What uh the Folks Who Did this Survey Found: Expert Attribution in Spoken Academic Lectures

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Abstract

Academic writing has been said to display a tension between originality and humility to the community (Myers 1990; Berkenkotter & Huckin 1995; Hyland 1999). One of the fundamental ways in which this tension plays out is in references to previous research, or 'attribution'. While recent research has emphasized the importance of attribution in academic writing—Hyland (1999), for example, found the average number of citations in research articles to be as high as 70 per 10,000 words—the role of attribution in *spoken* academic discourse is relatively uncharted territory.

In this study of attribution in academic speech, transcripts of 30 large lectures from the Michigan Corpus of Academic Spoken English (MICASE; Simpson et al. 1999) were analysed, totalling 250,000 words. References to expert sources in the academic domain were analysed, specifically third person attribution (including third person pronouns, proper names, and a selection of nouns), as in "um and, *Marx points out that* those are the tools that the proletariat are gonna use". The research questions were: To what degree do lecturers situate intertextually the knowledge and facts they are presenting? Do the disciplinary differences found in written citation practices also occur in speech? How variable are the formal realizations of attribution in speech?

Contrary to previous research findings (e.g. Biber 2006; Swales 2005), the study showed both that expert attribution is quite pervasive and that there is disciplinary variation in academic speech. The findings are compared to studies of attribution in academic writing (e.g. Hyland 1999; Tadros 1993), with the goal of contributing to current research on the commonalities that academic speech (lectures) exhibits with academic writing on one hand, and non-academic speech on the other.

1. Introduction

Investigations of spoken academic discourse are fewer and farther between than are equivalent studies of written academic discourse. This discrepancy has been increasingly noted (see e.g. Mauranen 2001:165). There are many reasons for this, one being that spoken data is considerably more difficult and expensive to prepare for research (record

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and transcribe) than written data. Despite this difficulty, however, relatively large corpora of academic speech now exist and are beginning to generate empirically-based research on academic spoken English.[1]

The present study investigates the use of attribution in spoken academic lectures. Attribution can be described as the act of referring to a source by ascribing some propositional material to it, as in (1):

> (1) um and, **Marx points out that** those are the tools that the proletariat are gonna use

The importance of attribution has been emphasised in recent research into academic writing, where it has been shown to be a frequent feature. For example, Hyland (1999) found the average number of attributions in research articles to be as high as 70 per article.

Attribution has been investigated in several different written genres, such as published research articles (Hyland 1999); academic textbooks (Tadros 1993); doctoral dissertations (Thompson 2005; Thompson & Tribble 2001); and various genres of pre-dissertation doctoral student writing (Ädel & Garretson 2006). In the spoken domain, however, a great deal of work remains to be done. Studies of attribution (often labelled 'reported speech') in non-academic settings exist (e.g. Myers (1999) on focus group discussions), but very few have been found based on academic settings (though see Biber 2006).

The research questions of the present study were: (a) To what degree do lecturers situate intertextually the knowledge and facts they are presenting?; (b) Do the disciplinary differences found in written citation practices also occur in speech?; and (c) How variable are the formal realizations of attribution in speech?

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[1] Two prominent examples are the Michigan Corpus of Academic Spoken English (MICASE; Simpson et al. 1999) and the corpus of British Academic Spoken English (BASE; developed at the Universities of Warwick and Reading; see http://www.coventry.ac.uk/researchnet/d/503).

2. Material and method

In order to answer these research questions, transcripts from 30 large lectures from the Michigan Corpus of Academic Spoken English (MICASE; Simpson et al. 1999) were analysed, representing 33 hours of recordings and totalling 255,000 words.[2] "Large" lectures were defined as those with at least 40 students in the audience. Almost all of the large lectures in the corpus are delivered in a traditional, monologic style. The lectures represent a range of different subdisciplines from all four main academic divisions at the University of Michigan, listed in Table 1.[3]

The occurrences of other-reference were automatically retrieved and then manually coded. Three categories of references to discourse entities were included: (1) third person pronouns *he, she, they*, including possessive forms *his, her, their*; (2) proper nouns, which were captured by sifting through a part-of-speech-tagged word list based on the transcripts; and (3) a selection of nouns, such as *researcher*, biologist*, opponent*, people*.[4]

False starts, as in (2), were disregarded in the coding.

