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19 Oral discourse in scientific research

Abstract: This chapter discusses the role and characteristics of oral discourse in scientific research, with “scientific” understood in a broad sense, covering any discipline of research. After introducing corpora of oral academic discourse, genre-specific characteristics of PhD defences, research group meetings, colloquia, and conference presentations are discussed from a discursal point of view. In scientific research, oral discourse plays a fundamental role in the social construction of knowledge. Its analysis offers valuable insights into the sociology of scientific communities.

1 Introduction

Oral discourse plays a significant role in scientific research. It is the basic communicative means in face-to-face interactions of research communities, for example in laboratories and project meetings, for networking or in presenting and discussing research at workshops, seminars and conferences. Even in rather conventionalised genres, such as conference presentations, the speakers have more possibilities and freedom to express their personality, thoughts and stance (attitudes, feelings, values and so on) than in their written counterparts, such as research articles. Whereas the writing of papers is subject to processes of elimination (of all possible research motivations and findings, for example, cf. Knorr-Cetina 1991: 239–240), the analysis of oral discourse makes it possible, in principle, to follow scientific research from scratch (including all kinds of uncertainties, negative findings or power-related decisions in the process of knowledge construction). Technology-mediated oral communication between individuals in distant locations has been possible since the telephone was invented in the nineteenth century. Today, video conferences enable speakers located in different parts of the world to see each other in their own surroundings while interacting synchronously (possibly including the sharing of documents), thus virtually shrinking distances. However, such technology-mediated oral communication is somatically much more distanced than face-to-face interactions because not all of the traditional senses (hearing, sight, taste, smell, touch) are involved (see Scollon and Scollon 1995: 27). To date, research on all facets of oral discourse is generally still in its infancy and has been restricted to the analysis of transcribed recordings of face-to-face interaction.

Despite of the crucial importance of oral communication in science, it has only recently become a focus of LSP research. Mauraanen’s (2012: 71–72) statement that speaking has been overlooked in English for specific purposes and its subfield of

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English for academic purposes due to the main interest in written texts is also true for languages other than English. The reason for this neglect lies not only in the importance of written texts, such as scientific papers and text books, but it also has to do with the availability of spoken language material for research purposes. Whereas it has been quite easy to access, store and analyse written text, technology for recording and storing the ephemeral spoken word has only developed in the last decades. In addition, a detailed analysis of oral discourse is an extremely labour-intensive task because the recordings have first to be transcribed. Also permission to record spoken language is usually difficult to get and restrictions for using these recordings are often much more rigorous than those for printed texts. This is why there are only a few open-access databases of academic discourse available for research purposes, namely corpora for oral academic English. So far, research of oral academic discourse in languages other than English has been based on private data that is not accessible to other researchers. Nevertheless, research in this field is growing rapidly, and also corpora for languages other than English designed for open-access are under construction.

This chapter on *oral discourse in scientific research* covers oral practices of all disciplines. In English, “science” refers usually to the so-called hard sciences (natural sciences and medicine) which is why “academic discourse” is often preferred when analysing communicative practices in the so-called soft sciences (Suomela-Salmi and Dervin 2009: 3). On the other hand, “academic discourse” is a rather broad concept that may include discourse in both research and education, even in secondary education, as well as talk outside of the primary learning environments (including administrative office hours, cf. Limberg 2010). *Science* is hereafter understood in a broad sense, covering not only natural and physical sciences but also social sciences and the humanities. The focus on *scientific research* chosen here excludes studies of educational discourse albeit corpora for academic discourse (comprising also lectures, seminars or office hour consultations at universities, for example) will be briefly introduced below. Following this, research into four genres of oral discourse in scientific research will be discussed: studies on PhD defences, research group meetings, colloquia, and conference presentations, followed by some conclusions.

