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Hedges, Boosters and Lexical Invisibility: Noticing Modifiers in Academic Texts

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The ways that writers distinguish their opinions from facts and evaluate the certainty of their assertions is central to the meaning of academic texts, yet this is an area that second language students often find extremely problematic. In this paper I examine the view that the items writers use to modify their claims, commonly referred to as *hedges* and *boosters*, may actually be unnoticed by L2 readers, a phenomenon Low (1996) calls the 'Lexical Invisibility Hypothesis'. Data is presented from a small retrospective think-aloud study which explores how 14 Cantonese L1 undergraduates respond to hedges and boosters in an academic text. The discussion is supported by questionnaire data which seeks to determine learners' awareness of the meanings of these forms. The results suggest that while the subjects generally attended to the boosters, hedges did seem to be more invisible.

Hedges and Boosters in Academic Writing

One of the most important features of academic discourse is the way that writers seek to modify the assertions that they make, toning down uncertain or potentially risky claims, emphasising what they believe to be correct, and conveying appropriately collegial attitudes to readers. These expressions of doubt and certainty are collectively known as hedges and boosters (Holmes, 1984, 1990). Hedges such as *might*, *probably* and *seem* signal a tentative assessment of referential information and convey collegial respect for the views of colleagues. Boosters like *clearly*, *obviously* and *of course* allow writers to express conviction and to mark their involvement and solidarity with an audience (Myers, 1989; Hyland, 1998a, b).

The crucial importance of hedges and boosters lies in the fact that readers expect claims to be warranted in terms of the assessments of reliability they carry, and appropriate in terms of the social interactions they appeal to. These devices help academics gain acceptance for their work by balancing conviction with caution, and by conveying an appropriate disciplinary persona of modesty and assertiveness (Hyland, 1996a). Hedges and boosters therefore express both interpersonal and ideational (or conceptual) information (Halliday, 1994), allowing writers to communicate more precise degrees of accuracy in their truth assessments. Indeed, in carrying authorial judgements, hedges and boosters can actually convey the major content of an utterance.

But while these kinds of authorial participation are central aspects of the rhetorical and interactive character of academic writing, they are often considered secondary to the purpose of conveying propositional information (e.g. Dee-Lucas & Larkin, 1986). In university contexts the acquisition of subject specific content knowledge is often an over-riding priority for faculty and students alike. In such circumstances there is a considerable danger that learners

will fail to process these interpersonal features adequately, and therefore ignore their crucial contribution to the meaning of the text. Low (1996) refers to such inattention, or lack of saliency, as the Lexical Invisibility Hypothesis, and it is this that I intend to explore here. In this paper I examine the extent to which a group of Hong Kong students attend to the presence of hedges and boosters in an academic text and their explicit understandings of these features. My purpose is to emphasise the importance of conscious awareness of such pragmatic features in teaching English for Academic Purposes (EAP).

Lexical Invisibility, Text Interpretation and Noticing

First, a bit of background. Low formed his Lexical Invisibility Hypothesis to investigate earlier claims that respondents do not notice, and so do not respond to, intensifiers and qualifiers in questionnaires (e.g. Gaskell *et al.*, 1993). His small think-aloud study investigated reactions to six boosters (*very, extremely, far, full, never, and consistently*) and two hedges (*seem and tend*) which are often used by questionnaire designers. Focusing on Likert-type attitude measurement items, Low found that four of the boosters were attended to by half the subjects, while the hedges, and the temporal intensifiers *never* and *consistently*, were far less noticed. This partial evidence for the lexical invisibility of hedges clearly has important consequences for questionnaire design, as non-attention to these items may influence subject response patterns. More importantly for EAP teachers is the possible relevance of these findings for the ways readers process academic texts. If learners fail to perceive the importance of these signals then they may not decode the writer's intention appropriately and misunderstand propositional information.

Reading is perhaps the most important skill for second language learners in academic contexts (e.g. Grabbe, 1991; Lynch & Hudson, 1991), yet it is one that learners often find extremely difficult (Littlewood & Liu, 1996). One major reason for these difficulties is the importance of lower-level processes in reading, particularly students' often limited lexical access. Despite considerable emphasis on top-down models of reading in recent years, the ability to understand textual meanings is only partly driven by the application of schemata, or domain-specific knowledge structures. Underlying these inferencing strategies are comprehension processes that crucially depend on basic language competencies which include, at least, a recognition of word meanings (e.g. McClaughlin, 1990; Segalowitz, 1991). Perfetti & McCutchen (1987), for example, have argued that domain knowledge is insufficient for text interpretation and that syntactic and vocabulary knowledge are critical components of reading comprehension. This suggests that reading is not only a thinking process, but also a linguistic one, and that academically-oriented ESL students need a large recognition vocabulary to cope with their course demands.

Unfortunately hedges and boosters have not generally figured prominently in learners' formal acquisition of this academic vocabulary. EAP textbooks have tended to focus on how referential information is typically conveyed, and largely disregarded epistemic aspects of texts (e.g. Hyland, 1994). This neglect in style guides and instructional materials is especially serious because English modality appears to be notoriously problematic for second language speakers (Hyland &

Milton, 1997). It is also significant because there is considerable evidence that students benefit considerably from teaching practices that develop an explicit awareness of what is to be learnt (e.g. Carr & Curren, 1994). Schmidt (1990), for instance, argues that some degree of conscious attention, or noticing, is necessary for linguistic input to become part of the learner's interlanguage system. Without some focus on these forms then, it is likely that learners will not acquire their meanings and that they may fail to be aware of them in their reading.

