Gender and academic discourse: Global restrictions and local possibilities

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ABSTRACT

This article investigates the academic speech of humanities and natural science instructors and students in 32 lectures and interactional classes at a U.S. university. It examines how structural markers, questions, question tags, and turn-initial response tokens contribute to variations of style in response to academic division, context, gender, and communicative role in academic discourse. Data analysis couples qualitative discourse analytic methods with a quantitative sociolinguistic analysis. The quantitative analysis shows the factors of communicative role, academic discipline, and speech mode – not gender – to be the most influential in the use of the structures investigated. It is argued that the lack of significant results for gender arise from global discourse restrictions in academic speech. However, despite the global restrictions shown by quantitative analysis, qualitative analysis suggests that such restrictions can be overridden, especially in contexts of structural breaks and disruptions of information flow, and that features that contribute to more interactional and cooperative speech styles, frequently linked to females, can emerge. (Academic discourse, gender, communicative role, academic discipline, speech mode)

INTRODUCTION

Recent research on language and gender has moved away from global analyses treating women and men as homogeneous groups and has acknowledged the diversity of male and female speech styles in more localized investigations of gender (Henley 1995, Bucholtz 1996, Eckert 2000, Holmes & Marra 2004, Holmes & Schnurr 2006). The role of context and social forces on the individual has increased in importance along with the investigation of negotiations of identity undertaken by individuals in particular domains and in relation to particular social groups (Mills 2003:1). It is assumed that the salience of gender identity – and therefore its expression – varies depending on context and communicative event as well as with topic, communicative partner, group composition, and speaker goals (Meyerhoff 1996). Mills (2003:3) points out that, at the same time,

"institutional and contextual constraints determine the type and form of identity and linguistic routines which an individual considers possible within an interaction." However, as Swann (2002:48) argues, these local and contextual concerns of the analysis of gender effects have almost invalidated the concept of the social variable and, one could falsely assume, the usefulness of global analyses of gender.

This article attempts to respond to these arguments by linking "global" quantitative and "local" qualitative research methods. It investigates the institutional and contextual constraints that influence the availability and the use of linguistic forms which contribute to linguistic styles that can index gender. It aims to find out where, when, and why (or why not) such linguistic forms emerge in academic discourse. I argue that certain features that may contribute to linguistic styles that can index gender are partially constrained in academic discourse by context and role restrictions in academic speech. This will be investigated in respect to the claim that men prefer a more competitive speech style and women a more cooperative, facilitative style (Coates 1993) that focuses on affective functions and maintains and increases solidarity (Holmes 1998). The academic context constrains interaction and the surfacing of particular aspects of identity, because - like most institutional discourse - it is restricted by the need to reproduce institutional contexts and the power relations of social roles. In particular, it does this through the navigation of joint classroom activities via the medium of question and answer (Heritage 1988:35), and academic monologue. These restrictions influence the availability of linguistic structures that can contribute to differing styles to which males and females accommodate. However, this study also shows that at the local level – especially in contexts of structural breaks and disruptions of information flow – such restrictions can occasionally be overridden, and features that can contribute to more interactional and cooperative speech styles can emerge.

The investigation focuses on the speech of American instructors and students in two academic disciplinary divisions. The situational context, at least in terms of communicative roles, will remain relatively stable in this investigation by focusing on only two discourse genres: large monologic lectures – which tend to be held in what Goffman 1981 calls "fresh talk" – and interactional classes. This article examines the sociolinguistic distribution and the functions of structural markers, questions, question tags, and turn-initial response tokens. All of these structures have been linked to gender in previous research (Lakoff 1975, Swacker 1975, Dubois & Crouch 1975, Zimmermann & West 1975, Holmes 1986, Coates 1993). Although many of the earlier studies have been heavily criticized, an investigation of functions of these structures can nonetheless be useful because these features can contribute to different, contextually relevant communicative styles that relate to a core claim of gender research: that men prefer a more competitive speech style and women a more cooperative, facilitative style (Coates 1993).

GENDER EFFECTS IN ACADEMIC DISCOURSE

The data analysis is preceded by a brief discussion of gender and academic discourse. The article then progresses in three stages. First, I describe the form and functions of investigated structures, since previous research has found that a linguistic structure can have a variety of seemingly contradictory uses (Holmes 1984, 1986; Cameron, McAlinden, & O'Leary 1988; Tannen 1994). Second, I outline the research methods used in the quantitative part of the study and briefly consider observed quantitative differences in usage between the various functions of the items discussed, and then interpret these results in relation to gender, but also to academic division, communicative role, and context (lecture and interactional class format). If a positive correlation with gender can be found in the use of any of these structures, their use would not appear to be constrained by the academic context. Third, I use the quantitative findings as the basis for a micro-sociological look at discourse, because they can reveal where particular forms have social meaning. Qualitative analysis explores such meanings at the local level of discourse, where additional linguistic features might be uncovered that can be linked to gender.

It must be pointed out that this study cannot address all the issues raised in recent research. The quantitative part of this study is still macro-sociological and therefore relies on a certain degree of overgeneralization when compared to the diversity at the micro level. At the same time, divergences of smaller groups and individuals can be investigated only marginally in the qualitative analysis; however, this study nonetheless shows how quantitative findings can complement qualitative ones in the micro-sociological analysis.

GENDER AND ACADEMIC DISCOURSE

While early quantitative research attempted to link certain linguistic structures to gender, later research has had to qualify these claims and recognize the importance of communicative context, speech task, and communicative role in the use of these structures. This research also took into consideration that the same structure might be used for seemingly contradictory – for instance, powerful as well as powerless – purposes, so that structures need to be functionally differentiated within particular contexts (Tannen 1994). This research has demonstrated differences between male and female discourse on a more subfunctional level, as shown in the various functions of interruptions, backchanneling, silence, tag questions, and hedging devices (Östman 1981; Holmes 1986; Erman 1987, 1992; Romaine & Lange 1991; Tottie 1991; Coates 1993; Tannen 1994), but also as regards more general social behavior (Coates 1993, Eggins & Slade 1997, Tannen 2002), such as the accommodation to different styles mentioned above.