2 Corpora for oral academic discourse

In 2012, there were only two large open-access corpora for oral academic discourse: the American MICASE (Michigan Corpus of Academic Spoken English, Simpson et al. 2002) and the British BASE (The British Academic Spoken English). Another large but not freely accessible corpus also containing oral academic discourse was compiled by the TOEFL 2000 project: the T2K-SWAL Corpus (TOEFL 2000 Spoken and Written Academic Language) (Biber et al. 2004: 8). All these corpora aimed, above all, to develop the teaching and assessment of English for academic purposes. Consequently, they

contain speech events mainly of educational settings at the university and only fewer speech events of scientific research. The largest variety of different speech events are covered by the MICASE corpus but only three of them can be characterised as scientific research (public interdisciplinary or departmental colloquia, lab group and other meetings, and dissertation defences). The BASE plus corpus includes also conference presentations and staff interviews (BASE and BASE plus n. d.). In addition, a smaller John Swales Conference Corpus (JSCC), containing 23 transcripts of conference presentations and discussions, was made available to the public in 2008. This corpus is based on the conference in discourse analysis organised to celebrate the official retirement of Professor John Swales in 2006.

In 2013, three other large corpora containing oral academic events were made freely accessible for research purposes: ELFA, VOICE and GeWiss. ELFA and VOICE are both corpora for English as a Lingua Franca, and GeWiss is a multilingual corpus of oral academic discourse. ELFA (English as a Lingua Franca in Academic Settings) was compiled in Finland. In addition to educational event types it comprises also scientific research event types (conference presentations and discussions, PhD thesis defence presentations and discussions, as well as panel discussions) from several disciplinary domains (ELFA 2008). Also VOICE (Vienna-Oxford International Corpus of English, comprising recordings from educational, leisure, professional domains) contains some speech events from *research and science* communication (about 10% of the corpus). Since 2013, 26 speech events from the *professional research and science domain* have been available as transcripts, and three of them also as audio files as part of the VOICE 2.0 Online corpus. These speech events are conversations (in which people interact without a predefined purpose), interviews, panels, question-answer-sessions (in which members of an audience ask questions which are answered by specialist speakers) and one workshop discussion. (VOICE n. d.)

The first corpus of its kind comprising oral academic discourse in several languages is the GeWiss corpus (Gesprochene Wissenschaftssprache). It was launched in 2009 to collect speech events for academic German, English and Polish (Fandrych, Meißner and Slavcheva 2012 and 2014). In addition, spoken events in German as a vehicular language used by non-native speakers in Germany, Great Britain and Poland were collected. The GeWiss corpus contains oral presentations and examinations in these languages, with 25% of the data being conference presentations. The corpus has also been expanded to comprise more data from Bulgaria, Finland and Italy (GeWiss n. d.). In 2017, the GeWiss corpus will migrate to a host at the Institut für Deutsche Sprache (IDS n. d.).

The advantage of large electronic corpora is that they allow for generalisations of research results based on statistical analyses of quantitative data. However, such corpora can also be used for interpretative investigation of qualitative data as long as they allow accessing entire speech events (and not only frequency lists or key words in context, for example). All freely available corpora for oral academic discourse mentioned above contain only some genres of scientific research, and analysis related

to these corpora has often focused on educational genres or has not distinguished between genre-specific features of academic discourse (for example when focusing on frequencies in word use, such as *point* and *thing* as in Swales 2001 or on humour as in Lee 2006, both analysing all MICASE speech events). However, there is a vast amount of research on oral discourse in scientific research based on private (not open access) data.

3 Genres of oral discourse in scientific research

Oral discourse in scientific research can be classified into communicative events with more or less conventionalised ways of speaking. Such conventionalised ways of speaking are often labelled genres. According to Bazerman (1988: 62), a “genre is a social construct that regularizes communication, interaction, and relations.” Swales (1990: 58) defines a genre as “a class of communicative events, the members of which share some set of communicative purposes”, and these purposes “constitute the rationale for the genre”. Furthermore, Swales points out that the “exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience”, and that the genre names are “inherited and produced by discourse communities”. Nevertheless, similar patterns for lexicogrammatical and textual features “do not constitute obligatory or definitory criteria for genres”, as Mauranen (1993: 18) points out. Swales (2004: 61) relativises his earlier definition of genre in his book *Research Genres* because “such definitional depictions may not be true in all possible worlds and all possible times” and because they “can prevent us from seeing newly explored or newly emergent genres for what they really are”. He reflects on different possible genre definitions, drawing on a metaphorical motivation for genres such as “frames of social action”, “language standards”, “biological species” and so on (p. 68), and discusses, for example, multiple purposes of genres (p. 71), labelling from the perspectives of speakers, listeners, and analysts (p.74), and the dependence of genre definitions on methodologies (p. 72–73) as well as the interconnectedness of genres (chains, sets, networks) that are often in hierarchical relationship to each other (p. 77).