Researching Learner Awareness

Constructing an appropriate method for studying students' awareness of particular text items is not without difficulties. I wanted to discover whether readers attended to specific items without making this purpose obvious in my questions. My interest was not in what was probably uppermost in readers' minds, locating information to answer questions, but in their responses to the actual wording of the text. Direct observation of readers completing a genuine comprehension task might therefore produce data which masked reactions to terms other than those carrying the propositional content of the questions; a particular danger when researching L2 students. To avoid overwhelming respondents with referential content, questions had to be specifically targeted and relatively straightforward to process. In sum, I had to focus students' attention on what was relevant to the study, without bringing the hedges and boosters to their awareness as research items.

A second problem concerned how best to recover something of students' decision making in arriving at their answers. The issue of bringing subjective states and unconscious processing to the level of conscious reporting is a formidable one. Many cognitive processes are procedural, that is, routine and internalised operations which are often completed without any conscious recognition and therefore not available to verbal description. They are difficult enough for the respondent, let alone the researcher, to recover. Clearly no technique can hope to obtain objective data of another person's mental states as it is not possible to introspect in the same way that one can describe external sense data. But this does not restrict us to guessing. Verbal report methods have been widely, although often circumspectly, used to overcome these problems and to uncover processes that are not evident from a subject's behaviour. My solution was therefore to have subjects perform a comprehension task, and then to gather their verbal reports which explained their decisions.

Methods which involve recording participants' utterances as they attempt to perform a task, commonly referred to as 'think aloud' procedures, have enjoyed a resurgence in applied linguistics in recent years, although with an increased awareness of their limitations. Researchers acknowledge that such reports only provide a partial record of processes (Hayes & Flower, 1983), and are sensitive to the fact that the act of verbal reporting itself may distort the cognitive process being reported on (Stratman & Hamp-Lyons, 1994). But while there are critics of the procedure (e.g. Hulstijn & Hulstijn, 1984; Russo *et al.*, 1989), the method has been widely used and recommended (e.g. Afflerbach & Johnston, 1984; Lennon, 1989; Smagorinsky, 1994; Talbot, 1992). This is partly because the alternative is to deduce cognitive processes solely from subjects' behaviour, and this would obvi-

ously be far less reliable. In fact, the procedure provides a rich seam of linguistic data unobtainable by other methods, offering the researcher a source of considerable insight and a foundation for inferences about reasoning practices. Ericson and Simon (1980:247), in fact, argue that carefully elicited and interpreted verbal reports are 'a valuable and thoroughly reliable source of information about cognitive processes'.

Concurrent think aloud tasks are, however, not necessarily the best way of gathering this kind of data with second language students. It is likely that they may only be able to describe their thinking in their L1, and this may interfere with the way they perform the task or with their explanations. In addition, we know little about how the method interacts with different activities and with degrees of learner expertise (Stratman & Hamp-Lyons, 1994). Methodological studies have frequently found that subjects' verbalisations slow their progress during the task and may alter the cognitive processes used to complete it. In fact, the technique is difficult even in one's first language, and may require considerable modelling or training to accomplish. The practices uncovered in this way might therefore reflect those of a particularly articulate or extrovert group of learners, while ignoring others. For these reasons I modified the procedure to employ retrospective, rather than concurrent accounts, and to combine this with other sources of data, as I describe below.

Subjects, Data and Procedure

Subjects in the study comprised 14 Cantonese L1 speakers at the end of either their first or final year of study for a BA in English for Professional Communication at a Hong Kong university. I chose these students because of their reasonable L2 proficiency and their possession of a meta-language to discuss the texts. Subjects were selected from those responding to an advertisement requesting help with a language learning research project. For purposes of validity participants were not told of the precise focus of the study. The data comprised taped interview data, which sought to elicit subjects' *awareness* of hedges and boosters after completing a comprehension task, and a questionnaire which focused more directly on their *understanding* of these items.

I met each student individually and gave him or her a comprehension task. The task required students to read a short passage (800 words) based on an article by Rebecca Oxford (1989) summarising some of the research on language learning strategies, and to answer 15 focus questions (Appendices 1 and 2).

