

Functions of Hedging: The Case of Academic Persian Prose in One of Iranian Universities

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Abstract

As a feature of academic writing, hedging deals with toning down of scientific claims. There is a clear pedagogical justification for clarification of the concept, especially since it is usually a source of failure in the writing of many foreign/ second language writers of the English language. This problem prompted us to explore it in-depth and see what the underlying assumptions of our academic authors are regarding the issue of hedging. Several studies have aimed at defining and identifying it based upon formal and functional categories (Myers, 1989; Salager Meyers, 1994; Crompton, 1997; Hyland, 1994, 1997, 2005; Lewin 2005, etc.). In the present study, we have tried to investigate the notion in Persian academic prose in two departments of an Iranian university. In order to bring theory into practice, through the text analysis of 32 RAs and some interviews with the writers of the texts under analysis, the question of the function of hedging is studied. It seems that the authors in this study use hedging mainly in its threat-minimizing and politeness functions, which are the social aspects of the issue. Epistemic modality as a cognitive motivation for hedging appears to be less of a concern to the authors under the study.

Key words: Hedging; Epistemic modality; Tone down; Knowledge claim

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INTRODUCTION

In this section, we will introduce the concept of hedging; provide a brief history of the issue, followed by our rationale for conducting the research. Hedging as an important feature of academic writing has recently received a good focus in applied linguistics. It constitutes the expression of possibility and cautiousness in scientific claims. Academic writing is the domain where claims, unproven and non-fact statements, are presented, and since they do not have the status of facts, they should be expressed tentatively. It is more academic to say 'it seems that X' rather than 'it is X,' where X is a proposition.

Hedging was first introduced by G. Lakoff (1972) as "words whose job is to make things fuzzy..." (P.195). From that time on, a good body of conceptual and empirical research has been undertaken on the subject. Researchers have aimed at studying different issues relating to the concept, mainly the issues of its definition, form and function, both in conversational (e.g. Holmes, 1984, 1995; Coats, 1989) and in written corpora (Myers, 1992; Fahnestock, 1992; Round, 1982; Salager-Meyer, 1994; Hyland, 2005; Lewin, 2005). Besides having theoretical attribution, studying hedging is important in this regard that we think the reason why many of researches done in our country are not reflected in English countries may be the issue of hedging. Hedging is a contested issue. The divergencies are greater regarding the question of its form, because forms that perform the task of hedging have other functions too (Crompton, 1997, Hyland, 1996).

There also has been a good deal of debate on the problem of the function of hedging. For Skelton (1988a), hedging means *commentative language*, a function through which propositions are modulated. Myers (1989) regards it as a *politeness* strategy and Hyland (1994) identifies it with *epistemic modality* as defined by Lyons (1977): "Any utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition

expressed by the sentence he utters... is an epistemically modal or moralized sentence” (p.797).

Then Hyland explains that “the epistemic system is therefore concerned with the display of confidence, or more usually lack of confidence, in the truth of propositional information. Typically, hedging is expressed through use of modal auxiliary verbs such as *may...*” (p.240). Crompton (1997) defines it as “A hedge is an item of language which a speaker uses to explicitly qualify his/her lack of commitment to the truth of a proposition he/she utters” (p.282). While regarding Myers’ sociological account of hedging as ‘only a partial account’, Hyland (1996) believes that there is ‘a complex overlap of motivations for hedging’ (p.434). Hyland (1997) who tries to present a link between sociological and discourse analytic viewpoints, again indicates that hedging is a multi-functional concept, and expresses three aspects of academic culture: *empiricism*, *Collegiality* and *competitiveness* (p.24). Salager-Meyer (1994) points to some reasons for hedging, proposed by different researchers. First, she indicates that the ‘most widely accepted view is that authors hedge their claim “to reduce the risk of opposition and minimize the threat-to-face that lurks behind every act of communication” (p.149). The abovementioned functions have mostly proposed social aspects of hedging in the process of academic writing, while Hyland for the most part regards hedging as a cognitive strategy. He believes that science always has limitations and exceptions, and scientific claims should consider the scientific limitations.

In order to bring theory into practice, the present study aims at studying the notion of hedging in Persian academic writing. Among the three main questions on the subject, the questions of its definition form and function, we preferred to concentrate on its form and function, since as we began the research, we came to know that Iranian writers in our study were not theoretically familiar with the issue. So it was almost impossible to discuss the different definitions on the subject. In fact, they had learnt it through *informal learning* and we will have an indication to this informal learning later on. Our findings are presented in two papers. The present paper is devoted to the problem of its function. On the one hand, we wanted to know what motivations the academic writers participating in our study have, and on the other hand what directions these motivations have, social or cognitive. After the text analysis of 32 scientific articles, we interviewed their writers. We tried to investigate their motivations for hedging, that is, why had these writers used hedges?

As the interviews went on, it appeared that these writers were not *formally* familiar with the issue and had learnt it implicitly, through *informal learning*. For the same reason, we will present an account of the first reaction of the authors, followed by a brief discussion of

the informal learning through which they had learnt to hedge their claims.