An important characteristic of any discourse in scientific research is that it is conducted in institutionalised contexts. According to Ehlich and Rehbein (1977: 37), institutional practice is „organized power, a societal machinery“ within which the members have usually certain roles and rights. According to Limberg and Geluykens (2007: 248), the participants in ‘scientific talk’ “have a comparable level of educational background, area of expertise, and (research) experience”. However, this generalisation is not quite true because the expertise and experience of professors, senior and junior researchers involved in scientific discourse may differ substantially, and also the rights attached to these roles are different. On the other hand, the character of the speech event (whether it is more or less formal, conventionalised or legally

bound) affects the roles and rights of the participants which can be expected to be the more equal the more informal the setting is, for example.

Due to different legal and conventionalised rules of various countries, institutions, disciplines or paradigms, the patterns of the genre (in terms of both the setting within a certain social practice and verbalised realisation) may vary in manifold ways even though the inherited genre names sound similar. For example, an undergraduate *examination* at a German university is often held orally whereas in Finland it is almost invariably written (Ylönen 1994: 97). Also undergraduate *seminars* were found to have quite different purposes and interconnections with other genres at Finnish and British universities (Mauranen 1994: 12–13). In oral scientific discourse, such differences were studied by comparing PhD defences and conference presentations of different communities (see chapters 3.1 and 3.4).

Until now, research on oral discourse in scientific research has been restricted to the analysis of a few genres of face-to-face interaction (see also Swales 2004). In the following, an overview of research results concerning PhD defences, research group meetings, colloquia, and conference presentations will be given.

3.1 PhD defences

PhD defences are oral examinations of dissertations. Different organisational patterns were found, for example, in US-American and Finnish *PhD defences* as studied by Riekkinen (2009: 29) who compared defences in the MICASE and ELFA corpora. She points out that in Finland there is usually only one examiner (known as an opponent) whereas in the Michigan corpus there is a whole panel of examiners. The rights to speak are consequently distributed in different ways in the more dialogic events in Finland and the generally polylogic events in the US.

Recski (2005: 7) points out that the ceremonial procedures, levels of formality and length of PhD defences may differ in different geographical contexts. For example, in Britain the defence is held in a small closed room with few participants (external and internal examiners, chair, supervisor, and candidate) whereas in Scandinavia the examination takes place in a big room and in presence of a larger audience (Swales 2004: 145–146). In Finland, for example, the ceremonial rituals are on a high level of formality that includes the prescription of both extralinguistic (dress code, order of entry and leaving the room, standing and sitting procedures) and linguistic features (fixed formulas for opening: *As the Custos appointed by the faculty I declare this public examination opened.* and closing the sessions *The public examination has been concluded.*). Also in other parts of the defence formulaic expressions must be used by the doctoral candidate, the opponent, and the custos at the University of Jyväskylä (n. d.). In the USA, on the other hand, the defence procedure seems to be much more relaxed and allows the speakers to use colloquial language, including humorous openings, as Swales (2004: 165) demonstrated for a social psychology defence:

Chair: okey-doke, uh well Kim Sook was gonna do another, very brief summary of what he's up to. Uh to bring it all up on our screens ...

Candidate: alright, um ... first of all i'd like to thank all of you, for agreeing to be on the committee, reading the draft, and coming to the defense, being with me at, my last moment of, graduate school.

Senior member 3: <LAUGH> such optimism

<LAUGH SS>

As a characteristic for defences Recki (2005: 21) found that hedging and uncertainty features are used by the “defendant” when confronted with face-threatening questions. But also the opponents use hedges as shown in Riekkinen’s (2009) study. She found that more hedges and inclusive expressions (such as *you know*) were used by those opponents who gave more direct feedback in which the candidate risked losing face (Riekkinen 2010: 85).