The text was selected as being a relevant topic for L2 speakers and of potential interest to English majors, who would also be familiar with most of the vocabulary. The text was slightly modified to minimise comprehension problems, and cut to a manageable length. Most importantly, additional hedges and boosters were added to ensure a rich field of target items. These were largely modal verbs, lexical verbs, adverbs, or clauses added to the beginning of targeted sentences to either boost or hedge what became a subordinated *that* clause (Table 1). Devices were clustered to co-occur in ways typically found in academic writing (Hyland, 1996a, 1998a), using both personal and impersonal voice. The items were drawn from the most common devices found in a 500,000 word corpus of academic research articles from eight disciplines, and also included the main forms used

Table 1 Boosters and Hedges used in the study

<i>Target items in questionnaire</i>	
Boosters	show that/always; demonstrate/substantially; clearly show/will; fact that; obviously/will
Hedges	suggest /may; seem; believe/could; appear to; might; hypothesise; assume /likely; speculate; possible; might
<i>Target items in text and questions</i>	
Boosters	clearly show (4); clear (3); definite (2); certain; fact that (2); show /always (1)
Hedges	might (5); possible (3); may (3); suggest (2); seem (2); hypothesise; likely (2); speculate; believe/could; assume; probably; indicate (1)

by Hong Kong learners (Hyland & Milton, 1997). The final version contained 25 hedges and 10 boosters. Several of my colleagues read the text and none considered it odd in any way.

Fifteen questions accompanied this text: 11 true/false items and four multiple choice questions. These items were not intended to test comprehension of the passage but to focus attention on particular sentences. Consequently they were mainly rewordings of the original, and did not require inferencing or relating information from different parts of the text. Because the objective was to recover whether the respondents had noticed the effects of the target devices, the questions drew the students to specific sentences and addressed the epistemic conviction of the writer.

I allowed subjects 20 minutes to complete the questions and then asked them to explain how they arrived at their answers. This gave sufficient time for them to reflect on each question, thereby reducing the risk of cognitive overload and making it less likely that simultaneous processing of task and report would interfere with their responses in either one. Immediate retrospective accounts seemed the best way to reduce the possibility of distortion through memory loss and to eliminate the opportunity for subsequent events to modify the decision making in the task. Each interview took about 40 minutes and at the end the subject was asked to complete a questionnaire (Appendix 3).

The questionnaire sought to discover the extent of the subject’s knowledge of the forms targeted in the test. Here I was interested to learn whether a student’s lack of response to the strength of a particular statement could be attributed to an inadequate understanding of the meaning of a device, or a failure to bring this knowledge to consciousness when processing the sentence. The questionnaire consisted of 15 statements taken from the reading and simply required students to mark each one according to whether they thought the writer was ‘completely certain’, ‘fairly sure’, or ‘uncertain’ about the claim, or whether they did not know. They were also asked to circle the words they used to make their choice. Once again, the statements were kept short and the language simple. The same

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questionnaire was also given to 75 non-native English speaking students studying in the same programme to get a wider idea of undergraduates' understanding of these forms. The items are given in Table 1.

The method obviously assumes that the subjects will be able to articulate what was subjectively salient to them when answering, and that the researcher can probabilistically reconstruct what the subject was thinking. An important consideration then is what counts as evidence for salience, and the extent to which paraphrase, synonyms, or other forms of *relexification* (McCarthy, 1988) can be said to support the inference that an item was attended to.

Like Low (1996), I was particularly looking for direct evidence of noticing as shown by students' explicit mention of the key term in their explanations. However, also like Low, I interpreted as indirect evidence cases where subjects used alternative phrasings to express equivalent ideas. For example, consider Joan's response to statement 6:

The gender differences in Ehrman and Oxford's study clearly reflect the fact that women prefer strategies which involve more social communication than men.

Joan: *I put this is false because the last sentence. It is definite result in the question but in the text only likely that women do this.*

Joan is obviously attending to the target items (*clearly* in the statement and *possible* in the text) and recognises the epistemic import of the terms, transferring *clear* to *definite* and *possible* to *likely*. Such alternatives were actually fairly rare, only nine cases in all, and repetition comprised most evidence of attention. However, I accepted these relexifications as 'prominence choices' which 'reflect ideas that the speaker feels are important parts of the message' (Low, 1996: 12).

General Results

The results of the retrospective think-aloud protocols suggest that subjects largely failed to recover writers' assessments of certainty. In reflecting on their decisions for particular responses, students frequently ignored the target items and based their decisions on the propositional elements of the sentence, often drawing the wrong conclusions as a result. Table 2 shows that based on both direct and indirect mention, students attended to hedges and boosters in only 50 out of the 210 possible cases, a ratio of 24%.

Clearly there are considerable differences in the extent to which students are able to recognise and make decisions about writer certainty based on lexical signals. Table 2 also indicates that while every subject shows some evidence of attending to one or more target items, awareness was very patchy and ranged from 8/15 (Stephanie) to 1/15 (Amy). Moreover, the similarity in overall results between first and third year students suggests a possible neglect of these features in their studies.

When we distinguish the responses to the strength of statements in particular sentences (Table 3), we find that boosters tended to be more visible than hedges, particularly to third year students.