In this study, quantitative and qualitative analyses of academic discourse will be undertaken in order to uncover what linguistic features contribute to the styles under investigation here, how these features and styles may be constrained in academic discourse, and how they may relate to gender. In the following I out-

line some of the theoretical underpinnings of this study in order to explain how the analysis of language and gender in academic discourse will proceed.

The theoretical background for an analysis of feature contribution to contextually variable styles is provided by what Eckert 2005 calls "third wave variation studies." Such analyses investigate what particular linguistic structures contribute to particular linguistic styles, with particular social meanings, which are evoked by members of particular social groups in the stylistic construction of the social self. Similarly, Ochs 1992 stresses the fact that certain linguistic styles rarely index social categories directly; instead, they index stances, activities, or attitudes that are indirectly associated with a particular group of people. While certain features may contribute to a style that directly indexes attention to someone's needs and wants, or cooperation and facilitation, it may indirectly also index femininity because it may be associated with women. Cameron (1995:43) argues that "male" and "female" styles are not just markers of gender identity, but are produced as masculine and feminine, since different verbal practices are one aspect by which a community can define masculinity and femininity. Individuals can accommodate to these styles and produce themselves as gendered subjects, so that cooperative, supportive, and facilitative discourse is a way to do or indirectly index femininity, and disruptive and challenging discourse is a way to index masculinity indirectly.

It is a basic premise of this study that academic discourse comes with certain genre constraints, and that these constraints influence the use of functions of certain structures that may contribute to particular speech styles, which may in turn be linked to gender. It is therefore important to have a closer look at these constraints, which include the availability of particular communicative roles and the rights of instructor and student, communicative tasks in lecture and interactional classroom discourse, differing discourse rules, relatively restricted discourse patterns, and expectations in different academic contexts. These constraints result in exchange and speech-length restrictions and differing knowledge-building and teaching strategies in particular academic divisions. They also result in turn-type pre-allocation, different patterns of opportunity and power (Heritage 1988), and – in Goffman's (1981) terms – different participation frameworks with associated rights and obligations, and different footings.

Different academic speech genres constrain the use of features that contribute to gender-indexing styles in differing degrees by forcing the instructor in a lecture into a powerful, hierarchical, and monologic role, and by automatically putting the instructor in an interactional class into the role of the conversational facilitator. The large monologic lecture maintains a relatively stable context and power relation throughout, with only occasional changes of footing. When instructors are put at the top of a relatively rigid, hierarchical, non-dyadic structure, as instructors in lectures always are, their language will naturally reflect this hierarchy and give them less opportunity to express solidarity and coopera-

tion, but instead, the contextual set-up forces them to express more structural power in academic discourse.

In interactional classes, different students can construct and express different identities and opinions, but the general power set-up and participation framework tends to stay the same, even though the power set-up is markedly different from the one in lectures because the professor relies on the students' participation and can even transfer some structural power to the student: "Now it's your turn." Navigating the knowledge exchange is of major importance here, since ideally these academic contexts consist of question-and-answer exchanges that make communicative navigation necessary. When instructors are put in the position of the conversational facilitator in seminars and discussion sections, they will use more facilitative behavior than in a lecture. Thus, even assuming that women tend to accommodate more frequently to a more cooperative, facilitative, and interactional style and men to more conversationally competitive styles (as suggested by Coates 1993, for instance), academic genre restrictions and expectations force men and women to speak in a more similar fashion, and they are also more susceptible to linguistic variations of other kinds, such as academic discipline.

The constructivist approach to style and gender discussed above will guide the quantitative as well as the qualitative analysis. While quantitative studies are rarely undertaken using such an approach, this will nonetheless be attempted here, because it is not the aim of the quantitative analysis to detect direct links between gender and linguistic features, but rather to provide evidence for some of the constraints of features that have often been linked to feminine and masculine ways of speaking in Western cultures. Once some of these constraints have been uncovered in the quantitative analysis, the qualitative analysis will look at the local level and investigate how some of those features contribute to certain ways of speaking and to the construction of the social self.

LINGUISTIC STRUCTURES

For the quantitative analysis, structural markers, various functions of questions, question tags, and turn-initial response tokens have been chosen as the structures to be investigated. The functions investigated represent a link to claims of gendered speech styles relating to issues of cooperation, speech facilitation, and competitiveness. In the identification of actual lexical elements to consider, a qualitative analysis of the data resulted in the following structures that fulfill various functions in discourse: *okay*, *all right*, *right*, variable question tags, questions, *now*, *yes*, and *yeah*. However, it must be stressed at this point that the choice of functional variants is an important weakness of any quantitative study that involves variants of discourse markers which may not be fully semantically equivalent, whose occurrence usually cannot be predicted, and for

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which complementary distribution in a strong sense cannot be achieved because it is often impossible to determine all the separate variables at the level of discourse. These issues have received extensive discussion in previous literature which suggests ways to minimize this weakness rather than being able to eliminate it altogether (Lavandera 1978, Dines 1980, Milroy 1987).

While it is important to keep these weaknesses of quantitative analyses of discourse structures in mind, such analyses can nonetheless yield results worth interpreting, especially when combined with a thorough qualitative analysis that investigates the context of occurrence of particular types of lexical elements. Furthermore, function rather than surface form will be investigated in this study in order to determine potential differential distribution. All of the structures mentioned above were functionally differentiated in a thorough qualitative analysis before their use was quantified. Table 1 briefly summarizes the subfunctions and the associated lexical items identified in the qualitative analysis.

QUANTITATIVE ANALYSIS

Data and methods

The data for this project are drawn from a corpus of spoken academic English, MICASE (Simpson, Briggs, Ovens & Swales 2000), compiled at the University of Michigan.⁶ This corpus includes recordings of several different speech event types, of which two are investigated in this article: interactional classes and lectures.

The selected recordings for the quantitative analysis differ in four factors: academic division (humanities, natural sciences), academic contexts/speech modes (lecture, interactional class format), communicative roles (student, instructor), and sex (male, female). Sixteen hours of lectures and sixteen hours of interactional classes are investigated, with academic division and sex of instructor distributed evenly. The material includes 16 male and 16 female instructors in the humanities and the natural sciences, all of whom hold the Ph.D. (graduate student instructors were excluded). Furthermore, the speech of 181 undergraduate students of all levels was analyzed, with discussion contributions ranging from one sentence to more extensive speech sections. The material totals about 400,000 words, lectures of 6,000 to 11,000 words, and interactional classes of 8,000 to 25,000 words. All instructors are native speakers of American English and are between 31 and 50 years old. The class compositions are mixed. Female students and male students contribute to the seminar discussions and form a relatively homogeneous group from the point of view of social status and education. Classes with predominantly male or female students were deliberately excluded from this study, as the focus was on classroom discourse with mixed group composition.