The typical structure of a PhD defence in the USA is according to Grimshaw, Feld, and Jenes (1994: 52–53) divided into four segments: the *opening segment*, the *defence proper*, the *in camera segment*, and the *closing segment*. The main difference with defences in Finland seems to be the absence of the so called *in camera segment* in Finland. In the USA, this is a short period in which the candidate is sent out of the room while the dissertation and the oral defence are evaluated. Another remarkable difference is that the dissertation in Finland is usually already printed at the time of the defence whereas in the USA this is not the case, but the candidate is often required to make revisions to his text before the degree is awarded, and the defence itself thus functions as a “collective editorial session” (Swales 2004: 169).

3.2 Research group meetings

The purpose of research group meetings (RGMs) is in generating group decisions. Swales (2004: 175) describes RGMs (also known as lab meetings) as more-or-less regularly occurring meetings in which “at least one faculty member, his or her immediate group of research students, and relevant postdoctoral fellows or visiting scholars” participate. According to Swales (2004: 175–176) RGMs may involve progress reports, discussions of readings, brainstorming sessions, technical issues, dry runs (i.e. conference presentation run throughs), opening statements at proposal or dissertation defences, “breaking news” about the field or job opportunities, and so on.

Knowledge construction in scientific research can perhaps be studied best by analysing research group meetings. Negotiations of the interpretation of research findings, for example, were investigated in a project called “Socialization of Scientific Discourse” and its follow-up project “The Collaborative Construction of Scientific Knowledge in a University Physics Laboratory”. Both were conducted in the 1990s by a research team at the University of California, Los Angeles (UCLA), under the direction of Elinor Ochs. Over a period of six months, this project collected participant field

observations, interviews with each regular group member, 60 hours of transcribed audio and video recordings of experimental laboratories, small group and weekly group meetings, overhead transparencies and printed materials which members brought to the meetings, e-mails sent between a member of the group and a colleague in Europe, archived research papers, published articles and dissertations. In addition, tutorial sessions explaining the concepts and principle behind the member's research were audiotaped, and background articles on relevant topics were consulted. (Ochs, Gonzales, Jacoby 1996: 332–333, Jacoby and Gonzales 1991: 154–155) Such a holistic approach (focusing on one and the same research group over a certain period and including all types of data from observation and recordings to accompanying written material and interviews of the group members) enables the analysis of knowledge construction from scratch in a relatively small local scientific discourse community.

Jacoby (1998) focused on conference presentation run throughs. Conference presentations in the field of physics are usually very short (ten minutes), and the RGMs functioned as rehearsals for the presentations and gave critical feedback for improving them. The tenor of the critical feedback was characterised as frank and insistent, and the structure of the discussions described as complaint – negotiation – agreement: first a particular problem of the presentation was addressed, next the status of the complaint and possible solutions were negotiated, and finally the remedy was agreed upon before the discussion moved on to the next topic (Jacoby 1998: 376).

How generating consensus in this context was influenced by *deadlines and time limits* was analysed by Ochs and Jacoby (1997). The activity was analysed by focusing on videotaped cycles of conference talk preparation in an RGM and related e-mail correspondence between a graduate student (first co-author and conference presenter), his former mentor from France (third co-author), and his dissertation chair (second co-author). The rehearsed presentation by the graduate student received conflicting criticism from these two co-authors. The reason for these different views on matters of rhetoric (“what to say, what to display visually, what to leave out, and in what order the information should be presented”, p. 479) obviously resulted from their professional orientation as theoretician (first co-author and present in the RGM) on the one hand and experimentalist (second co-author and commenting via e-mail from France) on the other. The student's rhetorical dilemma derived from the time constraints for his presentation: because of the 10-minute limit he could not include both co-authors' views into his talk. Time played also a crucial role in generating consensus. While two weeks before the conference the theoretician wanted to skip measurement details of the experiment (he used the pejorative “big deal” for sticking with the measurement facts only) and in contrast emphasise theoretical interpretations (p. 489), the experimentalists criticised his view as “forcing interpretation on the data” (p. 490). As the time of the conference became closer and decisions had to be made, the theoretician gave up his theoretical inference. In exchange, the experimentalists agreed to back away from foregrounding the measured data of the inductive research process, and agreed to the theorist's suggestion to begin the presentation with the “bombshell”

(p. 497) that their experiments offered a way to draw theoretical implications (concerning the dynamics of spin glasses). However, this consensus was momentary and negotiated for the purpose of the conference presentation, and the discussion about the relationship between measurements and theory continued thereafter.