Table 2 Direct (D) and indirect (I) evidence of attention by question (Q) and respondent (R)

Q	<i>First year students</i>							<i>Third year students</i>							Total
	May	Jessica	Amy	Anita	Tony	Chris	John	Joan	Ray	Cindy	Steph	Megan	Chris	Sandy	
1	D	-	-	-	-	-	-	-	-	-	-	-	-	-	1
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
4	D	D	-	-	D	D	I	-	D	I	D	D	D	-	10
5	-	D	-	-	I	-	-	-	-	-	-	-	-	-	2
6	-	-	-	-	D	D	-	I	D	-	-	-	-	-	4
7	-	D	-	-	-	-	I	-	-	I	D	-	D	-	5
8	-	D	-	-	-	-	-	-	-	-	-	-	-	D	2
9	-	-	-	-	D	-	-	-	I	D	D	-	-	-	4
10	-	-	D	-	I	-	-	-	I	D	D	D	-	-	6
11	-	-	-	-	-	D	-	-	-	-	-	D	-	-	2
12	-	-	-	-	-	-	-	-	-	-	D	-	-	-	1
13	-	-	-	-	D	-	-	-	-	-	D	-	-	-	2
14	-	-	-	D	-	-	-	D	D	-	D	-	-	-	4
15	D	-	-	D	D	D	-	-	-	-	D	I	-	D	7
Total	3	4	1	2	7	4	2	2	5	4	8	4	2	2	50
	23 mentions							27 mentions							

Table 3 Mentioning of hedges and boosters by statement (%)

<i>Focus of questions</i>	<i>Totals</i>		<i>First years</i>		<i>Third years</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Boosters (3, 7, 10, 12, 14, 15)	24	29%	9	21%	15	36%
Hedges (1, 2, 4, 5, 6, 8, 9, 11, 13)	26	21%	14	22%	12	19%
Totals	50	24%	23	22%	27	26%

Awareness of Boosters

Most subjects recognised the effect of at least one booster on a statement, with about half of the students displaying awareness of the items in 7, 10, and 15. These statements depend on *clearly show* (7) and *the fact that* (10 and 15) for their meaning, with two of them contrasting explicitly with the absence of conviction expressed in the question. This was picked up by several subjects:

Jessica (Q7): This was quite easy. *It says 'clearly show that' in the text but the question says 'cannot tell us'.*

Tony (Q15): Because C is a finding and it's a fact, a definite finding: 'the fact that'. It's not B because 'suggest' and 'probably' are not so sure as 'definite'.

Stephanie (Q15): 'The fact that' in the text, so I chose C.

KH: Why not B?

Stephanie: Because they have this fact. B is not correct because its only an implication of the writer, it says 'it's suggested they probably use strategies'. Just an idea. C is not an idea. They say it is a fact because they assume it is true. So I think this one is true.

The third statement (Q10) did not depend on such an obvious contrast. Instead it turned on students recognising that an unqualified proposition generally expresses a writer's commitment. In other words it is the absence of a hedge that provides the basis for matching the text and question here, the categorical assertion in the passage signalling assurance and fact-like certainty:

Tony (Q10): In the article it says 'highly motivated learners are able to learn languages ...', so these are the facts. They seem so sure about it. So the answer is true.

Ray (Q10): Well, this seems to be true because the writer says it is a fact. Yeah, I'm pretty sure it is true.

The booster *clearly show*, however, also occurs as a correct response to Q14, but only four subjects directly attended to this item. Here students have to recognise that this device carries a similar degree of firm conviction as the phrase *strongly suggests* in the question. In fact, however, students tended to transfer their focus to the propositional content in explaining their decisions:

May: Here it says 'typical learning situation', but in the question it refers to general situation. In the passage it is limited and not all cases are included.

Christina: Because it is mentioned a few times in the text that women prefer social strategies to men.

Surprisingly perhaps, some students noticed the boosters yet still rejected the correct response:

Chris: It is the sentence C correspond with the original text.

KH: Are there any words in the sentence that would make you change your mind? Is the meaning the same in both?

Chris: Let's see. 'strongly suggest'. There is no such words in the text, but I think the two sentences mean the same. B 'clearly shows that women will use more...' mmm. This may be a hypothesis of the writer, but not Oxford's research. It is the writer of the article that says 'it is possible'. Yes, I think C.

Cindy: I chose C: 'It is possible that women prefer strategies which involve more social interaction than men'.

KH: Do you think this sentence 'strongly suggests' a conclusion?

Cindy: It's a possibility only, but not really strong. But I wouldn't choose B either.

KH: Did you notice 'clearly show' or 'possible'?

Cindy: No I don't think so. Not really. I paid my attention to topic words.

Meghan: It matches with option A. These words 'might be' and 'possible', they are not very sure about what they say. But I still think the option A is the best among the three.

So, at least one student chose to override the most appropriate response despite noticing the target words and knowing the meanings they generally convey. There are several possible reasons for this. One is that while respondents may have been aware of the semantic value of these items, the actual pragmatic import of the devices in academic writing may have been less clear. As I noted earlier, hedges and boosters are rarely given priority in second language curricula and may fail to attract attention when they are encountered in texts. A second possibility is that students simply focused on propositional information in making a decision, consciously overriding the epistemic significance of the target items. This is also plausible given the typical focus of many EAP courses on the expression of ideational meanings.

Students had even more trouble with the remaining two statements containing boosters (Q3 and Q12). These required subjects to recognise the terms *demonstrate* and *show/always* as conventional expressions of certainty used to draw inferences from data. Only one student referred to a target item in the interviews on these questions, and once again many focused on propositional content:

Amy (Q3): I'm not sure about 'conclusively show'. Is that the same as 'demonstrate'?

Chris (Q3): Because he hasn't state clearly whether it is effective or not, the students become more advanced, they focus more on the learning task.