1. REVIEW OF LITERATURE

In this part, we will briefly discuss some of the functions so far identified by different experts in the field. Researchers like Salager-Meyer (1994) and Hyland (1994) identified some lexical or grammatical constructions such as *modals* or *If-clauses* as hedging devices, emphasizing the role of context, while Crompton (1997) disapproves of such ‘lexico-grammatical’ approaches, and claims that hedging can only be approached at the sentence level. He introduces six sentence patterns for identification of hedging instances. Salager-Meyer (2000) disapproving such a *positivistic* point of view hold by Crompton, believes that realization of hedging cannot be formulized within his six sentence patterns.

Myers (1989) applied Brown and Levinson’s (1987) anthropological model of politeness to academic writing in which, politeness is defined as a “strictly formal system of rational practical reasoning” (Brown & Levinson, 1987, p.58 as cited by Myers 1989). Myers believes that hedging in academic writing is a politeness strategy like other politeness strategies used in everyday social interactions. He thinks that any academic claim is a “threat” (or Face Threatening Act “FTA”), because new claims, regardless of whatever they affirm or contradict, carry new ideas and points. In fact, as Myers himself puts it, a new claim limits other researchers’ “freedom to act” (p.16).

Hyland (1997) who considers *collegiality* as one of the functions of hedging writes “[t]his audience-oriented aspect of claim design has been most extensively discussed by Myers (1985, 1989) who argues that claims are modified to reduce the potential threats they contain to the ‘face’ of colleagues” (p.26). According to Hyland (1997) “hedges are thus basically politeness devices, employed to minimize the fact that claims solicit acceptance and supersede the claims of others” (p.26). In this view, hedges are devices which parallel the presentation of new claims on the one hand, and gaining their acceptance on the other hand. However, Hyland (1994, 1996, 1997, 2005) emphasizes the multi-functionality of hedging. He (1996) writes “Myers’ work is clearly suggestive and central to any discussion of hedging, but his extension of Brown and Levinson’s (1987) conversational model provides only a partial account of hedging in scientific discourse” (p.434).

Later on Lewin (2005) found that the authors in her study did not consider politeness as a general motivation of hedging in their works. She writes “[o]ne can also ask whether a theory of motivation based on conversational encounters is applicable to the arena of scientific writing, where so many personal elements might compete with the need to be polite” (p.173). She argues that in order

to strengthen their 'politeness and prestige' they might need to 'enhance, rather than mitigate.' But, in line with Hyland (1997), we think mitigated claims may gain more acceptance by the discourse community than non-hedged claims that leave no room for others.

Salager-Meyer (1994) points to some reasons for hedging, proposed by different researchers. First, she indicates that the 'most widely accepted view is that authors hedge their claim "to reduce the risk of opposition and minimize the threat-to-face that lurks behind every act of communication" (p.149). She means that in this function, writers avoid personal accountability for statements. As the second function of hedging, she refers to Salager-Meyer (1993) and Banks (1994) who claim that hedging is used for being more precise in reporting results. She writes:

"[h]edging may present the true state of the writer's understanding and may be used to negotiate an accurate representation of the state of the knowledge under discussion. In fact, academic writers may well wish to reduce the strength of claims simply because stronger statements would not be justified by the experimental data presented. In such cases researchers are not saying less than what they mean but are rather saying precisely what they mean by not overstating their experimental results". (Salager-Meyer, 1993, as cited by Salager-Mayer, 1994, p.162)

So, according to this concept, hedging is a phenomenon that is tied up with epistemology. Researchers hedge their claims because strong claims 'would not be justified by the experimental data'. In other words, it would be unscientific to make strong claims.

As Salager-Meyer's idea of hedging implies, its function is to give a more accurate account of science. In fact, in this view, scientists do not want to make their claims seem vague for a purpose such as politeness, but they think of expression of probability as the essence of making knowledge claims. Through hedging they try to show something of the nature of knowledge. This nature is characterized by limitations and exceptions. So, it would be wise to state the claims so that those limitations and exceptions are taken into consideration.

Very close to the above notion is emphasized by Hyland (1994), who identifying hedging with *epistemic modality*, accepts Lyons' definition for epistemic modality: "[a]ny utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition expressed by the sentence he utters... is an epistemically moralized sentence" (p.797). He believes "[a]cademics are crucially concerned with varieties of cognition and cognition is inevitably hedged" (p.240). Hyland (1997) notes that as far as scientific results are concerned, there are always some deviations from what is commonly accepted or the 'idealized context' of any scientific work. So, to accurately describe such variations "of empirical conduct," claims are hedged. Hyland (1997) calls this function of hedging as *empiricism*.

Collegiality is another function of hedging discussed by him (1997). Hyland (1997) tries to link sociological and discourse analytic viewpoints and indicates that hedging is a multi-functional concept by saying: "[s]cientific 'truth' is as much a social as an intellectual category" (p.241). So he thinks of cognitive factors as well as social ones as the rationales behind hedging.

Competitiveness is the third function which Hyland (1997) accounts for hedging. He referring to the dictum 'publish or perish' writes "[t]o gain the greatest recognition for their work, scientists have to express their claims to create the greatest impact. Usually the most significant claims are those which have the widest relevance and therefore assert the greatest generality" (p.28). He concludes that academic writers usually increase the generality of their claims by weakening the amount of certainty they award those claims and they "protect themselves from the possible consequences of error by limiting their personal commitment" (p.28).