(2) and **when he said** when he talks about…

This was to avoid boosting the number of occurrences of attribution simply due to a phenomenon which occurs in speech but not in writing.

The object of study was delimited in two important ways. Firstly, only third person attribution, or *other-reference* (cf. Ädel & Garretson 2006), was considered. There are many instances in the material of lecturers referring to themselves, for example reminding students about what they said in a previous lecture, but this type of utterance fills a metadiscursive function rather than an attributive one (see Ädel 2006).

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[2] I had access to the transcript files themselves, but it is worth mentioning that MICASE is freely available for searching on the Internet at the following url: http://www.lsa.umich.edu/eli/micase/index.htm.

[3] For further information on the individual lectures, see Simpson-Vlach & Leicher (2006).

[4] The asterisk is a wildcard, i.e. it represents zero or more characters.

Table 1. The academic divisions and subdisciplines of the large lectures in MICASE

Academic division	**Large lectures in MICASE**
Biological sciences (BS)	Biology: Evolution, Biology: Ecology
	Biology I, II, III, IV
Interdisciplinary: BS & PS	Chemistry I, II, III
Physical sciences & Engineering (PS)	Physics
	Geological Science
	Engineering
Social sciences (SS)	Communication I, II
	Sociology
	Anthropology I, II, III
	Psychology I, II
	Business Administration
	Economics
Humanities & Arts (HA)	Holocaust
	History of Art I, II
	English/Asian languages & literature I, II
	Classical Studies
	American Culture

Secondly, what was included was *expert* attribution, since this is the prototypical category used in academic discourse, whether written or spoken. Non-expert attribution does occur in some types of academic writing, for example in the form of representation of informant data in publications in sociology. In the spoken lectures investigated, relatively rich occurrences of non-expert other-reference were found. Among the discourse entities attributed to were historical figures (e.g. Augustus, Anne Frank); fictional characters; novelists and poets; artists; governments; representatives of societal organizations; cultural groups (e.g. the Masai, the Inuit); and the rhetorically useful group of 'people in general'.

However, examples of non-expert attribution were disregarded, since the main purpose was to compare citation practices in spoken versus written academic production. This means that the relevant discourse entities are, first of all, primarily from within the academic domain and, secondly, saying/doing things in the role of experts.

3. Frequency of expert attribution

The first research question concerns the degree to which expert attribution occurs in spoken lectures. This raises the question of what to expect on the basis of previous research. One finding to take into account is that attribution in university classroom discourse is mainly self-reflexive: Biber (2006:116) reports that "[r]eporting verbs with complement clauses often have the opposite function in spoken registers—reminding students of what was 'said' in previous class discussions. This use differs from the typical function of reporting verbs in the written academic registers, where they are used to provide historical perspectives or inform students about previous research studies". In other words, this is the metadiscursive function mentioned earlier, which does not serve the same purpose as attribution. Biber's empirical study is based on university classroom discourse, so it would be reasonable to expect the scarcity of other-reference also to hold true in the MICASE lectures.

Another research finding to take into account concerns attribution in academic *textbooks*. Tadros (1993) found attribution both to be quite rare and to refer most often not to an actual source, but to 'disciplines', 'schools of thought', or 'groups of researchers'.[5] The suggested reason for this was that "citations would weaken the authoritative voice of the textbook writer" (Tadros 1993:113). It is reasonable to assume similarities between textbooks and lectures in this respect, since they both represent 'expert to non-expert' communication. It could be the case that, like textbook authors, lecturers generally avoid citation in order not to 'weaken their authoritative voice'.