In the humanities, only classes in history, literature, philosophy, cultural studies, art history, and anthropology have been considered in this investigation. In

the natural sciences, classes have been drawn from engineering, chemistry, biochemistry, biology, physics, and mathematics. The counting of structures in the quantitative analysis is based on words. To make comparisons between speakers possible, the structure counts are averaged out for every speaker based on a set number of words spoken. In the case of turn-initial response tokens, averages are based on turns because this study aims to find out whether, and if so, what kind of turn-initial response tokens are used during turn changes, and not how many occur per number of words spoken.

Because the distribution of the word ratios for the response variables (i.e., the linguistic structures) in the study is normal, multivariate ANOVA tests could be conducted for the statistical analysis. This procedure indicates results for main as well as interaction effects. In this investigation, statistically significant results are results with a p-value below .05; that is, there is a less than 5% probability that the result was due to chance. The following section briefly summarizes and discusses the results of the quantitative analysis. The analysis focuses on the discourse function and social and contextual factors of academic division, sex of speaker, communicative role, and academic context (lecture, interactional class format), and investigates the contexts and social roles that influence the use of the items discussed above. Owing to space constraints, presentation and discussion of results is selective and is limited to significant results only. Significant results are followed by parentheses that include the statistical p-value, followed by the average use of structures per a set number of words spoken, by the standard deviation, and finally by the number of tokens.

Gender and academic division in the lecture context

- There are no significant results for gender in the use of structural markers, question tags, questions, and turn-initial response tokens.
- Humanities instructors ask their students more frequently for their opinion (p = .048; .150 vs. .011 per 1000 words; S = .191 vs. .032; N = 13 vs. 1) and structural (p = .048; 1.254 vs. 2.516 per 1000 words; S = 1.148 vs. 1.106; N = 96 vs. 146) and progression check *okay* and *all right* (p = .022; .465 vs. 2.136 per 1000 words; S = .849 vs. 1.483; N = 45 vs. 119) are used more frequently in natural sciences lectures than in humanities lectures.

This is exactly what was expected in the context of the large lecture. Even if some women were more frequently to accommodate to facilitative and cooperative speech styles, there is much less room to express this communicative behavior verbally in the mostly monologic lecture context than in the interactional class format. While the items under investigation do not correlate with gender, structural and progression checks (*okay/all right*) as well as the lack of opinion questions do contribute to a particular communicative style used by natural sciences instructors.

TABLE 1. Discourse structures.

Items investigated in current data set	Function	Example (S1 = instructor; S2-10 = students)
1. Structural markers (Okay, all right, right, now)	Mark information stage transitions to express discourse and conversational structure. This includes general thematic shifts as well as switches from monologic to interactional mode.	S1:don't be worried it almost never falls. I've been told that. OKAY hormonal signals, how does a hormone work? It is produced by very specialized, cells (Simpson et al. 2000:LEL175SU098)
2. Question tags		
2.1 Progression checks (<i>Okay</i> ?, <i>all right</i> ?, <i>right</i> ?, and variable question tags)	Progression checks check on the listeners' understanding of a previous proposition or section, not primarily to elicit questions but to elicit backchanneling or to point up the end of a section or important information. Usually no speaker switch occurs.	S1:this is probably the most important one in distinguishing liver atrophy and muscle atrophy. OKAY? huge glycogen stores, what else is the liver involved in? (Simpson et al. 2000:LEL175SU098)
2.2 Modal question tags (<i>Right?</i> and variable question tags)	Request information or confirmation. They are usually followed by speaker switch.	S10: meiosis is, haploid. RIGHT? 〈LAUGH〉 (xx) S1: anyone wanna help her out? meiosis has to start out diploid why? (Simpson et al. 2000:DIS175JU081)
2.3 Facilitative question tags (<i>Right?</i> and variable question tags)	Are a turn offer to another speaker. According to Cameron et al. (1988:82), they indicate "a positive interest in or solidarity with the addressee, and offer her or him a way into the discourse, signaling in effect, ok, your turn now."	S2: I hope it's nice out. S3: I know you can't tell in here CAN YOU? S2: I know it is the weirdest thing (Simpson et al. 2000:SEM300MU100)
2.4 Common ground question tags ⁸ (<i>Right?</i> and variable question tags)	Create common ground and appeal to solidarity. They are similar to facilitative question tags; however, they do not give up the turn. The speaker is merely making a statement of which it can be assumed that	S1:exam Friday ten to twelve your last exam. that's cause for celebration alone ISN'T IT? and you might think that's why the bagels are in here today, but they're not. (Simpson et al. 2000: LEL175SU098)

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3. Questions⁹

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- 3.1 Factual questions
- 3.2 Opinion questions
- 3.3 Unrestricted questions
- 3.4 Rhetorical-structural questions 10
- 4. Turn-initial response tokens (okay, yeah, right, all right)

Three categories are distinguished:

- 1. Token + text
- 2. Token + contrasting view introduced by but, well, etc.
- 3. Token + link by adding information with so, and, etc.

both parties know what the speaker is talking about.

Questions that ask for specific factual information.

Questions that ask for opinions. Questions that ask for unspecific information.

Questions that serve rhetorical-structural purposes. The most important contextual clue is that the speaker continues speaking right away.

Turn-initial (i.e. non-free standing) response tokens signal or construct continuity between the speaker's turn and the previous turn of another speaker. Tokens in this function attend to a prior turn while simultaneously setting up next-positioned matter. This particular function is one of the functions described by Beach (1993: 329) for the use of okay and is extended here to other similarly functioning tokens. Turninitial response tokens are either (1) followed by relevant text, they can be (2) combined with other elements that express contrasting views and be followed by text, or they are (3) combined with elements that create an additional link to a previous turn and initiate additional non-contrastive information.

What's the capital of Italy?

What did you think about this book? Any questions?