Lewin (2005) asked some academic writers to identify hedging instances in their own texts and express their motivation for using them. She found that politeness was not cited by the authors as a general motivation for hedging. According to her this "raises questions about Myers' ascription of hedging in general to politeness theory" (p.173). Some of the interviewees in her research considered uncertainty 'a reflection of truth', which she explains as: "[i]nstead of saying *less* than they mean, scientists are actually saying *precisely* what they mean". (p.173). As she herself indicates, this is in accordance with Salager-Meyer (1994) who thinks sometimes authors hedge their propositions to give a more accurate account of the truth. It is the same function indicated by Hyland (1997) as *empiricism*.

It was an introduction to the problem of functions of hedging. The next section is devoted to the methodology of this work.

2. METHODOLOGY

Hedging as a subcategory of metadiscourse is a very flexible issue. It is a device used in interactions between authors and readers through language. So, any investigation of hedging would deal with the question of its function as well as its form. In order to study the functions of hedging in the academic discourse of an Iranian university, we thought it would be better to follow a qualitative research model, because qualitative research involves an in-depth understanding of human behaviors. It investigates the **why** and **how** of a phenomenon not provided by a quantitative research model. Also, in the qualitative inquiry, the researcher seeks to interpret things from the viewpoints of participants, and it is a collaborative endeavor. Among the different traditions of qualitative research, ethnography seemed the most

appropriate, since we were doing a triangulation of observation, text analysis, and interview in the culture-sharing field of academics over a period of time. Also we know that Research Articles (RAs) are one of the most important sites of producing knowledge claims. The results of human cognition are mainly expressed in RAs. So, RAs are a site which can reflect the dominant epistemological perspective through which they are formed.

2.1 Data Collection and Codification

We conducted an observation in an Iranian university. We collected the data in the Departments of Persian Literature and Chemical Engineering. Our intention in choosing these two disciplines was to observe whether there existed any differences between soft and hard sciences in regard to their assumptions of the functions of hedging. As the first step, 32 RAs were selected, 16 RAs from Persian Literature and 16 RAs from Chemical Engineering. These articles had appeared in referred journals. The 16 Persian Literature RAs were written by four members of staff in the Persian Literature Department. This was the same for the Chemical Engineering Department. So, we had sixteen articles from this discipline, too.

Since hedging provides author-reader interaction, it is important to have an understanding of authors' intentions about it. In fact, the authors are at one end of hedging, and at the other end are the readers. Hedging acts as a bridge which links authors' intentions and readers' receptions of those intentions. That is why questions which aim at studying problems of forms and functions of hedging cannot be answered solely on the basis of text analysis. Markkanan & Schroder (1997) claim that "[a] text does not contain hedges per se but gets them through the author-reader interaction" (p.231). Text analysis alone is not sufficient because the authors' intentions are not completely deducible from their texts. On the other hand, readers are outside the texts. Although authors have the sense of their audience in the process of writing, and texts reveal some information about their audience, the actual reaction of the audience is not predictable. Authors are definitely writing for their assumed audience, but through text analysis the real impact of their intentions on readers cannot be determined.

As Lewin (2005) indicates, in a few cases analysts have sought clarification of hedged propositions from experts in the same field as authors of some texts, but they have not consulted the actual authors of the texts themselves (p.164). She mentions Hyland (1998a, 1998b) as the one who has made significant attempts to bridge the gap between theory and practice by interviewing authors. Lewin (2005) adds that even in Hyland's studies, authors comment about their texts in general and there is only one example in which an author discusses hedging in one of his own texts (p.164).

Having these considerations in mind, after a text

analysis of 32 RAs, 16 in Persian Literature discipline and 16 in Chemical Engineering, in order to examine the actual writers' views, on the problems of form and function of hedging, we interviewed the actual writers of the articles.

2.2 Text Analysis

First, we collected some data which fit Crompton's (1997) six sentence patterns of hedging, because we had chosen Crompton's sentence patterns as our framework for identification of hedged instances. For this purpose, all of the hedged sentences were extracted and codified, accordingly. Since we have interviewed the authors of the 32 RAs, for the problem of confidentiality and ethical issues their names and their articles are not introduced.

The second base of the text analysis was forms that according to Crompton (1997) cannot be counted as hedging devices, while other researchers such as Salager-Meyer (1994) and Hyland (1994, 1997, 2005) consider them as forms of hedging. Although we had used Crompton's account of hedging and his six sentence patterns of hedging as the basis for identification of the data, we wanted to investigate members of staffs' views on those forms, too. This could provide us with a triangulation on the accuracy of Crompton's ideas. In fact, not only was his model examined, but what he excluded from his model could also be investigated. The forms that he does not regard as hedges are: 1. approximators, 2. attribution and passivization, 3. IF-clauses and 4. reporting verbs. So we tried to find some instances from the 32 RAs under analysis for these forms too.

Besides Crompton's patterns and forms that he rejects as forms of hedging, the discursual level of hedging was the third basis of some data collection. Hyland (1994) and Lewin (2005) believe that hedging can also be obtained at a level higher than a sentence level. Of course some of the examples that Lewin has presented for the realization of this level of hedging can be accounted for according to Crompton's patterns. Anyway, to have a deeper insight, the discursual level of hedging was also investigated.

Up to this stage we codified the data as: 1) hedged instances according to Crompton's patterns 2) hedged instances according to some forms other than Crompton's patterns, and 3) hedged instances at the level of discourse.