Thus, two different studies exist which suggest that we should expect a very low frequency of expert attribution in spoken lectures. However, when we look at the MICASE material, we find no empirical support for this hypothesis. Instead, the overall frequency shows that expert

[5] It must be mentioned, however, that Tadros' findings are based on a very small body of data (a total of three textbooks) and that the textbooks are all taken from one discipline (linguistics). Thus, the findings may not be representative of textbooks in general, whether in linguistics or in other disciplines.

attribution is quite pervasive in academic lectures. There are as many as 30 instances of expert other-reference on average per 10,000 words in the MICASE lectures. By comparison, while this average is considerably lower than the 70 occurrences per 10,000 words found in published research articles, it is closer to the 52 instances per 10,000 words found in graduate student writing (Ädel & Garretson 2006). Although expert attribution in spoken lectures is not as frequent as in academic writing, it is still sufficiently frequent to be considered an important feature of this genre.

Contrary to Tadros' (1993) findings based on textbooks, then, we can conclude that the overall result suggests that lecturers (at least those at the University of Michigan) actually make quite an effort to situate intertextually the knowledge and facts they present to their students, attributing content to other sources approximately half as often as they would be likely to do in writing.

4. Disciplinary differences in academic writing

The second research question concerned whether we should expect disciplinary differences to occur in academic speech. We know that, in academic writing, the use of attribution is likely to vary across disciplines or academic divisions. Hyland (1999), for example, has identified clear disciplinary differences in this respect. Put briefly, his findings were that writers in the humanities and social sciences (i) employ substantially more other-reference than scientists and engineers, and (ii) are more likely to use syntactically integral structures, as in (3), rather than non-integral ones, as in (4).[6]

(3) **Bourdieu argues that** …

(4) … **(Saettler, 1968)**.

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[6] The ellipses here represent propositions. The terms 'integral' and 'non-integral' are due to Swales (1990).

To comment on (ii) first, we can see that a fundamental difference exists between academic speech and academic writing in that non-integral citations, as in (4), do not occur in academic speech. This type of indexing is simply not done in online discourse, not even in prepared academic speech—although it is not technically impossible—presumably out of concern for the audience's processing load. Furthermore, as Swales (2005) has pointed out, full name and date citations are quite rare in academic speech. Only a few examples were found in the MICASE lectures, illustrated by example (5).

> (5) **Ballou in nineteen ninety-eight did** a concept analysis of autonomy and she defined it as…

As regards (i) above, it has been hypothesised that academic speech does not display many disciplinary differences: "Academic talk […] tends to blur disciplinary differences among the various sectors of the academy. […] It is written work that differentiates: Consider the different citational styles in the humanities and engineering" (Swales 2005). In other words, unlike the case in academic writing, we should expect no major frequency differences in the use of expert attribution across disciplines in academic speech.

Is there empirical support for this hypothesis in the MICASE material? Figure 1 presents a normalised account of the frequency of attribution across the four different divisions into which the MICASE material has been divided: the physical sciences and engineering, the humanities and arts, the biological sciences, and the social sciences.

Figure 1 shows that there are clear tendencies and considerable differences between academic divisions. The range is from 12 occurrences (physical sciences and engineering) to 46 occurrences (social sciences) per 10,000 words. In general, then, we have to conclude that the disciplinary differences found in written citation practices also occur in speech. Interestingly, however, although the pattern is similar to that found in academic writing, it is not identical. The social sciences and the physical sciences and engineering fields are where we would expect them to be, while the biological sciences seem unusually high and the humanities and arts seem unusually low.