Now, why didn't he arrest him? He couldn't because there was absolutely no evidence, so he had to find another way.

S6: ... I just have meiosis two. S1: MKAY. is there anybody, disagree? wants to admit it? no? (Simpson et al. 2000:DIS175JU081) The variation by academic discipline arises from divisional differences in the kind of information that is presented (natural sciences instructors can rely less on general and commonly shared knowledge, present more factual and specialized knowledge, and discuss fewer opinions and beliefs), but also from differences in how information is presented (e.g., the use of more exercises, experiments, board work, and complex visuals in the natural sciences). These differences require instructors in the humanities to use more opinion questions and instructors in the natural sciences to use more structural markers and progression checks to make sure students follow the lecture, to lessen the information load, and to signal the occurrence of more frequent intermediate steps in knowledge development. Since academic division has also been identified as a major factor in the use of other structures such as filled pauses (Schachter, Christenfeld, Ravina & Bilous 1991) and hedges (Poos & Simpson 2002), it would seem that differences in discipline should be an important criterion in any research into academic speech.

Communicative role in interactional classes

• Instructors use more rhetorical-structural questions (p = .000; .009 vs. .000 per 10 words; S = .008 vs. .004; N = 159 vs. 8), structural markers (p = .000; .049 vs. .004 per 10 words; S = .032 vs. .002; N = 591 vs. 18), progression checks (p = .000; .035 vs. .000 per 10 words; S = .046 vs. .000; N = 437 vs. 1), and common ground question tags (p = .000; .002 vs. .000 per 10 words; S = .000 vs. .000; N = 17 vs. 0) than students.

Apart from apparent divisional constraints, the roles that participants occupy in the academic context also constrain the speech functions they have access to when interacting with specific others, as they perform different communicative tasks in the classroom. Student turns are usually so short that structural devices and checking on the hearers' progression is not necessary. These constraints of communicative roles will naturally influence speech styles that may index gender, since not all structures are available to contribute to such styles in the communicative roles discussed.

Gender and academic division in interactional classes

- There are no significant results for gender in the use of structural markers, question tags, and questions among students or instructors.
- There are no statistically significant interaction effects between gender and other factors.
- Turn-initial response tokens directly followed by other speech (p = .049; .144 vs. .299 per turn; S = .093 vs. .217; N = 68 vs. 207) and turn-initial response tokens followed by elements adding information (p = .027; .014 vs. .059 per turn; S = .035 vs. .040; N = 5 vs. 31) are used by female in-

structors in both academic divisions significantly more often than by male instructors.

- There are no gender correlations in the use of turn-initial response tokens among students. However, natural sciences students use the lowest number of turn-initial response tokens which is statistically significant for simple turn-initial response tokens (p = .000; .091 vs. .019 per turn; S = .127 vs. .049; N = 149 vs. 17).
- Statistically significant results are found among instructors for the greater use of *now* as a structural marker in the natural sciences (p = .000; .535 vs. 1.813 per 1000 words; S = .451 vs. .495; N = 34 vs. 146), which reflects similar results for structural markers in the lecture context.
- Per number of words spoken, students in the natural sciences ask about twice as many factual questions as students in the humanities do (p = .005; .109 vs. .213 per 10 words; S = .258 vs. .224; N = 170 vs. 140), they also use modal tags more frequently (p = .021; .005 vs. .022 per 10 words; S = .027 vs. .064; N = 8 vs. 17) which is evidence for a more interrogative style among natural sciences students. Rhetorical-structural questions used by students in this data set all occur in the humanities (p = .043; .001 vs. .000 per 10 words; S = .005 vs. .000; N = 8 vs. 0).

In conclusion, communicative role, interactional mode, and academic division are the most important factors in influencing the use of structures under investigation. Only in the use of one structural type does gender seem to play a role in this quantitative data analysis. The higher use of turn-initial response tokens by female instructors in interactional classes can be interpreted as a more partner-oriented, affiliative, and cooperative discourse strategy. No gender difference seems to exist in the use of response tokens that feature contrast. Differences in their usage could have been interpreted as competitive or aggressive behavior, which is frequently ascribed to males (e.g., Coates 1993, Tannen 2002). However, their non-differential use suggests that in regard to turn-initial response tokens, gender differences in academic discourse are more pronounced in the absence of conversational work (i.e., lesser use of response tokens) on the part of males, rather than in more competitive and contrastive discourse. The lack of any gender correlations for these structures among students could be due to academic division playing an important part in their use among students and the generally much lower occurrence of response tokens among students.

Discussion of quantitative results

It is argued here that the reason for the absence of strong gender effects is that academic discourse restricts the use of particular structures through constraints of academic division, speech mode, and communicative role, because the use of particular structures reflects and contributes to particular speech styles in the

academic divisions and communicative roles. Among the structures investigated – structural markers, question tags, questions, and turn-initial response tokens – the most notable gender results could be found for turn-initial response tokens, a feature that does not seem particularly restricted in this context and that (possibly in combination with other structures not discussed here) can contribute to a facilitative, cooperative style, which may in turn be evoked more often by females than by males.

What structural markers, question tags, and questions have in common is that they are much more subject to the discourse restrictions of academic speech. Turn-initial response tokens, on the other hand, are dependent only on interactional discourse, not on communicative role nor discipline (for instructors). These relatively unrestricted, freely variable, and optional structures, which can appear at the beginning of almost every turn, of all speakers, in many contexts, and relatively independent of the content of the message, are therefore ideal candidates to contribute to different speech styles, permitting a social group to accommodate to such speech styles in different ways. The communicative restrictions for structural markers, questions, and question tags in academic discourse are discussed in a brief overview below.

The connection between structural markers and gender is a complex one, as it is linked (i) to turn length, because long turns are a necessary precondition for structural markers to occur, which in turn is linked to (ii) restrictions of academic speech, which – owing to the time-restricted nature of academic activity types – results in about the same amount of speech for male and female instructors. As for students, it is frequently the instructor who decides who gets the next turn and how long the person gets to speak, so student turns are not allowed to be long enough to introduce structural markers. A word count revealed that male students do not speak more than females. However, when they do speak, on average their turns tend to be slightly longer, but not long enough to influence the use of structural markers. Thus, restrictions of turn length and speaker selection influence the use of structural markers, which might or might not result in gender differences, depending on what exactly these restrictions are in a particular classroom and to what degree they are enforced.