2.3 Interviews

As it was explained, since hedging is a means of author-reader interaction, it is important to have an understanding of authors' intentions of it. Authors may have different intentions when they hedge their claims, and may choose different forms for realizations of those intentions. So, questions which aim at responding the problem of forms and functions of hedging cannot be answered solely on the basis of text analysis. These matters are not predictable through text analysis only.

So, in order to have a better insight and bring theory

into practice, after the text analysis of the 32 RAs, we interviewed the actual writers of the articles. In fact, the actual writers' views on the question of form and function of hedging were examined. We interviewed four members of staff in the Persian Literature Department and four members of staff in the Chemical Engineering Department. We had analyzed four articles by each of them. These qualitative interviews were semi-structured since the purpose of the study was partly to understand these authors' intentions of hedging. An interview guide was also prepared. As it is often done in semi-structured interviews, the exact phrasing of the questions or the order of them was not fixed.

First we read some of the hedged claims made by the interviewees in their articles for them, and said that it seemed that they had toned down those claims. Then, immediately we asked them why they had toned down those claims. This question was meant to tap into their assumptions of the functions of hedging. This general question was followed by some specific questions to elicit more information. The next general question was about forms of hedging discussed before. This question was also followed by more specific questions as demanded by the discussion. Our findings related to the problem of forms are presented in a separate paper.

As far as the question of functions of hedging was considered, the members of staff stated different motives. What they stated was congruent with some functions which had already been identified by different researchers such as Myers (1989), Salager-Meyer (1994), and Hyland (1994, 1997). So those intentions were codified into three functions of hedging as: 1) Threat-Minimizing Strategy; 2) Politeness Strategy; and 3) epistemic modality.

Investigating the question of functions of hedging is the main concern of this paper. It is an account of the members of staffs' views on it as expressed through the interviews. However, before dealing with the functions they mentioned for hedging, their first reaction towards the notion of hedging will be discussed, followed by a discussion of the informal learning of hedging of the authors in this study.

3. DISCUSSION

3.1 The Impression of Hedging on the Authors

Lewin (2005) used the phrase 'tone down' to investigate the authors' motivations and form recognitions of hedging, because the scientists she had interviewed previously in a pilot study had interpreted hedging only in the pejorative sense of evading responsibility. She writes if she had asked "where did you hedge in this article (i.e. the article chosen by the participant for analysis)?" She was confident that the common response would have been "I never hedge" (2005, p.167).

So we used the phrase 'ba lahne molayem bayan

kardan' (tone down) as the key word of our first general question and almost in the rest of the interviews. We asked the interviewees that there seemed to be some propositions in their articles which had been *toned down* by them. Although we used the verb 'ba lahne molayem bayan kardan' (tone down) instead of 'tadil kardan' (hedging) in order to avoid the possible negative impact of it on the interviewees, they received (or treated) it in the pejorative sense. It seemed that they regarded *toning down* as a sign of a weak claim. For instance, one of them said: "My claim is totally (one hundred percent) true, and maybe it has been expressed as a weak claim because I wrote it when I had an M.A. Now if I rewrite this article, I will not tone down.(staff from Persian Literature)."

As it can be understood from this data, this interviewee regarded *toning down* as weakness. To him, if claims were scientific, they were powerful and there was no need to tone down. To bring another example, let's take a look at another interviewee's statement: "This problem is due to the style of academic writings and does not mean that my claims are worthless or weak. (staff from Persian Literature)." He attributed *toning down* to the stylistic aspect of academic writing and expressed that *toning down* did not mean the weakness of his claims. In fact, he said that he had *toned down* the claims not for his low commitment to them, but for stylistic considerations.

Among the 8 interviewees only 1 of the members of staff in the Chemical Engineering Department responded positively to our first question and said that he had *toned down* his claims "because claims must be hedged". It seemed that he was familiar with the concept of hedging.

We know that in qualitative interviews no leading comment should be given by the interviewer, but because of the negative impression of *toning down* on the interviewees, we had to explain a little about hedging as a valuable feature of academic writing. So, we mentioned that according to Crismore and Fransworth (1990) it is the 'sign of a professional writer of scientific texts' (p.241). We said that decreasing commitment to the truth of a claim does not necessarily mean it is weak, but shows the author's awareness of the way in which claims should be made. We added that by so doing, they would leave opportunities for other researchers to continue their path of study. After the explanations, all of them accepted that they had *toned down* their claims. One of them said: "Yes, if *toning down* means that a strong and reasonable claim be stated in such a way that leaves the door open for others, I have used it" (staff from Persian Literature).

Another interviewee stated: "Yes, it's good when an author is completely certain of her/his statement, but states it without complete certainty because of the nature of science or scientific considerations, and I have used it in different forms many times (staff from Chemical Engineering). One of the interviewees referred to a research study he had done which was not accepted for

publication by referees of one of Iranian universities and said: “Now I understand what was meant by ‘tadil kardan’ (hedging) when I sent an article for a university and they turned it back and wanted me to hedge my claim (Staff from Persian Literature).”

As these representative data show, the interviewees probably had tacit knowledge, but they did not have explicit knowledge of hedging as a positive feature of academic writing. When the notion was introduced to them, they accepted it more easily and were ready to discuss the instances of hedging in their articles. (Some of the members of staff did not even agree to be interviewed. They said that since they were not familiar with the topic of this thesis they did not want to be interviewed). The next section is about this tacit knowledge.