John (Q3): 'Increased their use' but 'reduced their use' in original paragraph, isn't it?

Tony (Q12): 'more able students used more effective strategies', so it is C. B is also right but C is more of a conclusion, what the writer thinks overall.

Sandy (Q12): Yes, C: 'research indicates that more able students use more effective strategies'. That is what the question says.

Interestingly, Sandy not only confounds *indicates* with *clearly tells us*, but omits the modal *may* when reading back the text, missing the crucial information this conveys about the writer's doubt.

In sum, every student recognised and attended to the effect of at least one booster, although less than a third of the items were mentioned in the interviews. Noticing was more likely where the items encoded a strong degree of possibility and where there was a clear contrast in the epistemic conviction conveyed between the items in the text and those in the question.

Attention to Hedges

Hedges were far less prominent than the intensifiers to these subjects. Not only did three students fail to report noticing a hedge at all in their interviews, but often subjects mentioned a modifier but did not attend to it when selecting a response. Thus May, searching for a certainty statement on the age research in Q13, selects the tentative statement in option C, explaining that:

May: In the second last line, 'she believes that the differences in strategies she found could be due to the way that these individuals...'. Yes, it is a conclusion found from the research results. It's what we know from the studies. It is the best answer.

This apparent invisibility was evident even in cases where hedges occurred in relatively dense concentrations. In Q9, for example, estimations of the writer's certainty turn on a cluster of three hedges in two consecutive sentences: *assume*, *likely to* and *may*, which together suggest a distinct absence of commitment to the proposition. Only four students noticed the epistemic distinctions between the question and text statements, for example, Tony summed up his choice like this:

Tony: In the article it mentioned 'likely' but in the question it says 'clearly', so there is a difference here, so it is false. 'Likely' means it's possible that this might be the reason, while 'clearly' means we know for sure this is the reason.

Most subjects, however, either failed to mention the hedges, or ignored their influence on the meaning of the proposition:

May: I just get the general idea that it's not the most important influence.

Jessica: Actually, I just made a guess.

Christina: 'It may be more influential in strategy choice than language proficiency, age, or other factors.' So I think it's true.

Meghan: Here, 'it may be more influential in strategy choice'. It means motivation is more important.

As with many of the responses to boosters then, we find students tending to shift away from the qualified formulations indicated by the hedges. They often simply read the text statements while omitting the modifier, or they ascribed a

greater degree of conviction to the meaning of the device than it is typically intended to carry. In other words, students were likely to reject the implications of uncertainty carried by an item in favour of a more assured interpretation. This, for instance, is part of Anita's comment on her response to Q11:

Anita: The writer use 'we speculate that' which means it's a prediction, isn't it. And I think this will lead the writer to the conclusion that students with low motivation will make poor strategy choices. Yes, this is the right answer.

Amy was another subject who reduced the degree of uncertainty carried by a hedge, this time in answering Q14:

Amy: C is not correct because it says 'it is possible that'. I chose A because it states that 'these gender differences might be explained by differences in communication preference'. I think it is a fact found by the research result, which match the question.

In some cases then, students chose to dismiss the tentative expression of a statement in favour of a more certain conclusion. Occasionally this was because they genuinely did not know the meaning of a term, although this uncertainty related mainly to *hypothesise* (Q8), and *speculate* (Q11):

Ray (Q8): Actually I'm not sure about the meaning of 'hypothesize' if I know the meaning of this word, I may put false instead.

Anita (Q11): I think it is right, isn't it? Or maybe not. I don't know really the meaning of 'speculate', but I think it means it's just a theory.

KH (Q11): What about this word 'speculate'?

Sandy: I don't know this word, but it seems to mean 'shows that' or 'means that'.

Cases where subjects were not aware of the semantic weight of a particular item, however, were rare. More often students appeared to know the meaning and significance of a device when probed in the interview, but had simply failed to consider this when interpreting a statement:

John (Q6): Yes, here. It says 'These gender differences might be explained by ...' Oh I think I just ignored that. It's just a suggestion not a research finding.

Joan (8): 'We hypothesize however that...' Mmm. the statement in the question is a definite one. This is not really definite. Maybe I didn't pay attention to this word. And now I don't think it's a definite statement, because the word 'hypothesize', it means it's not yet found out that it's definitely true.

Chris (8): I think I'd change my answer. I overlooked the word 'hypothesize'. It means we assume something. It should be false because the word 'hypothesize' versus 'definitely' in the question.

Stephanie (Q8): I'm sorry I think it should be F because it says 'we hypothesize that...' I missed it.

Returning to a point I made earlier, even where students appeared to attend to a hedge, it was often the unequivocal terms found in the question, such as *defi-*

nitely or *clearly*, which were frequently mentioned as exerting a strong influence on their decisions. In Q4, for example, where ten of the fifteen students attended to the hedge, the contrast in writer certainty between *seemed to* in the text and *definitely* in the question appeared to trigger their recognition that the writer intended to weaken a categorical statement:

May: Line 3 here, 'who seemed to use more sophisticated language learning strategies'. Seemed to but not definitely.

Tony: He puts 'seem to use', so it's just a possible way. But not exactly sure. Not 'definitely'.