Concerning question tags, an examination of the frequency counts can illuminate the lack of convincing gender differences. Cameron et al. (1988:89), based on a study by Holmes 1984, found that in unequal conversational encounters the less powerful conversational partner uses more modal question tags; males, however, use more than females when in a less powerful position. The less powerful conversational partner does not use facilitative question tags, but the powerful party does; powerful women tend to use more than powerful males. However, compared to these studies, facilitative and modal question tags – the two kinds of question tags that have been at the center of previous gender studies on these structures – simply do not occur frequently enough in academic discourse to contribute to speech styles the sexes might accommodate to in different ways

(students use 25 modal and 7 facilitative question tags; instructors use only 9 modal but 18 facilitative question tags). Facilitative and modal question tags are rare, because questions are a much more efficient and accepted way to achieve turn change and move forward in a class discussion (replacing facilitative question tags) or to have a question answered or confirmed (replacing modal question tag). Thus, since the question tag that women supposedly use more frequently is rare in academic discourse, and the also infrequently occurring modal tag, which males are supposed to use more often, varies primarily by discipline – because it is a useful resource for an interrogative natural sciences style used by students of both sexes – no convincing gender differences can be seen.

Finally, the most frequent question tag in academic discourse is the progression check, and here too, the major divide is a disciplinary divide, necessitated by different teaching styles and knowledge-building strategies. Furthermore, sufficient speech length is a necessary precondition for progression tags to occur in the first place, a condition heavily restricted by communicative roles in academic discourse and turn control by the instructor. Progression check and common-ground tags are not used by students and again cannot contribute to styles that can index gender among students. Although they are used by instructors, they do not seem to contribute to such speech styles either, since they are first used differently in the two academic divisions, but second and more importantly, they are a very useful device for good teaching in general.

The same goes for questions. The use of questions is restricted in lectures, as lectures are dominated by monologic speech; however, questions are very much at the heart of the interactional classroom. The moves of initiation, response, and follow-up dominating classroom discourse have been widely described in the relevant literature (Sinclair & Coulthard 1975, McCarthy 1991). They are important for good teaching, and male and female instructors use them to the same extent. This link between what is frequently described as a "female" speech style and the speech style of teachers is also pointed out by Rosenblum 1986 and Grässel 1991, and this strongly underscores the particular linguistic situation in which academic instructors find themselves. Concerning students asking questions, this is potentially an area where gender differences could occur and have been reported in relation to males attempting to dominate the classroom through questions (Coates 1993). However, this is not the case in this data set, but it may constitute an area for further research.

Although, as I show above, the use of certain linguistic structures – and ultimately their ability to contribute to particular linguistic styles – is constrained in academic discourse, it would be wrong to assume that these constraints are in operation all the time. Occasionally, it is possible for individual speakers to work around them and negotiate a niche for the emergence of more cooperative and facilitative behavior than is usually the case. However, this would not appear in a quantitative analysis and will be investigated in the qualitative analysis below.

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QUALITATIVE ANALYSIS

This section shows that, at the local level, style shifts "from within" to more affiliative discourse are possible in spite of the external constraints shown in the quantitative analysis. In academic discourse, there are two environments that are particularly suited to shifts to cooperative, affiliative, and facilitative speech styles: (i) structural breaks and (ii) disruptions of information flow.

I shall discuss structural breaks first. The use of common ground question tags frequently coincides with speaker-internal style shifts which create and present a speaker's identity. These shifts occur at or create structural breaks as they are usually a diversion from the class topic or allow a different viewpoint towards the topic. In (1) an instructor gives a reminder about an upcoming final exam and states that this is *cause for celebration*. She marks this alignment with students by means of a question tag which not only expresses solidarity with, but also knowledge of student life, and she thereby discursively reconstructs her instructor role and identity by briefly foregrounding identity aspects of herself as a former student and an individual sympathetic to student life.

(1) S1: no it's just gonna make you know don't kill any more trees [S4: \(\text{LAUGH} \rangle \text{kay} \)] to make me an extra copy of that. think of all the plants and what they do for us, with this (bill) and everything. exam Friday ten to twelve your last exam. that's cause for celebration alone ISN'T IT? and you might think that's why the bagels are in here today, but they're not. they're in here because this is the lecture on, insulin and glucagon, (Simpson et al. 2000:LEL175SU098)

Similarly, in (2) and (3) two different male instructors create common ground and alignment with students by using question tags and including students in the instructors' change of perspective toward the lecture topic. In both these cases the instructors briefly foreground identity aspects of themselves as part of the audience, not only presenters of information but also consumers thereof, and they do this by assuming an affiliative stance toward the students that includes both students and instructors as the intended consumers of the subject matter.

- (2) S1: okay so here's some interesting C codes. uh trust me they work. let's compile them. $\langle P:09 \rangle$ now watch it'll work and i'll be embarrassed. it's supposed to break. $\langle P:05 \rangle$ fast ISN'T IT? [SU-M: (work)] okay here we go. and we get this funky error message which says... (LEL295JU035)
- (3) S1: okay. uh there we go um, thank you. now look at this, another image of Augustus here, um this image so-called Prima Porta (P:05) it's actually, well, the focus isn't great is it? Right. Okay because (you'll) see this sort of image of him he never changed his appearance by the way as we saw, (LEL215SU150)

Thus, although monologic lecture discourse to a certain degree constrains the emergence of cooperative, facilitative, and affiliative discourse, instructors none-theless choose to use such discourse and do relational work, especially at thematic lecture breaks when topic or organizational switches are happening. Since they are in the most powerful communicative role, this is easy for them to do, and – at least in the use of common ground question tags – male and female

instructors do not differ. As I show above, students never use common ground question tags, owing to restrictions related to communicative role. Yet that does not mean that they would never be able to work around these discourse restrictions in certain contexts.

Quantitative data suggest that gender differences in the linguistic structures investigated are more likely to be found in interactional discourse than in monologic discourse. In the following, I analyze a short excerpt of an interactional class, and I argue that besides structural breaks, disruptions of information flow are also well suited to the emergence of more cooperative, affiliative, and facilitative speech styles. I further argue that it is frequently females who make use of such contexts, as – previous research suggests – they accommodate to these styles more often than males do because these styles can also indirectly index femininity.