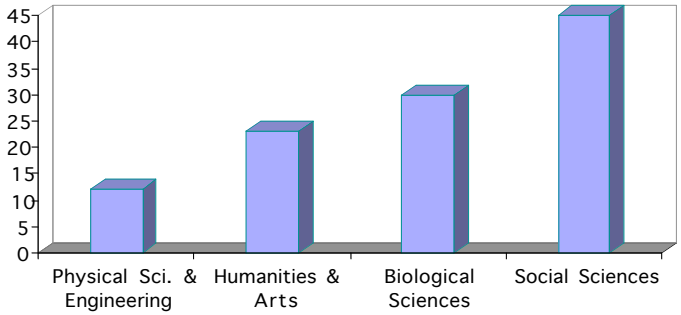

Figure 1. Expert attribution per 10,000 words across academic divisions

The unexpected results, however, may be explained by outliers being represented in the material. For example, some of the lectures representing the biological sciences have a specific historical focus, involving persons (e.g. Darwin) rather than abstract concepts, while the selection representing the humanities is atypical in that what is represented is literature and art history only. It is worth pointing out that there are clear differences in the approach to primary and secondary sources across disciplines. In literary studies and history, attribution to primary sources (non-expert opinions) predominate, for example referring to what is said by the characters in a specific literary text, while secondary sources (expert opinions) are rarely brought in.[7] This naturally has the consequence that the frequency of expert attribution is low in these disciplines. More detailed work on the lectures is needed in order to investigate the degree to which specific topics and how they are approached may co-occur with high or low frequencies of attribution. For example, it could be that lectures which take a more argumentative approach and deal with more debatable topics are likely to have higher frequencies of expert attribution, while lectures which take a more

[7] Remember that all frequencies included in this paper exclusively refer to expert attribution.

informative approach and deal with general truths are likely to have lower frequencies of expert attribution.[8]

If we zero in further and consider sub-disciplines in the MICASE data, will we also at this level of granularity find that academic lectures are similar to academic writing? Table 2 shows the results for expert attribution in the individual disciplines represented in the collection of large lectures. The ordering is based on frequency, starting with the highest number of occurrences and ending with the lowest number of occurrences. Multiple numbers indicate that there is more than one lecture in a particular sub-discipline. The shading for the academic divisions go from lighter grey (humanities, HA, and social sciences, SS) to darker grey (biological sciences, BS, to physical sciences, PS). Based on the findings for academic writing, we would expect lighter shades at the top of the table and darker shades towards the bottom.

First of all, it is interesting to note that it is possible to find frequencies of expert attribution similar to that of academic writing in some sub-disciplines (at the top of Table 2). Whether it is the case that lecturers in the humanities and social sciences employ more expert reference than scientists and engineers is difficult to tell, however. The results in the social sciences point in that direction, but less so in the humanities. Although the general trend is that lighter greys end up at the top of the table and darker greys at the bottom, it is difficult to draw conclusions based on this rather messy body of data. It should be noted that the samples are not necessarily representative of the sub-disciplines within which they fall; the MICASE lecture material was never intended to be representative at this level of granularity; rather, the corpus team accepted most lectures which were available in the compilation process. Furthermore, the samples from most sub-disciplines are very small. We simply need a larger and more representative body of material to be able to draw any firm conclusions about (sub-)disciplinary differences in the use of expert attribution in academic speech.

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[8] This is similar to what Artiga León (2008:178ff) suggests with respect to the use of stance markers in the MICASE lectures.

Table 2. Expert attribution per 10,000 words across sub-disciplines

Lectures from MICASE	**Academic division**	**Normalised frequency**
Communication I, II	SS	85, 81
Biology (Evolution), Biology (Ecology)	BS	79, 72
Sociology	SS	63
Holocaust	HA	57
Anthropology I, II, III	SS	84, 46, 29
Psychology I, II	SS	43, 20
History of Art I, II	HA	38, 13
Physics	PS	32
English/Asian languages & literature I, II	HA	23, 18, 6
Geological Science	PS	16
Business Administration	SS	15
Classical Studies	HA	14
American Culture	HA	12
Engineering	PS	5
Biology I, II, III, IV	BS	5, 4, 4, 3
Chemistry I, II, III	PS/BS	5, 0, 0
Economics	SS	1

There is also the possibility that other variables, for example relating to the audience, may play a role in the use of expert attribution in lectures. In the present data, all of the lectures except for one are targeted to an audience of undergraduate students. No clear trends could be detected with respect to the use of attribution to junior versus senior undergraduate students. Also contrary to what one might expect,[9] the one graduate-level lecture contains practically no instances of expert attribution. Therefore, the jury is still out on whether student level has an effect on expert attribution in lectures.

[9] As one of the reviewers of this paper put it, "One can imagine that lectures to freshmen present God's truth, while lectures to seniors problematise".