3.2 Implicit Learning of Hedging

After the first step discussed, the question that emerged was how the writers had learnt to hedge. 7 Out of the 8 interviewees declared that they had learnt it implicitly. The remaining one said that while he had been abroad doing his PhD, his supervisor had added ‘May’ to his claims in feedbacks received by him, and from then on he was accompanying ‘may’ with all of his claims.

The members of staff, who declared that they had learnt hedging implicitly, pointed out that they had not been instructed to hedge either in their undergraduate or in their postgraduate educations. They added that they had not studied any material which encouraged them to do so. They stated that they had hedged because others had done so. One of them said: “We have learnt to do so unconsciously, not through explicit instruction, but because authors have used it before us. So during our educations, especially when we were passing our doctoral degrees, because of having so many reading materials including scientific articles we learnt to write so (staff from Chemical Engineering). Another interviewee said that: “In fact, to use a more accurate expression, it should be said that we have acquired toning down through practice and reading scientific articles. We have never been explicitly instructed to do so (staff from Persian Literature).”

The point of these interviewees, especially the one whom we cited last with his indication to the word ‘tamrin’ (practice), can be argued with regard to the different ways of learning. What the members of staff stated considering the way they had learned hedging as an academic writing skill, can be understood in light of differences between formal and informal/non-formal learning. In formal learning, learning takes place through attending schools, institutions, universities, etc., and through passing some specific courses. While in informal learning, learners pass no courses for what they learn. They learn things just through practice or being a member of a particular community. It is through their membership in a community that they learn the norms of that community.

Coffield sets the scene:

If all learning were to be presented by an iceberg, then the section above the surface of the water would be sufficient to cover formal learning, but the submerged two thirds of the structure would be needed to convey the much greater importance of informal learning.

(Coffield, 2000, p.1)

It is commonly believed that academic writing skills are mainly learned informally. It means writers acquire writing skills mainly through different practices, (i.e. through the feedback they receive) and their membership in the discourse community of academic writers. Hasrati (2005) studied ‘some aspects of the process of academic socialization of a group of Iranian PhD students studying in five UK universities.’ He indicates “[w]hat is illuminating about this research is that the PhD students in this study learned most of what they needed through informal interactions with their supervisors and other PhD students” (Hasrati, 2005, p.567). Cheetham and Chivers (2001) have also investigated ‘informal learning amongst people working in professions.’ They indicate that although ‘[i]t should not be implied from the results that formal professional development programs do not have an important contribution to make’, the results of their study “suggest that much of the learning required to attain full professional competence of formal training” (p.285).

4. FINDINGS

The Staffs’ Motivations for Hedging: the Question of Function

Before going to the main finding, and to better understand Hyland’s notion of epistemic modality we think it is necessary to present a basic definition for hedging first, and then elaborate on that definition.

Hyland’s Definition of Hedging

Hyland (1994) notes that “Academics are crucially concerned with varieties of cognition, and cognition is inevitably hedged” (p.240). He identifies hedging with epistemic modality as defined by Lyons: “Any utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition expressed by the sentence he utters...is an epistemically modal or moralized sentence” (Lyons, 1977, as cited in Hyland, 1994, p.140)

Crompton (1997) also bases his definition of hedging on this one. We would like to explain our own understanding of ‘cognition’ and then discuss the reason why Hyland argues that ‘cognition is inevitably hedged’ and regards hedging as epistemic modality or mitigated cognition.

Cognition and Epistemic Modality

Longman Advanced American Dictionary (2003) defines cognition as: “the process by which you see or hear something, recognize it, and understand it.” According to this definition, cognition is a process through which we

understand things and it is constructed out of what we see or hear after that processing. What we see or hear can be referred to as data in technical terms. So, cognition is achieved when data are processed and interpreted. For instance, there are two phenomena such as addiction and divorce in the society. Everybody may observe these two phenomena. At this stage, they are considered as raw data and one cannot speak of cognition of any relationships between the two. However, some researchers may try to find a relationship. They collect and analyze data and try to extract a pattern out of that data. Then, they may come to cognition that, for example, in %60 of cases the divorces that had happened were caused by addiction. So cognition is a process through which the data becomes meaningful. It is clear enough that there are differences between observations, reports and data in general with the concept of cognition. If we call the first category as raw data (observations, reports, etc.), cognition is the outcome of the processed data. But where are data processed? In order to process the data, they should be passed through the methodology channel first. It is in the methodology process that the data are calculated and put into a logical order. Using the example provided, the imagined researchers who worked on the relationship between divorce and addiction choose a particular society in a given period of time and collect data. The researchers first provide the number of divorces and then try to find any logical relationship between the number of divorces and the addiction of any of the couples. Finally, they come to a conclusion which constitutes cognition. So, this is why cognition is different from data. Cognition is in fact the output of the work of the methodology system on data with given conclusions.

But why is the process of cognition and methodology so important and what is its relevance to hedging? As it was said, it is through methodology that the raw data which is, what we see or hear, turns into meaningful data and yields conclusions so that cognition can be achieved. In inaccurate cognition, one can say that, methodology has been missed. If in regard to the two phenomena mentioned, divorce and addiction, one does not do a methodological work, any claim can be made. One can claim that all divorces are caused by addiction, or %90 divorces are caused by it and so on. It is through the methodology that one comes to the cognition that, for example, %60 of divorces in a specific society at a specific period of time are caused by addiction.