In (4) and (5), male students are marked with an M in front of their speaker number and female students with an F. The instructor (I) is a female professor. The title of the seminar is "Politics of Higher Education" (Simpson et al. 2000:SEM495SU111), and the students are for the most part senior undergraduates. The excerpt below stems from the middle of a class discussion on university politics. Various students in this class presented short responses to brief articles they had read at home. In the course of this excerpt, a male student (MS12) presents his response to the article he read. He provides information about the article, which is then followed by contributions from the instructor and two students. MS12's presentation is about two lawsuits against the university, one against "LSA" ([undergraduate] School of Literature, Sciences and the Arts) and the other one against the Law School. Both lawsuits were brought by Caucasian applicants who were rejected admission to the university; they claimed that they were rejected while "less qualified" minority applicants were accepted on grounds of affirmative action. Based on MS12's short presentation, the instructor poses a question about the repercussions of the suit against LSA on minority applications, which dominates the following discussion: Why would you have fewer minority Ph.D. students just because we have a suit, about undergraduates? The instructor's question is followed by a total of 14 turns, of which the last nine are given in (4).

(4)

- 1 FS7: um, maybe because they would consider it a more hostile environment?
- 2 FS2: right
- 3 I: RIGHT maybe, so maybe they wouldn't come to a place that lost a suit on that issue, what else? yeah?
- 4 MS12: it may the it may even deter a student from even delike, pursuing a undergraduate degree in whatever it is that you that you want to study (what points at you,) uh decide to enroll in a PhD program, so, let's say you want to do a PhD in political science well, if you don't, I don't know, if there's a lawsuit against not so much a lawsuit but, it may deter you from actually pursuing the undergrad degree in, in that political science before you can get to the PhD level so

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- 5 I: RIGHT this is the same point you got fewer undergraduates so you got fewer people who are prepared to go into the PhD program.
- 6 MS13: possibly um law schools would be, more apprehensive about taking the affirmative action route that they usually do in undergrad and actually start, refusing more minorities.
- 7 I: Law school YES we've got a suit against the law school if they lose they're gonna have to change the way they do, business. but what about, PhD programs in L-S-and-A or, graduate PhD programs in engineering or, business or
- 8 MS13: well I mean they would be more apprehensive about taking, I mean, the repercussions of taking somebody, over another person, and in fear of being, reprimanded or having a lawsuit against them.
- 9 I: it will chill out, basically what [MS13: yeah] they say it will have a chilling effect ...

This section is interesting for two reasons. First, it shows the high use of turn-initial response tokens by a female instructor, and second, it is a good example of uninterrupted information flow in classroom discourse. Both male and female students take part in the discussion. In turn 1, FS7 suggests an answer to the instructor's question *maybe* ... they would consider it a more hostile environment? Another female expresses agreement with this suggestion. Whereas the two females approach their answer in a very interactional style by expressing agreement and answering with a suggestive question, the males hedge a little at the beginning of their turns (possibly, it may), but they give fairly long answers. While both the use of suggestive questions by females and longer turns by males were not significant in the quantitative analysis, these strategies can nonetheless contribute to speech styles that can be used for the discursive construction of cooperative versus responsive identity aspects at the micro level – strategies that may also indirectly index femininity or masculinity.

The instructor follows up with a turn-initial response token and builds on the student's answer. It is the use of such turn-initial response tokens that, as quantitative analysis shows, are used more frequently by female instructors. The *right* at the beginning of turn 3 is optional. The instructor could just as well have linked up with *and* or *so* or no linking element at all. The section also shows that the instructor uses such response tokens quite frequently, here at the beginning of turn 5 and in turn 7 (*yes*). This presents a strategy that differs fundamentally between many male and female instructors because it contributes to a cooperative and affiliative speech style that can be used to discursively construct an identity as a cooperative and affiliative individual.

In turn 9, the instructor rephrases MS13's point *it will chill out, basically what [MS13: yeah]* and agreement is reached on the issue, since the student utters *yeah*. The instructor then goes on to specify her own opinion about this issue (not in the excerpt). While excerpt (4) is an example of undisturbed information flow, in (5) below information flow is disrupted and opens up an opportunity for everybody in the group to show cooperative and facilitative behavior.

Two more turns follow the instructor's turn; the first one is produced by MS12, who wants to get to the next point in his presentation. However, the instructor decides to stop the discussion here, and she interrupts MS12. *I: oh I think we'll stop [MS12: okay] (xx) right there. we we we've given you, enough uh, \(\lambda MS12 LAUGH \rangle \) of the business here. okay. MS12 expresses his acceptance of this decision with okay and mitigates the potential face threat with laughter. Although not shown in the excerpt, this is nonetheless an interesting event, as it shows very well how instructors can and do deal with students who, they feel, have talked enough. Thus, as discussed earlier, turns are kept shorter than some students would like them to be, so that it is not surprising that statistical analyses would not find significant results on the issue of turn length. This would also suggest that instructors in this data set tend to use the same measure of student turn length across the board regardless of student sex.*

The instructor then moves to the next topic and student in (5), introducing the new section with the structural marker *now*. FS4 self-selects, since it was clear that she would have to talk about the budget now: *FS4: that would be, um, my-self, I guess*. FS4 – a female student – uses a very different approach to present her response to an article on the financial situation of the university. She drives the discussion forward by asking factual questions and letting the instructor speak.

(5)

- 10 I: now I think we've talked about the two that were about last week. um, so, let's move onto the budget.
- 11 FS4: that would be, um, myself, I guess, to start. um, as far as the budget assignment goes before I say anything else I will say that this was like the most confusing thing I have ever done I believe. (LAUGH) um, I looked at a bunch of numbers drew some conclusions and then I posed some questions, that i'd, like us to discuss to get your input. um, when I was scrolling through the budget reading it the number that stuck out to me most was under office of the president. in which there was a nice, one million dollar plus sum, that said that it's used for maintenance of the president's house.
- 12 I: well it's not just his house but, yeah.
- 13 FS4: well the plant (position)
- 14 FS0: he has his own (chef)
- 15 I: right
- 16 FS4: the plant tapar- department of, you know it says um, transfer maintenance, budget for the president's house from the plant department.
- 17 I: (WRITING ON BOARD) so the total, was, [FS4: one million] according to your paper. and how much was the t-_ this is for the president's office and whow much was in the transfer?
- 18 FS4: I didn't I don't know.
- 19 I: you didn't tell me that, [FS7: (wait, where's that at?)] but it's there.
- 20 FS4: it is
- 21 I: it's a [FS4: but] lot smaller number.
- 22 FS2: two hundred thousand I believe
- 23 I: nah it's not even two hundred thousand.
- 24 FS7: where's that at again?
- 25 FS3: it is on page, two.
- 26 FS2: it's on page ten of the budget.
- 27 FS3: yeah.