5. The realisation of expert attribution

The third research question concerns the variation in the formal realizations of attribution in speech. In exploring this question, the perspective will be comparative, taking into consideration how the results compare to (a) what we know about attribution in academic writing and (b) what we know about the general differences between spoken and written modes. First, a distinction will be made between verbal, nominal and prepositional types of attribution. Second, the top-ranking verbs used for the verbal types will be considered. Third, the syntactic variation in the verbal attribution types will be analysed. Finally, some observations will be made about the experts referred to, that is, the discourse entities to whom propositions are attributed.

5.1 Verbal, nominal and prepositional types of attribution

From the perspective of syntactic realisation, there are three main types of attribution (Ädel & Garretson 2006). The first type is the verbal one, involving a reporting verb, as in example (6).

(6) **Strate argues that**, the myth of masculinity that is what masculinity is supposed to be is embodied in the beer commercial

This is the unmarked type, and by far the most common. The second type is the nominal one, involving a noun such as *statement, claim*, etc., as in example (7).

(7) um and, **his criticism**, um, **that** um, those who who, do take on this undeserved identity um do so without knowing much, of uh Jewish history

This type is quite rare in the lecture material, where nominalizations of this type are largely avoided. The third type is the prepositional one, as in examples (8) and (9).

(8) women are disproportionately shown smiling **according to Goffman**

(9) and that's revolutionary **for Marx**

This type is also quite rare, occurring in approximately 3% of the attribution cases in the lecture material.

5.2 Top-ranking verbs

Since the verbal type of attribution unit predominates, it is interesting to consider further characteristics of such units, for example with respect to the distribution of lexical verbs. Table 3 lists the top-ranking verbs (with a cut-off point at a frequency of 9) and their raw frequencies in the verbal attribution units. The form "use (a term)" has to do with terminology, most often attributing a specific use of a term or a phrase to an expert discourse entity (e.g. *he uses it to mean*…), while the form "idea" is an abbreviation for expressions attributing concepts or ideas to an expert discourse entity (e.g. *and the idea that he introduces, in works like this um that…*).

Table 3. Raw frequencies of top-ranking verbs

Reporting verb	**N**
SAY	161
TALK	60
WRITE	39
ARGUE	36
THINK	32
CALL	27
LOOK AT	26
SEE	18
WANT	18
FIND	15
TELL	13
USE (A TERM)	12
"IDEA"	12
COME UP WITH	10
NOTICE	10

The most salient data point in Table 3 is the dominance of the lexeme SAY. SAY represents 12% of the reporting verbs. By comparison, the proportion of occurrences of SAY is 20% in the non-expert references, which suggests that this is a reporting verb that is considered appropriate especially for attributions to non-experts. On the other hand, if we look at written data in the form of news reports, the proportion of SAY is as high as 47% (Garretson & Ädel 2008; data from major newspapers in the US). By contrast, the proportion is considerably lower in published academic

writing. Judging from Biber et al's (1999:368) numbers, SAY occurs approximately one-third as often in academic prose as in conversation and news articles—and fiction, where it incidentally is equally common.

Table 3 points to another discrepancy between academic speech and writing, which is that the reporting verbs TALK and THINK are common in spoken academic lectures, but marginal in academic writing (see e.g. Biber et al. 1999:368; Ädel & Garretson 2006).[10] Other unusual verbs in academic writing are LOOK AT and COME UP WITH, which seem to be used primarily as markers of an informal lecturing style that is common in the MICASE material.

If one considers the overall set of reporting verbs, it becomes evident that reporting verbs in academic speech are less varied than in academic writing, which is what one would expect. Research has shown that one of the features of speech, particularly conversation, is its "restricted and repetitive repertoire" (Biber et al. 1999:1049).[11] However, the difference is not as great as that between academic writing and conversation, which is also to be expected, considering that the MICASE material represents semi-planned speech.

5.3 Syntactic variation

There is little syntactic variation in the lecture material's attribution units. The present and the simple past tenses clearly predominate. Furthermore, attribution units rarely occur as subordinate or embedded clauses, as in (10).