In computers the central process unit or CPU does the task of data processing. In research done by human beings, the researcher's role is like the CPU in computers. The methodology is like the software which provides the computer with the task of data processing. So, it is the methodology part of any research which makes the data processing possible. Without methodology, researchers cannot process data and as a consequent, correct cognition

cannot be achieved, since cognition is regarded as the output of data processing.

At this stage, after clarifying the importance of methodology, we would like to discuss the relevance of methodology and hedging. We think that hedging is rooted in methodology. When researchers collect their data, they are aware of the limitations of their data. They know they cannot collect all the data about a specific phenomenon. In the case of the previous example, the researchers know that there might be some divorces which had not been recorded in official offices. Moreover, they know there might have been divorces in which although one of the couples had been addicted, it had not been the main cause for their divorce. These points are taken into consideration in methodology of any research. So it is in the essence of methodology that probable deviations or exceptional cases are dealt with. A researcher who passes their data through methodology processing is aware that other variables, different from those studied by them, might have been influential in gaining conclusions they had come to. So, careful researchers hedge their cognitions. Maybe this is the reason why Crismore and Fransworth (1990) stated: "hedging is the mark of a professional scientist, one who acknowledges the caution with which he or she does science and writes on science" (p.124).

With all the discussions, we now think one can better understand Hyland's concept of epistemic modality as the main function of hedging. What he means is that human knowledge, as the basis of human cognition in general, is moralized. It is mitigated, because cognition is not complete. There are a variety of limitations to cognition and consequently one cannot speak of absolute facts and findings in the world.

Now, let's discuss our main findings that two of which have social orientations for hedging, and one of which tends to have cognitive orientations.

4.1 Threat Minimizing Strategy (social)

The 4 members of staff in the Persian Literature Department declared that the threat minimizing strategy was the main reason why they hedged. They said that since they could not be aware of all of the related studies all over the world, they could not express their claims with complete commitment. One of them said: "Since we do not have scientific contacts with other universities (or inter-university relationships in regard to research studies) especially with foreign universities, we may make a claim which has been contradicted by others. So it is better to tone down the claims" (staff from Persian Literature). The point which can be drawn as the underlying assumption of this statement is that the epistemic modality of science is not of concern in this pattern of thought. One can conclude that from the point of view of this interviewee, if such inter-university contacts were established and he was sure of not being contradicted by others for the time being, then there would be no need to hedge.

In order to elicit more information and confirm our interpretation, we asked whether they had complete commitment towards their claims or not. Three out of four interviewees responded that they were quite confident of their statements and regarded them as absolute ones. One of them, for instance, said: "Even after hundred of years, the conclusions I have reached at are true. But there may be someone who does not agree with my conclusions" (staff from Persian Literature).

What the data show is congruent with Salager-Meyer's (1994) idea that the most widely accepted view is that hedging is the process whereby writers tone down their statements in order "to reduce the risk of opposition and **minimize the threat-to-face** that lurks every act of communication" (p.149). She believes that in this view, hedging is what Skelton calls "the politician's craft, not only a willed mitigation, but an obfuscation for dubious purposes" (p.149). Salager-Meyer cites Kubui (1988) and Fand (1989) who state that "hedges are used to signal distance and to avoid absolute statements which might put scientists (and the institution they work at) in a situation of subsequent conflicting evidence or contradictory findings" (Kubui, 1988, and Fand 1989, as cited in Salager-Meyer 1994).

Then it seems that these interviewees' intention of hedging was to maintain conservativeness. They were conservative in that they were cautious of the probable oppositions. As it was mentioned and was affirmed by the interviewees, they had complete commitment toward their claims, but used hedging as a policy which could minimize the threat of being contradicted by others.

The four members of staff in Chemical Engineering had a completely different view on this issue. They did not consider their claims as absolute facts which could hold forever, but regarded them true for the time being. It means that they believed in the instruments which were available and the present degree of human knowledge; that is, anyone doing the same the experiments would reach at the same results. One of them said: "It was previously believed that the Earth is flat and a lot of scientific facts which were expressed were based on that assumption. Later on that assumption turned to be wrong and consequently those scientific facts which were based upon it were put aside. Now we are working on a set of principles and theories which the present states of human knowledge affirm them. The point is that with the present knowledge and the instruments available, anyone doing the same experiments would reach the same result. It means what we do in experimental environments, while adopting scientific principles, cannot be contradicted by others" (staff from the Chemical Engineering).

They believed that since their discipline is within the hard sciences, they cannot interfere with their personal ideas and understandings in the research processes which they do mostly in laboratories. They believed that if

another researcher did the same experiment, they would reach at the same results. This meant that to them the role of the scientist as the agent or doer of an experiment was not of great significance. What were important to them were the data and the process of experiments of any research. They thought that what they had done were not contradictable. As a consequence, hedging was not considered as a threat-to-face strategy for them. The next function identified by some of the interviewees as their motivation for hedging was politeness strategy.