28 FS7: okay. (P:04) 29 I: okay

In turn 11, FS4 makes it clear how she intends to approach the discussion: *I looked at a bunch of numbers drew some conclusions and then I posed some questions, that i'd, like us to discuss to get your input.* She obviously decides to approach this issue in an interactional way, by posing questions and not by presenting her findings as MS12 did before her.

In the course of the discussion, the information flow is disrupted because it is unclear how much transfer money is listed in the president's budget. This requires students to be active in navigating discourse in an interactional manner as opposed to a responsive manner. This change in footing alters the discourse frame and class interaction right away. Everyone's turn becomes shorter, the discussion turns more interactive, and much more facilitating and navigating takes place, all because the female student decided to ask questions, and, of course, because the instructor responds in kind and lets this change in class interaction happen by partially facilitating it, instead of just giving the information herself.

In turns 11 to 29 several speakers react to the first point FS4 makes in turn 11: the upkeep of the president's house. The instructor self-selects to correct and points out that it is not just the president's house, but decides to express agreement and acknowledges FS4's phrasing by saying *yeah*. FS4 then rephrases her utterance, and FSU-F jumps in, adding that the president has his own chef, information that is supposed to add to the cost breakdown negotiated in this sequence. The instructor expresses the correctness of this position by saying *right*. However, the negotiation of what is included in the dollar number is not yet finished, and in turn 16 FS4 tries to specify the information by using wording directly from the table. During this conversational exchange, corrective positions are marked with *well*, but additional information is unmarked.

In turn 17, the instructor attempts to systematize the information and starts writing on the board. She asks for the total, which FS4 claims to be a million, and the instructor asks for more specific information how much was in the transfer?, which FS4 cannot answer. The rest of this section is about determining the correct figure and navigating this joint activity in which ONLY FEMALES TAKE PART. The instructor says that FS4 did not tell her the correct number, but that it is there somewhere. FS7 jumps in the instructor's turn, asking where this information is. FS2 tries to come up with a number and suggests two hundred thousand. The instructor contradicts her with nah and adds that the number is not even that high. In turn 24, FS7 once again indicates her willingness to take part in the navigation of this activity by asking where's that at again? Another female student joins this navigating effort by providing the page number: FS3: it is on page, two, followed by yet another female suggesting yet another place to find

the information: FS2: it's on page ten of the budget. FS3 indicates agreement (yeah), and FS7 finally gets her question answered and indicates consent and approval of the information she received with okay. The instructor also indicates acceptance of the information, which is preceded by a pause during which she probably locates the information.

The problem of information flow that arises in the course of the discussion requires students and instructor to question particular utterances and to offer or request conversational help. Speech contexts like these – contexts in which an information problem has arisen, frequently labeled "negotiated interaction" or "negotiation of meaning" (Stubbs 1983, Gass & Varonis 1986, Boulima 1999) – allow a variety of communicative strategies to emerge. Such speech contexts make facilitative, cooperative, and interactional behavior necessary to reach a common communicative goal, as the most common initiation/response/follow-up strategy (Sinclair & Coulthard 1975) facilitated by the instructor does not seem to be working. These joint navigations of the business at hand require the interlocutors (only females in this case) to ask more questions, to backchannel, and to mark receipt of information with response tokens. They also have to acknowledge, agree, and consent on information more frequently. But not all participants will show such behavior. In the excerpt above some speakers, particularly females, develop their discourse roles by assuming different footings; they align differently to the other speakers present and discursively reconstruct their roles and identities by constructing themselves as affiliative, cooperative, facilitative individuals. Thus, one could argue that they accommodate to a speech style that has been described in the literature as one that indirectly indexes femininity. This is very much in contrast to what the males did in (4). They presented information and even had to be interrupted by the instructor – behavior that may indicate that they accommodate to a less affiliative and less cooperative speech style than do the females in the group, a style that may indirectly index masculinity. In contrast to the students, the instructor has to keep the discussion on track and facilitate turns. She marks receipt of previous information with response tokens, asks questions, and interrupts students to keep the discussion on track, which would suggest that the instructor accommodates to both these speech styles depending on context.

Thus, the qualitative findings support the claims made in the quantitative discussion that many females tend to accommodate more to interactional and cooperative norms, while many males tend not to make special efforts in this respect. No statistically significant evidence for a very competitive or even confrontational style on the part of the males could be found. Based on the results of the quantitative as well as qualitative analyses, the speech of males could only be characterized by a lesser use of facilitative and cooperative discourse. They do not stand out through competitive behavior, but by an absence or reduction of cooperative, affiliative, and facilitative efforts.

CONCLUSIONS

This article has attempted to find where, when, and why (or why not) linguistic styles emerge that can index gender in academic discourse. As to the "why," this investigation shows that academic discourse heavily restricts speech styles through discourse mode requirements of the lecture and the seminar, communicative rights of particular social roles and resulting turn-type pre-allocation, the low occurrence of some structures in certain contexts, and demands on knowledge building and smooth, and efficient classroom discourse. These restrict speech length and rights (influence the number of structural markers), give preference to questions to initiate speaker change (influence the use of facilitative and modal question tags), and lead to stylistic differences in different disciplines (e.g., with regards to the use of question tags), so that gender surfaces via cooperative or uncooperative styles only when other restrictions are at a minimum or are linked to less restricted structures, such as turn-initial response tokens.