> (10) if it's social learning **as they argue**, it would help if they had had, some kind of follow-up measures to…

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[10] In a study of graduate student writing, Ädel & Garretson found that THINK was very infrequently used as a reporting verb, with the exception of papers in philosophy.

[11] Biber et al. (1999:1049-1050) specifically refer to the fact that in spoken conversation, a very small number of verbs tend to be "massively more common" than the other verbs, while "written registers tend to have a larger number of common verbs, which have less dramatically high frequencies".

The lack of subordination in speech in general has been noted, for example by McCarthy (1998). This is typically explained by the general principle that speech, requiring online processing, is simpler and less integrated than writing, enabling planning and revision.

Interestingly, a small number of verbs exhibit a somewhat more syntactically varied pattern. Specifically, the lexemes ARGUE, CALL and MEAN occur approximately one-third of the time in *wh*-clefts, as in (11).

> (11) **what they argue is that** the class that has_ that controls the means of material production...

Wh-clefts have been found to be most frequent in conversation. They are useful for signalling explicitly "what is taken as background and what is the main communicative point" (Biber et al. 1999:961), the main point being that made in the proposition at the end. The association between such constructions and conversation "probably [has] to do with the low information content that we frequently find in the *wh*-clause" (Biber et al. 1999:963), which can be used as a springboard by the speaker in starting an utterance. As such, it is not surprising that lecturers find *wh*-clefts useful, when they have a clear idea of what the main communicative point is (to be transferred to the students), but also need easily accessible ways of introducing that point.

Another observation concerning verbal patterns and lexical variation is that there is a tendency for 'discourse verbs' (e.g. *talk, argue*) to occur in the present, while 'cognitive verbs' (e.g. *think, believe*) and 'research action verbs' (e.g. *write, find [out]*) tend to occur in the simple past. Discourse verbs are commonly used in the citational present in the lecture material to dramatize argumentation or narration, thus giving the discourse an interactive flavour.

The present also tends to be used when referring to an assigned text, as illustrated in (12).

> (12) another um, another passage that's telling, on page eleven, he i- **he talks about** this, um, this status that…

In this case, the present is used in combination with a page reference with the intention of directing the audience's attention to materials being used in the classroom.

If we look more closely at the discourse verb data, we will see that direct reported speech is used relatively often: approximately 15% of the time. Interestingly, this is predominantly used with invented utterances, as in (13).

(13) **there were some people who said**, wait a second evolution doesn't work that way, it works the opposite way. it works by taking...

Some lecturers use direct speech as a way of dramatising the presentation and enlivening the lecture, which is similar to the way in which reported speech in conversation can be used to make stories vivid and involving (cf. Tannen 1989).[12] While quotes which are not authentic are typically considered taboo in academic writing, this is a licit use of false quotes—exactly because it is apparent that it is invented and, therefore, cannot mislead the audience. Indeed, some of the examples of direct speech include adverbs such as *essentially* and *basically*, as in (14), which help mark the rephrasing as involving 'poetic licence'.

(14) but basically **what Einstein said was** well if you're in an inertial frame of reference, anything you…

Note that the use of interjections and discourse markers, as in examples (13; *wait a second*) and (14; *well*) is more common in spoken attribution in general (McCarthy 1998). Here, they are used in the way they may be expected to occur in authentic direct speech.

5.4 Discourse entities

Another interesting question concerning the attribution data has to do with the forms with which the discourse entities are referred to. Generally, it is clear that the noun phrases in the MICASE material have

[12] Also see Myers (1999:347), who describes reported speech in general as carrying an "immediacy, an indexical connection to the original setting". It can be argued that many lecturers use reported speech as a strategy to present a narrative in a more engaging manner.

a relatively simple structure, with little pre- and postmodification, as has been shown to be true of spoken English in general (e.g. Leech 2000:703).

A particularly salient feature of the noun phrases used to refer to experts is their vagueness. General nouns used to represent a group of researchers, as in (15) and (16), are very common.

(15) um, and **a lot of folks were saying**, hey, old wine in new bottles you know, got rid of the old masters, here's the new ones.