4.2 Politeness Strategy (Social)

All the four members of staff in the Persian Literature Department and two interviewees from Chemical Engineering Department believed that through hedging they wanted to display their politeness towards the discourse community. Of course, they did not use the term *discourse community*. They used the word 'readers'. They noted that they did not want to contradict others: "We tone down our claims in order to respect others' ideas. If somebody has worked on the issue of my research and has made a claim on it, I should tone down my own claim in order to be polite. I should avoid rejecting others' claims severely" (staff from Persian Literature). These authors regarded hedging as a politeness device. In fact, they did not want to challenge the existing literature. Claims are supposed to carry new ideas. They should be significant and original, at the same time, they cannot emerge suddenly. Every claim is built upon the works of other researchers. In fact, the process of knowledge formation is like a chain, every ring being connected to the previous ones. So, new claims have to get expressed in a way not to seem irrelevant to the previous ones. For instance, suppose a researcher wants to study the concept of *spring* in poetical works of Hafiz. As a necessity, he reads other researches done in the field. [Of course there may be no one who has done an investigation of the concept of *spring* in that book, but there might be researchers who have studied other concepts in Hafiz, similar to his study]. This author is better to show the relevance of his work to what has been done before. By so doing, s/he demonstrates that they are advancing the knowledge in that field. It is through the connection of claims that the chain of knowledge expands. The point that should be noted is that building one's claims on the previous knowledge does not necessarily mean that new claims always confirm the previous ones. They, in fact, may loose the basis of older claims or may affirm them and have a part in turning those claims into facts. Then, what is of importance in the process of knowledge formation or claim making is the issue of relevance. New claims may not only contradict previous claims, but may also be a threat to them.

We want to go further and point out that in both cases; whether new claims affirm previous ones or contradict them, they are somehow threats to them. In the case of contradictions, the matter is clear. When new claims are

made which contradict previous ones, they are threats to the face of those who have made the previous claims and weaken the states of those claims. But what if claims affirm the existing literature and previous claims? In this case we also regard them as threats, because new claims implicitly express that their authors have looked differently at the issues being studied, they carry the potential threats with themselves.

To better clarify the situation, imagine a person who carries out a research and comes to an idea and forms a claim. Another researcher who is interested in the first researcher's work cannot do the same work that the first researcher has done. This new work should be at least in some aspects different, otherwise it would be counted as a repetition. So new studies may be identical to previous studies, but cannot be the same. Since new studies are not the same as those performed on the issues before, they are new contributions, even if they affirm the previous claims. That is, although new claims which affirm the ones made before strengthen the status and position of those previously made claims, they are new ideas achieved differently on the same issues. New researchers with huge or slight differences in methods or other aspects come to new ideas and express what can be threats to the face of others. So whether claims contradict or affirm other claims, they may be threats to the position of those made before, and this urges authors to display politeness in expressing claims. Myers (1989) offers a rationale for hedges along with several conventions in academic writing. Myers applies Brown and Levinson's (1987) anthropological model of politeness. According to their model, politeness is a "strictly formal system of rational practical reasoning (Brown and Levinson, 1987, p.58)." Myers believes that "the same social variables which affect outcomes in everyday social interactions -social distance, power difference and rank of imposition- exist in academic writing and lead to similar outcomes" (1989, p.17). He points that the social ends of academic writers might be crudely summarized as "making a name for themselves" or in Swales (1990) terminology *establishing* and *filling a niche* (p.18).

But how can academic writers make a *name for themselves* and *establish a niche*? They can achieve these goals through claim making or knowledge transfer. We think it is better to clarify the distinction between knowledge transfer and knowledge telling. According to Geisler (1994) if claims made are original and add something to the existing stage of knowledge they are considered as knowledge transferring claims. Those claims which are only repetitions or imitations of previous ones carry no originality, and do not contribute anything to the existing stage of knowledge and are considered as knowledge telling claims. So if academic authors can produce original claims and transfer knowledge, they can make *names for themselves and fill a niche*. As Myers

(1989) debates, "any academic knowledge claim is a threat or Face Threatening Act (FTA) to other researchers in the field because it infringes on their "freedom to act" (p.19). Then he counts hedging in academic writing as one of a range of politeness strategies: "[h]edging is a politeness strategy when it marks a claim, or any other statement, as being provisional, pending acceptance in the literature, acceptance by the community-in other words, acceptance by the readers (P.R)" (1989, p.21). In Crompton's (1997) account of Myers (1989) the social role of researchers requires that claims be made. On the other hand, claims should be mitigated to gain the acceptance of the readers. Hedging as a politeness strategy can help writers to gain that acceptance.

In Myers' view of hedging mentioned above, hedging is what Crompton (1997) points to as a "product of social forces" (p.276). First researchers as members of an academic community try to fulfill their social roles, that of claim making. It is a demand urged by the community of academics that a researcher has to offer something new. This is seen as the social role of researchers. On the other hand, gaining the acceptance of the community for new ideas or claims is another phase of this social interaction (one was the social role of researchers in making claims, demanded by the community). We can state it this way: 1) There is a social force which requires researchers to produce claims as their social role and 2) There is a social force which requires the acceptance of claims by the community. Hedging provides the opportunity to express claims in a mitigated manner and gain community's acceptance. If we imagine writers and their claims at one side, and readers and their expectations at the other side, hedging is a bridge which links the two. So, writers achieve the acceptance of their new ideas by showing their politeness towards the discourse community using hedging.