Christina: One says 'definitely' and one says 'seems to use'. So it's false.

In other words, there was a tendency to focus on those devices which conveyed greater certainty. This was a feature of many of the students' comments, even when they failed to notice the hedge:

Joan (Q4): It's not definite, and their career purpose had an effect on them.

Amy (Q4): I can't see anything definitely here only 'age is sometimes implied by course level'.

Megan (Q6): In the text 'gender differences might be'. Oh I made a mistake here. It should be false. In the text it says 'might be' which means only a possibility. I saw in the question it said 'clearly' so it should be false.

Cindy (Q8): 'After strategy training, men and women will show more strategy strengths.' Ah yes. I see. No, the word 'hypothesize', it means 'not exactly'... so I think may be I change the answer to False because the word 'definitely' matters. I didn't notice the word 'hypothesize', but I noticed 'definitely'.

Overall, then, the interview data suggests that these L2 students had considerable difficulty recovering the writer's assessment of possibilities from this academic text, generally increasing the degree of confidence in the claims that the statements were intended to convey. Evidence from the retrospective think aloud protocols suggests that while students were often aware of the semantic import of these devices, they systematically failed to attend to them when asked to evaluate assumptions of the truth value of statements in a comprehension exercise. Hedges, in other words, were often invisible to these students.

Learners' Understanding of Hedges and Boosters

The questionnaire data were intended to supplement the think aloud information on noticing to draw conclusions about respondents' awareness of the meaning of epistemic markers. It was possible that students noticed these devices in responding to the comprehension questions, but had been unaware of their effect on a proposition and therefore had failed to mention them in the interviews.

Students were asked to locate statements taken from the passage on a three-point scale of modality roughly corresponding to the traditional categories of *certainty*, *probability* and *possibility*. This kind of categorisation has its limitations, of course, as not everyone will agree with the classification of items in all cases. It is, however, compatible with schemes widely employed in reference grammars (e.g. Quirk *et al.*, 1972; Halliday, 1994; Leech & Svartvik, 1994), EFL

Table 4 Appropriate responses to questionnaire items (%)

<i>Item force (question numbers)</i>	<i>Total</i>	<i>First years</i>	<i>Third years</i>
Certainty (2, 6, 8, 12, 15)	72	77	69
Probability/strong possibility (1, 3, 4, 5, 9, 10)	48	45	50
Possibility/uncertainty (7, 11, 13, 14)	32	18	46
Averages	52	47	52

coursebooks (e.g. Jordan, 1990; Weissberg & Buker, 1990), and in the empirical analysis of various written and spoken corpora (e.g. Holmes, 1984). Table 4 shows that respondents generally had little difficulty in recognising the epistemic force of boosting items in the questionnaire, nor in distinguishing certainty from its absence.

All subjects marked at least half the certainty statements correctly and recognised the other forms as weakening the accompanying proposition to some extent. Only 4% were ‘don’t know’ answers. Respondents had greater difficulty in assigning an appropriate degree of certainty to hedges. What counts as a ‘possibly true’ or ‘probably true’ was not always clear to them, although third years scored rather better here. It should be noted however that these expressions are rarely determinate. Many language users have problems in unequivocally mapping a precise degree of conviction onto items of this kind (Hyland, 1996b). Perhaps it is not surprising that L2 speakers find these meanings difficult when linguists themselves often disagree on crucial matters (e.g. Coates, 1983: 177 vs Palmer, 1990: 57). But when we combine these two categories as having a weakening force, awareness increases to 80%.

Overall then, while boosters were generally identified correctly, subjects tended to overestimate the strength of statements, with 40% of responses marked as one or more category higher than my own classifications. Students seemed to have the most difficulties with statements 1, 7, 11, and 13, where *may*, *might*, *speculate*, and *possible* were overwhelmingly assigned greater assurance than their generally accepted status as possibility markers. More worryingly, about half the learners confused the hedging forms *hypothesize*, and *assume/likely* in statements 9 and 10, with boosters. In other words, the questionnaire data seems to underline the findings from the think aloud interviews that these students do not attend to those devices that add tentativeness and caution to academic statements. Moreover, it also appears that this failure to recover writers’ intentions to reduce their confidence in propositions may, at least in part, be due to a misapprehension of the *meaning* of these devices.

This possibility receives some support from the same questionnaire administered to 75 L2 speakers, peers of the subjects discussed in this paper. The patterns discussed above were largely reproduced in the larger sample, with students recognising the intensifying power of the boosters, but having the same difficulties in scaling down the commitment indicated by hedging items.

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Conclusions

This small study of lexical visibility, and the awareness of a group of university L2 students of hedges and boosters, supports Low's general findings for questionnaire items. The notion of lexical visibility is obviously a complex one, but it is clear that some words, and the epistemic meanings they convey, seem to be more visible than others. For these students reading an academic text in a second language, boosters actually appeared to alter the force of the statements they modified. None of the intensifiers *definitely*, *clearly show*, and *the fact that* were completely ignored by these subjects and all seemed to have a good idea of their strengthening effect when deciding on their force in the questionnaire statements. Only one subject failed to notice the impact of *definitely* and only three did not draw on *clearly* when discussing their choices in the comprehension task.