(16) **some theorists have thought about** postmodernism, **as** a kind of radical break from modernism

This finding is in accordance with general patterns in speech, specifically the fact that speech tends to exhibit a great deal more vagueness and less precision than writing (e.g. Chafe 1986). It is also similar to Tadros' (1993) finding about the tendency of textbook authors to refer to groups of researchers or schools of thought, as mentioned above.

It has been said that the fact that academic writing is "concerned with generalizations, rather than the specific individuals who carry out an action" (Biber et al. 1999:938) is an important reason why passive constructions are common in this register. Presumably, this concern with generalisations also applies to academic speech, although we can note that, at least among examples of attribution, passive constructions are extremely rare in the spoken lectures. Instead, it seems that generalisations are primarily realised by nominal patterns.

Not only do the source noun phrases tend to be vague, but informal realisations are also relatively common, as in (17).

(17) and um, wh- **what uh the folks who did this survey found, was** that i- if they if you ask people to describe…

While *survey* is a specialised word that is typically found in EAP word lists, *folks* is definitely marked in this context. An informal style is common not just in nominal patterns, but also in the choice of reporting verb, as we saw in Table 2. This is in accordance with previous research on MICASE (Swales 2005), where the "matter-of-fact informality and casualness of research speech at Michigan" has been noted. Note that this observation applies to the corpus as a whole, while the current study is concerned with one of the most formal registers in the corpus.

A final observation about the discourse entities is that the data are highly gendered in that expert attribution involving *he* is 16 times more frequent than *she*-attribution. Thus, the overall pattern is that the experts tend to be male rather than female.

6. Conclusions

Contrary to previous findings (e.g. Biber 2006, Swales 2005), this study has shown both that expert attribution in academic lectures is quite pervasive and that disciplinary variation in the use of attribution occurs in academic speech. Based on the MICASE lectures, it can be claimed that attribution in academic lectures is similar to that in academic writing—even if it may not be as frequent on average.

It has been said about attribution in academic writing that it is a part of both constructing and communicating knowledge (Hyland 1999), which is done differently in different disciplinary communities. This seems to extend to spoken academic genres as well. However, the observation that the disciplinary differences found in written citation practices also seem to occur in speech needs to be tested by further research on representative and much larger samples of speech.

Concerning the variability of the formal realizations of attribution in academic speech, there is less variety of expression than in academic writing, but more than is typical of speech (conversation). Lectures, after all, involve more or less planned speech, which is given in a (relatively) formal register. We might say that the syntactic patterns are more like those of typical speech, while the lexical patterns are more like those of writing. In the attribution units studied, we do not find much evidence of the "repetitive use of a restricted lexicogrammatical repertoire" (Leech 2000:676) that has been found to be typical of conversation.

While this study has given preliminary answers to some questions, many more remain. One interesting question is whether spoken expert attribution is likely to co-occur with expressions of stance (see Bamford 2007 for an investigation of negative evaluations in academic lectures). On the basis of the current material, a preliminary answer is that the actual attribution units tend to be free of stance markers, so lecturers seem to ascribe propositions to experts 'objectively'. Of course, lecturers occasionally do evaluate sources, especially when making generalizations about groups of experts, as in *and so this is of great concern to*

conservation biologists and *what is very fascinating to population biologists, is that...* This type of summarising statement fills an important socialising function in attracting students' attention to the major issues in the field.

Another particularly interesting question for future research concerns the general functions of attribution. We know that attribution can serve a range of functions in writing (e.g. Swales & Feak 2004), but do these overlap with the functions served in spoken lectures? Common possible functions of attribution in lectures are likely to include the following: to place the topic in a historical context; to show that a topic is debated/debatable; to illustrate agency behind research; to transfer responsibility for what is said; to support a point of view; and to demonstrate familiarity with the field (Bavelas 1978). But—even if this turns out to be a relatively exhaustive list—it would be interesting to pose questions such as: What are the proportions of these functions in terms of frequency? Might they vary across disciplines? How do they compare in spoken and written academic genres? These are some of the interesting questions for future research to explore.

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