Crompton (1997) indicates an important point that we think is necessary to mention in order to end up this discussion. He notes that, "although hedges can be politeness strategies, this is not to say that all politeness strategies are hedges" (1997, p.276). As it was discussed at the beginning of the discussion of the members of staffs' motivations for hedging, modesty was mentioned as a politeness strategy. But it was not used for the purpose of hedging or toning down the claims. It was used for removing the egotism resulted by self-mention. So, although hedging was seen as a politeness strategy by some of the interviewees, it does not mean that all politeness strategies (including modesty) are hedges.

Before going to 'epistemic modality' as the next motivation of the interviewees for hedging, we would like to add that what differentiated the threat-to-face minimizing strategy from the politeness strategy is that in hedging as a sign of politeness, authors aim at reducing the potential threats that their claims may contain to the

'face' of other researchers. In this case, authors are afraid of contradicting others and challenging the relevant literature. But the function that was discussed under the threat-to-face minimizing strategy is aimed at preserving the face of authors themselves. In this case, the authors' concern is not contradicting others, but they are afraid of being contradicted. In politeness strategy, authors do not want to be offensive. In threat-to-face minimizing strategy, authors want to be defensive.

4.3 Epistemic Modality (Cognitive)

One of the interviewees in the Persian Literature Department and one of the interviewees from the Chemical Engineering Department stated that they had hedged their claims because of the nature of science. They believed that since man's knowledge is limited and is subject to change, claims should be hedged. If we have a scientific viewpoint we know that it is the nature of knowledge which necessitates hedging. Man's knowledge is limited and, especially in the hard science, it is subject to change. "Limitation of knowledge plus its changes are two reasons for which claims need to be hedged" (staff from Persian Literature). Along the same line, another interviewee stated: "For description of the world's phenomenon, there have been always some exceptional cases. So we never say 'the evidences prove'; instead, we use 'the evidences show'. We should express our findings without complete commitment and leave room for what knowledge may reach in future" (staff from Chemical Engineering). What was indicated by these interviewees was that they were thinking of hedging as the realization of an intellectual activity. They considered limitation as an indispensable property of knowledge. They noted that there are always some exceptions to the facts of science. So they believed that claims should be hedged in order to have consideration for the unexpected. These authors wanted to lessen their commitment to the certainty of the truth of their claims because they believed that uncertainty is in the nature of science. This is congruent with 'epistemic modality' which is emphasized by Hyland (1997). Hyland notes that:

Because scientific results do not always correspond to researchers' expectations, writers frequently have to depict a situation in term of deviation from what is commonly accepted. Variations from an idealized conception of a particular relationship, behavior, procedure or appearance are common in science and to accurately describe such vagaries of experimental conduct, claims are hedged. The use of such hedges allows deviations between idealized models of nature and instances of actual results to be accurately expressed. In specifying more precisely the attributes to the phenomena described, scientists also contribute to the epistemological fabric of the disciplinary culture itself." (Hyland, 1997, p.24)

CONCLUSION

Hedging as an important feature of academic writing allows writers to express uncertainty towards their

knowledge claims in order to gain acceptability and situate them within the literature (Crompton 1997; Hyland 1997, 2005). As it was discussed, the members of staff have learned to hedge their knowledge claims through practicing norms of conduct in their discourse communities, which can be assigned to informal learning. When the interviewees were asked about the possible functions of hedging, they implied self-protection and threat-minimizing strategies as the prime reasons for hedging. The next function counted by them was the politeness strategy. However, three of the members of staff pointed to notions close to epistemic modality alongside those functions. It was interesting that these interviewees, who were not academically and formally familiar with the notion of hedging (although they have used it) as a feature of academic writing, expressed somehow the same motivations that have been stated in the literature. This may show the reason for the universality of hedging. There are almost the same reasons across different academic communities for which authors prefer to hedge their claims. They may want to display politeness towards the discourse community. They may wish to present their own face and reduce the threats which may question their status as professional writers. Finally, they may want to be more scientific by depicting unpredictable situations. In fact, they may feel that mitigated claims are better representations of human cognition. So they may regard epistemic modality as a means of being more scientific, accurate and precise. Therefore, it seems that the use of hedges as a feature of academic writing is affected by some rhetorical, socio-cultural and epistemological factors. However, a few of the interviewees referred to epistemic modality as the function of hedging (only two out of eight), while, politeness and threat-minimizing strategies were the most mentioned functions for hedging. So, our Persian academic writers' orientations towards hedging were more social.

As the term suggests, epistemic modality is a function which can reflect that specific epistemological perspective. We know that Hyland believes "[a]cademics are crucially concerned with varieties of cognition, and cognition is inevitably 'hedged'" (p.240). Holding such a view about human cognition is derived from a specific epistemological account of human knowledge as the source of any cognition.

In fact, it seems what is important in different academic communities is the dominant motivation for hedging, which in turn shows some aspects of the epistemological orientations of any community. What we are trying to convey is that regarding epistemic modality as the main function of hedging (Hyland, 1994; Crompton, 1997; Salager-Meyer, 1998) as well as the recent interest and attention to hedging itself appears to be derived from the modern epistemology of science which dominates the present scientific culture of the west. On

the same grounds, we think, epistemic modality is not that much of concern for Iranian RAs writers, because they are still adopting the traditional epistemology of science.

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