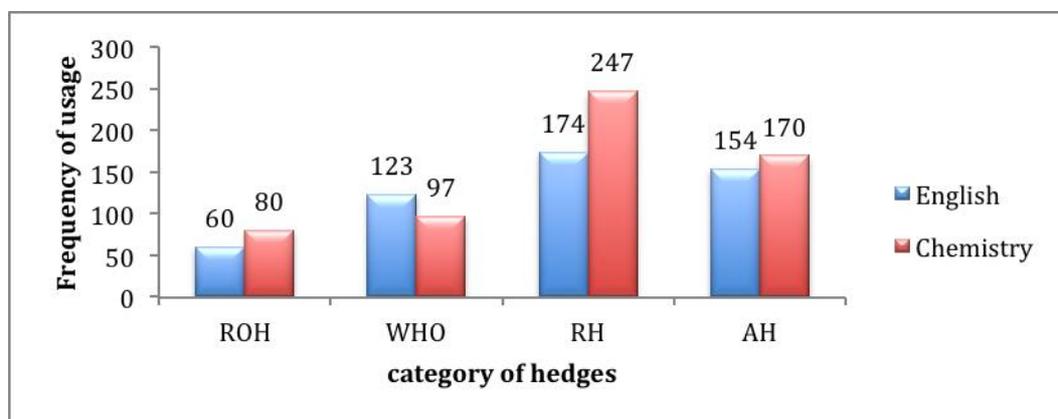
KEY: ROH - Reader-oriented Hedges**,** WHO - Writer-oriented Hedges**,** RH - Reliability Hedges**,** AH - Accuracy Hedges

From Fig. 1 above, beginning with the various distributions of hedges, it was observed that Chemistry (80) employed about 33.3% more Reader-oriented hedges than English (60). With Content-oriented hedges, however, particularly on Accuracy-oriented Attribute hedges, Chemistry (170) employed about 10.4% higher than English (154). But with Accuracy-oriented Reliability hedges, Chemistry (247) used about 42% more than English (174). So far, it can be inferred from the various instances of use of hedges above that the scores for Chemistry are almost always higher. In contrast with Content-oriented hedges, instances of Writer-oriented hedges in English (123) were about 26.8% higher than Chemistry (97).

On the range of hedges, the situation was no different. With regard to Reader-oriented hedges, whereas the range in English was 1-6, that of Chemistry was 1-8, showing a difference of 2. On Content-oriented hedges too, specifically with Accuracy-oriented Attribute hedges, the range in English was 2-16 but that of Chemistry was 1-17. On Accuracy-oriented Reliability hedges, however, the range in English was 3-14 but in Chemistry, it was 5-19. In each of the range of distribution of hedges above, it was obvious that Chemistry, again, had a higher score. On the contrary, the range of hedging devices in English with regard to Writer-oriented hedges was higher than in Chemistry. Whereas the former recorded 3-9, the range for the latter was 2-9.

Meanwhile, the mean values for both data also suggest a difference in the use of hedges where in each instance, the score for Chemistry was higher. For example, whilst the mean score for English, as far as Reader-oriented hedges is concerned, were 3.1, that of Chemistry were 4.1. The same was the case for Accuracy-oriented Attribute hedges where English recorded a mean score of 7.3 but 8.5 for Chemistry. Again on Reliability hedges, the mean score for English was 9.2 and that of Chemistry was 12.8. In contrast, the mean score for English (6.1) in Writer-oriented hedges was higher than that of Chemistry (4.3). On mode, however, whilst the score on Reader-oriented hedges for English was 2 occurring 7 times,

that of Chemistry was 4 occurring the same number of times. With Accuracy-oriented Attribute hedges, the mode for English was 5 with 6 occurrences, but Chemistry had an average of 9 occurring twice. The mode for Accuracy-oriented Reliability hedges, however, was 7 for English but 19 for Chemistry, indicating about three times difference. Here, again, except for Writer-oriented hedges where English had a higher mode score of 5 as against 4 for Chemistry, all the mode scores for Chemistry were higher.

Thus far, the descriptive statistical analyses above seem to suggest that, in terms of discourse functions of hedges, particularly with regard to frequency of occurrence, there is some difference in English and Chemistry masters theses. The analyses seem to suggest one fact, which is that the frequency of hedges used in Chemistry is higher than that of English. However, the subsequent discussion seeks to do a more formal statistical analyses using a chi-square to test the assumption above.

Table 1: Frequency of Pragmatic Functions of Hedges in English and Chemistry (17, 500 words)

Programme		Pragmatic Functions of Hedges			P value
		Accuracy oriented hedges	Writer oriented hedges	Reader oriented hedges	
English	60	60.5	27.1	12.4	$X^2 = 14.12$, df $= 2$, P $= 0.002$
Chemistry	80	66.2	16.5	17.3	

Table 1 demonstrates that the pragmatic functions that the hedging devices above perform vary in English and Chemistry. The variation of these hedging devices is made manifest in terms of the frequency and distribution of their occurrence with respect to the disciplines in question. With regard to Reader-oriented hedges, the chi square test generally indicates that there is a statistically significant difference of (P = 0.002) between English and Chemistry.