The situation with hedges is more complex, but there is strong evidence in this study that the efforts of academic writers to weaken their commitment and withhold certainty from their propositions may go unnoticed by L2 readers. These students consistently ignored hedges in the text, either by failing to notice the items themselves or by attributing an inappropriate degree of certainty to them. Thus the epistemic verbs *suggest* and *indicate* were not mentioned at all, the modals *may* and *might* tended to be accorded greater assurance than they usually receive, and the meanings of *speculate* and *hypothesize* appeared to be unknown to many learners. Only *seemed to* emerged as a relatively unmistakable signal of writer tentativeness, although this may have been because of a task effect which clearly contrasted it with *definite*.

The question arises, of course, whether the respondents' first language, Cantonese, may have contributed to the results, particularly as productive data suggests that Hong Kong students often tend to avoid hedges when writing in English (Hyland & Milton, 1997). Although these devices certainly exist in Cantonese, they are not the same as those they encounter in the written language. Written Chinese, especially academic and literary genres, is essentially based on the syntax and lexis of Putonghua, which is somewhat different from Cantonese, which means that the ability to read and understand texts for Hong Kongers can almost be compared to literacy in a foreign language (Li, 1999). The practice of reading therefore presents students with a particular challenge which may mean that non-propositional elements of texts receive less attention than they should.

More likely however is the possibility that these results are the effect of proficiency rather than first language, a view which receives support from a number of studies which suggest that competence in this area is extremely difficult to achieve in a foreign language (e.g. Bloor & Bloor, 1991; Clyne, 1987). A failure to mitigate statements appropriately has been noted as a feature of the work of students writing in English from a variety of language backgrounds, suggesting that the findings of this study are potentially relevant for students beyond Hong Kong.

Clearly these results need to be treated with a little caution. The limitations of the elicitation techniques that I have already discussed, together with the lack of generalisability of such a small study, mean that further, and larger scale, research is needed to confirm the kinds of lexical invisibility found here. However, the quantity and richness of these verbal reports, together with the

supporting evidence from the questionnaire data, strongly indicate that L2 learners may have considerable difficulty in recovering the intended strength of propositions in academic texts. With ever greater numbers of L2 students studying academic courses in English, it is imperative that these important markers of writer attitude are made more conspicuous to learners. A clear awareness of the pragmatic impact of hedges and boosters, and an ability to recognise them in texts, is crucial to the acquisition of a rhetorical competence in any discipline. The results of this study suggest that there are good reasons for giving them a greater priority in both our teaching and research.

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Appendix 1: Reading Text

Language learning strategies (Modified from an article by Rebecca Oxford)

Language learning strategies are behaviours or actions which learners use to make language learning more successful, self-directed, and enjoyable. Good language learners use more and better learning strategies than do poor language learners. Rubin (1975) suggests that the good language learner is a willing guesser; has a strong drive to communicate; is willing to make mistakes in order to learn or to communicate; focuses on form by looking for patterns; takes advantage of all practice

opportunities; and pays attention to meaning. In this paper we will look at four of the factors that influence learning strategy choice. These are (i) proficiency, (ii) age, (iii) gender, and (iv) motivation.

Proficiency

According to several researchers, it seems that as language students progress to higher course levels, they use different strategies. For instance, Politzer's (1983) research indicates that more able students may use more effective foreign language learning strategies than students with lower ability.

A study by McDonough and McNeerney clearly shows that more advanced language learners reduced their use of less useful strategies and employed strategies that more directly focused on the learning task at hand. In another investigation (Nyikos, 1987), university students appeared to increase their strategy use as the semester progressed. Tyacke and Mendelsohn's (1986) diary study showed that lower-level students always depended far more on their teacher and on grammar rules than did higher-level students. Bialystok (1981) found differences in strategy use as learners advanced in proficiency. The findings of Oxford and Nyikos (1989) conclusively support Bialystok's results, showing that foreign language students who had studied the new language for over four years used communication strategies more often than did less experienced students.

Age

Very few studies have explored the effect of age on choice of language learning strategies, although it is possible that age is sometimes implied by course level. Ehrman and Oxford (1989) studied adult language learners, who seemed to use more sophisticated language learning strategies than younger learners. However, the adults were learning languages for immediate career purposes, and so motivation might have been a greater factor in these results than age. Leaver (1990) directly examined the results of age as a factor in strategy choice by comparing the strategies used by adults and children learning foreign languages. She believes that the differences in strategies that she found could be due to the way that these individuals gained their language skills rather than age: the younger subjects having learnt in a natural way and the adults in a classroom setting.

Gender

Gender also appears to exert a strong influence on strategy choice. Politzer (1983) demonstrated that females used social learning strategies substantially more often than males. In a study of adult language learners, Ehrman and Oxford (1989) showed that females, compared with males, reported greater use of language learning strategies for communicating meaning. These gender differences might be explained by differences in communication preferences. It is possible that women prefer strategies which involve more social communication than men.

In short, the sex difference findings to date clearly show that in typical language learning situations women will use more learning strategies than men and use them more often. We hypothesize however that after strategy training, men and women will both show strategy strengths.