However, quantitative data could not access small-scale situational contexts such as the one described in my qualitative analysis. While the qualitative analysis provided additional evidence for the functions and structures identified as relevant in the quantitative discussion, some other social acts and linguistic functions deserved to be discussed in the qualitative analysis, as they contribute to a cooperative and facilitative speech style which in the excerpts discussed above is used more frequently by females. Thus, the claim formulated at the end of the quantitative analysis concerning structural restrictions of communicative role, speech mode, and academic division in academic discourse has to be revised, and this gives us an idea of the "where" and "when" of the likely occurrence of linguistic styles that index gender. While it is the case that the use of structural markers, questions, and question tags is restricted in academic discourse, it seems that especially in contexts of (i) structural breaks and (ii) disruptions of information flow, which are then facilitated through negotiated interaction, such restrictions can be overridden and more features that contribute to more facilitative and cooperative speech styles can emerge.

Turn-initial response tokens, suggestive question-answers, clarification requests, backchanneling signals, and facilitative question tags are all structures that can contribute to social behavior that navigates and facilitates information flow within a general frame of willingness to achieve common ground. This kind of behavior is also used by males, but, as shown by quantitative and qualitative analyses, is accommodated to more frequently by females in this data set, as it indirectly indexes femininity in American society when used in particular contexts. This trend was supported by the quantitative analysis of turn-initial response tokens and the qualitative analysis of a variety of other features. Other linguistic elements not discussed here may also contribute to such linguistic styles in academia.

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In conclusion, although normative configurations are apparent in academic discourse, as indicated by the use of structures under investigation in different academic units and communicative roles, alternative frames can be created actively through alignment changes and the construction of alternative identities. However, quantitative analysis seems to suggest that students and instructors only rarely draw on the wider identity resources available to them. They seem to be influenced mainly by their institutional roles and discourse constraints that discourage them from drawing on wider identity aspects and confine them within narrower situational identities and roles.

Thus, this study indicates how recent approaches to gender can be harmonized with quantitative sociolinguistic research methods. It shows how qualitative and quantitative research can enrich each other, an approach that has shown impressive results in several other studies that have employed it (e.g., Holmes & Stubbe 1997, Eckert 2000). While cooperative, facilitative speech styles, seemingly evoked more frequently by females, appear more easily accessible through the qualitative analysis, the quantitative analysis nonetheless managed to point to some significant gender trends, while at the same time characterizing communicative restrictions with the findings on communicative role and academic discipline. Thus, gender effects in academic discourse hinge not only on global communicative restrictions, but also on local negotiations of those restrictions when context demands it.

NOTES

¹ In an article entitled "The lecture," Goffman (1981:171) recognizes three main modes of animating spoken words: memorization, reading aloud, and fresh talk. In fresh talk, text is (sometimes with the existence of notes) formulated from moment to moment, which gives the impression that it is responsive to the situation.

² Heisler 1996 investigated several functions of *okay* in Montreal French and found that the use of *okay* is on the rise and that young middle-class males with no university education use the discourse marker *okay* the most. Swacker 1975 found men using *okay* more frequently to mark topic changes. However, Levin & Gray 1983 did not find any proof for this gender tendency in their small study of *okay* in academic discourse.

³ While there is research that supports differences in questioning behavior (Fishman 1978, Tannen 1990) between men and women, Greenwood & Freed 1992 found that question behavior varies primarily by type of talk and not by gender.

⁴ Some early research speculated that women use more tag questions (Lakoff 1975), fewer tag questions (Dubois & Crouch 1975), or linked the use of question tags to "powerless language" (O'Barr & Atkins 1980). These early studies have been widely criticized, and it was recognized that finer functional differentiations had to be made in the study of question tags, as Holmes 1984 did. She found that women seemed to be using more tag questions of the facilitative kind, while men used more modal question tags, question tags that ask for information or confirmation. Some more recent research has found no gender difference at all in this feature (Calnan & Davidson 1998), or that the use of facilitative question tags is tied instead to powerful conversational roles and not so much to gender (Cameron et al. 1988). As an example, in socially unequal encounters, facilitative question tags are used more frequently by the more powerful conversational facilitator, whereas modal question tags are used less frequently by the conversational facilitator, but more often by the less powerful conversational party (Cameron et al. 1988).

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- ⁵ The term "response token" is used by Beach (1993:348), McCarthy 2002, and others. However, it is investigated only in its turn-initial position here. See the section on "linguistic structures" for more information.
 - ⁶ Complete data tables are available from the author.
- ⁷ Suggestive questions were removed from the presentation of structures because they were very rare in this data set.
- ⁸ Other types of question tags exist, such as softeners, peremptory, and aggressive tags (see Algeo 1988, Holmes 1982, Cameron et al. 1988). However, they occur less frequently in academic speech and are not discussed here.
- ⁹ Qualitative analysis revealed that not all question types are frequent enough to be quantified, and that questions are asked for different purposes in academic discourse than in casual conversation (see Mehan 1979 for a discussion of display questions). It was also owing to this functional specialization of question types in classroom discourse that Greenwood & Freed's (1992) useful categorization of question types in informal dyadic conversations had to be abandoned because, owing to the institutionalized character of question use, contextual cues were frequently not sufficient to differentiate even between such basic categories as questions asking for confirmation versus those asking for information. Thus, while the coding of questions attempted to apply finer categories, for the quantitative analysis only the four most frequent question categories are considered.

¹⁰ I am not referring to rhetorical questions as strategies to express solidarity or common ground. This type of rhetorical question is in fact quite rare in academic discourse. The type of rhetorical question this article investigates is of a structural type that frequently marks a new structural unit: a speaker will utter a rhetorical question and then answer it himself or herself. In contrast to the common ground rhetorical question, this is not a question type that is facilitative and interactional, but rather it leaves the turn very much in the hands of the current speaker.

¹¹ The MICASE data come with detailed transcriptions (Simpson et al. 2000). Since they may function communicatively, pauses, interruptions, self-repair, and non-speech sounds such as laughs and coughs are routinely represented. Some of the most frequently occurring conventions are to mark short pauses (1–2 seconds) with a comma or a period (if intonation is falling), pauses of 2–3 seconds with an ellipsis (...), and pauses of 4 seconds or longer timed to the nearest second. Text items enclosed in single parentheses are in doubt or were unintelligible. The signs "and "," indicate falling and level intonation respectively. Question marks signal phrases that function pragmatically as questions. Overlap, laughter, and contextual events are all marked in angle brackets ().

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