Table 2: Frequency of Content-oriented hedges in English and Chemistry (per 17, 500 words)

Programme		Content-oriented hedges		P value
		Accuracy oriented hedges	Writer oriented hedges	
English	451	20.2	79.8	$X^2 = 21.22$, df $= 1$, P $= 0.001$
Chemistry	514	65.2	34.8	

With Content-oriented hedges, which are divided into Accuracy-oriented and Writer-oriented hedges, the finding is similar to the Reader-oriented hedges. Beginning with Writer-oriented hedges, Table 6 indicates that there is a statistical difference of (P = 0.001) where it is shown that English authors have much preference for Writer-oriented hedges (79.8) than their counterparts in Chemistry (34.8). The implication is that researchers in English seem to be much more concerned with their image than those in Chemistry. Thus, they either make shields for themselves against any future falsification of their propositions thereby using these kinds of hedging devices. As much as necessary, researchers in Chemistry also employ hedging devices to mark this pragmatic function.

Table 3: Frequency of Accuracy-oriented hedges in English and Chemistry (per 17, 500 words)

Programme		Accuracy-oriented hedges		P Value
		Attribute hedges	Reliability hedges	
English	328	40.8	59.2	X^2 = 9.78. df = 1, P=0.002
Chemistry	417	18.5	81.5	

In this section, authors in Chemistry employed 425 Accuracy-oriented hedges whilst their counterparts in English used 329. From the Table above, we note that there is again a statistical difference of (P = 0.02) between the two groups with respect to the use of Accuracy-oriented hedges. What this means is that, unlike English researchers who seem to have the greater desire to establish an interpersonal relationship with their readers thereby making heavy use of Writer-oriented hedges, Chemistry researchers appear to have the desire of being objective in expressing their claims with a greater degree of precision. They therefore meet this pragmatic obligation with two kinds of hedges, which are *Attribute* and *Reliability* hedges. With quite a high tendency to use Accuracy-oriented Attribute Hedges, Chemistry researchers, rather than English researchers come out as the ones who aim more at specifying more accurately how their results approximate the idealized world. They achieve this goal by employing adverbs which are mostly approximators. However, the use of Attribute hedges (18.5) in Chemistry is far lower than Reliability hedges (81.5) in the same discipline. This is also an indication that, even within Chemistry, there is relatively little emphasis on precision regarding the claims made as compared to declaration of depth of knowledge with regard to certainty.

However, researchers in Chemistry seem to have deeper concern for expressing their proposition by acknowledging their level of certainty or uncertainty thereby showing how

reliable their claims could be. This observation seems to account for the much more frequent use of Accuracy-oriented Reliability hedges compared to the Accuracy-oriented Attribute hedges. The preference for Reliability hedges to Attribute hedges is the same in English even though the total use of these hedges is considerably lower than they occur in Chemistry.

5.0 CONCLUSION

This paper has provided an account for the pragmatic functions that hedges in English and Chemistry masters' theses perform. It has again looked at the differences that exist among these hedging devices with respect to their functions as far as each discipline is concerned. As regard the pragmatic functions hedging devices perform in the data, the paper underscores that there are three major pragmatic reasons for which these hedging devices are employed. They are the researchers' desire to express claims with precision, the want of self protection against claims made to prevent possible future criticisms, and the need to present claims with the needed humility to be able to gain reader gratification. According to the study, these pragmatic functions were achieved with the use of Accuracy-oriented hedges, Writer-oriented hedges, and Reader-oriented hedges.

The study again revealed that there is a marked difference between functions of hedges used in both English and Chemistry masters' theses. Although graduate researchers from both departments seem to share the same pragmatic considerations upon which hedges are employed (i.e. the need to present claims with uttermost accuracy, providing shield against the self through investing relatively little confidence to the truth proposition made, and viewing the reader as a final assessor of the claim, thereby making the claim tentative as can be inferred from the above pragmatic roles), it is obvious that there is a disparity as regard which pragmatic role each group puts premium on. For example, whereas researchers in Chemistry tend to be more judicious in the use of Reader-oriented hedges and Accuracy-oriented hedges, researchers in English tend to use more of Writer-oriented hedges. This statistical difference is made more obvious in the chi-square analyses (see Tables 5, 6, 7, and 8) where, in each instance, the alpha value (i.e. P) was below 5.

The study is a contribution to the existing body of knowledge on hedging in academic writing, in general, and thesis writing, in particular. Second, using data from sub-Saharan Africa and student writing, the study contributes to the body of knowledge on disciplinary variation. Finally, the study has implication for further research since this study can be said to have set the stage for an extensive discussion on the topic from the point of view of students' writing and from the Ghanaian perspective.

Based on the findings and implications emerging from the present study, there would be the need for further investigation that would interrogate some issues as follows: First, there could be a study that would investigate whether there exist any linguistic means of hedging that would be uniquely Ghanaian and would be different from the various lexico-grammatical forms of hedging that the literature mentions. A sociolinguistic study of this kind would

provide a clue as to how innovative Ghanaian academics could be when it comes to exploring the linguistic resources available to suit the purpose for which they write. Second, there could be a study that would investigate whether writers are conscious of the hedging devices that they employ in the claims they make. This study, which would more qualitative in nature, should, among other things, be interested in investigating whether the underlying reasons for which such hedging devices are employed are achieved. Finally, there should be a study that would investigate whether or not a researcher could be said to have over hedged or under hedged. Like the previous recommendation, such a study should be interested in finding out the underlying reasons for the use of such quantity of hedges and more importantly their effect on readers' acceptability of the claims made. The study should again attempt to explore the possibility of one hedging device making more impact than many.

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