Motivation

Many researchers assume that the learner's level of motivation is likely to influence the choice of strategies. It may be more influential in strategy choice than language proficiency, age or other factors. Despite this, however, few studies have examined the role of motivation on strategy choice.

The fact that highly motivated learners are able to learn languages more rapidly and effectively suggests that they probably use strategies more often than less motivated learners (Oxford and Nyikos, 1989). This view receives some support from a study by McGroarty (1987) who found that university learners may use highly traditional and ineffective strategies, like using the dictionary to learn words, even when communication is encouraged. We speculate that the problem of poor strategy choice was low motivation for language learning.

Two other related studies provide insights about the effects of motivational orientation on learn-

ing strategies. Ehrman and Oxford (1989) found far more frequent use of authentic practice strategies among adults who were learning foreign languages for career reasons. Motivation here could have been situational, that is, related to the students' need to achieve good results in a university context. Similarly, Politzer and McGroarty (1985) report the possible importance of language learning goals in determining the student's choice of strategy. For example, the strategy of asking a teacher questions might be suitable for developing spoken communication skills, but might not be seen as relevant for developing skills in reading technical manuals.

There are obviously some important connections between these factors and choice of strategies, although further research is needed to make these links clearer.

Appendix 2: Focus questions

A. Mark these statements on the reading 'Language Learning Strategies' as either True or False.

Introduction

- (1) Successful language learners employ a range of strategies which include guessing meanings, taking risks, and attending to meaning. ____

Proficiency

- (2) Politzer found that more proficient students used more successful language learning strategies than lower ability students. ____
- (3) McDonough and McNerney concluded that more advanced learners increased their use of less effective strategies. ____

Age

- (4) Ehrman and Oxford show that adults used more sophisticated strategies than younger learners. ____
- (5) Ehrman and Oxford's results showed the influence of age on students' use of strategies. ____

Gender

- (6) The gender differences in Ehrman and Oxford's study reflect the fact that women prefer strategies which involve social communication than men. ____
- (7) Research cannot yet tell us whether men or women use more learning strategies. ____
- (8) Strategy training will reduce the differences in strategy uses between men and women. ____

Motivation

- (9) Motivation is the most important influence on a student's use of language learning strategies. ____
- (10) Motivated students are able to learn languages quicker than less motivated ones. ____
- (11) McGroarty's research leads the writer to the strong conclusion that students with low motivation will make poor strategy choices. ____

B. Choose the best answer from the choices given:

- (12) The proficiency research clearly tells us that
- Tas language students progress to higher course levels, they use different strategies.
 - lower-level students depended more on their teacher and on grammar rules.
 - More able students use more effective strategies than students with lower ability.
- (13) From the section on age we know for certain that
- While very few studies have examined the effect of age on choice of strategies, it is implied by course level.

- (b) The greater motivation of adults may influence results on age differences in strategy use.
 - (c) differences in strategies are due to the different ways that adults and children gained their language skills.
- (14) The research on gender differences in strategy use clearly shows that
- (a) Gender differences in strategy use are explained by differences in communication preferences.
 - (b) Women use more learning strategies than men and use them more often.
 - (c) Women prefer strategies which involve more social communication than men.
- (15) Which statement from the section on motivation is a definite finding of the research?
- (a) The learner's level of motivation influences the choice of strategies.
 - (b) Highly motivated learners use strategies more often than less motivated learners.
 - (c) Highly motivated learners are able to learn languages more rapidly and effectively.

Appendix 3: Questionnaire

Each of the following sentences comes from the 'Learner strategies' reading text. I am interested to find how certain you think the writer is in expressing each of these statements. Please mark each statement according to whether you think the writer wants to show she is 'completely certain' (C), 'fairly sure' (F), or 'uncertain' (U), about the results or claim in the sentence. You can just respond with 'I don't know' (D) if you cannot decide. Try to make a decision quickly and pass on to the next sentence without thinking too much about each one.

- (1) Research suggests that higher-level students may use more effective foreign language learning strategies than students with lower ability. ____
- (2) Tyacke and Mendelsohn's (1986) diary study showed that lower-level students always depended far more on their teacher and on grammar rules than higher-level students. ____
- (3) According to several researchers, it seems that language students use different strategies as they progress. ____
- (4) Lever believes that their differences in strategies could be due to the way that these individuals gained their language skills rather than age. ____
- (5) Gender appears to exert a strong influence on strategy choice. ____
- (6) Politzer (1983) demonstrated that females used social learning strategies substantially more often than males. ____
- (7) These gender differences might be explained by differences in communication preferences. ____
- (8) The findings clearly show that in typical language learning situations women will use more learning strategies than men. ____
- (9) We hypothesize however that after strategy training, men and women will both show strategy strengths. ____
- (10) Many researchers assume that the learner's level of motivation is likely to influence the choice of strategies. ____
- (11) We speculate that the problem was low motivation for language learning. ____
- (12) It is a fact that highly motivated learners can learn languages more rapidly and effectively. ____
- (13) Politzer and McGroarty (1985) report the possible importance of language learning goals. ____
- (14) Gender differences in strategy use might be explained by differences in communicative preferences. ____
- (15) There are obviously some important connections between these factors and choice of strategies which further research will make clearer. ____