That the roles of *experts and novices* may change between the members of a RGM was shown by Jacoby and Gonzales (1991) who investigated the recordings of this particular physics RGM by means of conversation analysis. Albeit a hierarchical status may provide an expert status on a macro-level, the micro-level analysis of the utterances in the interaction between the RGM members showed that the reconstruction of Self and Other is a continuous bidirectional process, and the constitution of a participant as expert may simultaneously lead to the constitution of another as less-expert. The RGM leader, for example, became either a micro-expert or a micro-novice at different moments of the unfolding interaction although being the uncontested macro-expert in social hierarchy. The authors emphasised that this bidirectionality of apprenticeship, learning and socialisation is, at the same time, also a source for innovative changes in communities of practice (Jacoby and Gonzales 1991: 174–175).

Another interesting finding was made by Ochs, Gonzales and Jacoby (1996) about involving *talk, gesture, and graphic representation* for building meaning in oral scientific discourse. In their talk, physicists may personalize inanimate objects or even construct blended identities composed of the animate researcher and the inanimate physical entity. “When I come down I’m in the domain state” is the title of a paper and a quotation from the physics RGM. In this sentence, the personal pronoun “I” represents both the physical entity and the scientist. This blended identity was used to describe a change in a specific magnetic system with decreasing temperature by putting oneself in the position of the entity. The authors conclude that such “schizoid” constructions are part of scientific problem-solving and express “empathy with entities” the scientists “are struggling to understand” (p. 348). This utterance (“When I come down ...”) is combined with gesturing along the line of a graph in the direction of sinking temperature. The authors interpret this as *inhabiting* and *wandering in* a cognitive and spatial domain (expressed by the graph) (p. 350). They conclude that “grammatical structures and their meanings are constituted through interlocutors’ larger activities, tool use, and gestural practices” (p. 359).

Swales (2004) compared the findings of the UCLA team with his own analyses of the MICASE corpus RGMs. Whereas the UCLA team analysed the same physics research group’s weekly meetings over a six month period, the MICASE recordings are separate RGM events from different disciplines (4.6 hours from the fields of immunology, artificial intelligence, physics, and nat. resources, Swales 2004: 178). The MICASE RGMs tackle different issues: discussions about upgrading the group’s equipment and on-going research results (physics), a discussion of a graduate student’s confusing findings (immunology), a dry run for a dissertation defence (artificial intelligence), and a master’s students joint project discussion (natural resources). Due to the diverse tasks performed in this small number of recordings, Swales stated

that he could not find any coherent generic character for RGMs. He assumes that both the “types of issues being addressed (drafting, rehearsing, interpreting data, etc.)” and “localized and inherited ways of proceeding within highly specific communities of practice” may be responsible for the communicative scenarios of different RGMs (Swales 2004: 188). RGMs also function to socialise graduate students to the local discursive practices of the discipline.

3.3 Colloquia

A colloquium (derived from Latin *colloqui* = “to confer”, and *loqui* = “to speak”) is defined as a large academic seminar (Cobuild 1995), an informal conference or group discussion (Webster’s 1996). As often in academic discourse, the label colloquium is used differently in different local academic communities. In Germany, for example, “Kolloquium” is often used to label an individual oral examination at the university (cf. Ylönen 2007). However, “Kolloquium” is used polysemously in German, and may also refer to a theses defence or a series of lectures, both with discussion open to faculty members and guests. In this paper, I refer to colloquium as an academic discussion and opportunity to exchange subject-specific ideas on a departmental, faculty or other unit forum, for example, which offers also students possibilities to learn the skills in and methodologies of research. Swales (2004: 189–190) considers the invited audience more important than the format of the event, and calls also the seminars investigated by Weissberg colloquia because here students had to “present their research before an open forum including all interested members of their academic departments and invited guests” (Weissberg 1993: 23). Tracy (1997: 3) describes a colloquium as an activity with “the university’s most privileged and noble mission: the advancing and testing of ideas, the production of truth and knowledge”. However, her study shifts attention to the participants’ behaviour as human beings and the social dimension of the scientific enterprise.

In her detailed analysis of a weekly organised colloquium at her communication department of a US university, Tracy describes the typical departmental colloquium format as consisting of a thirty to fifty-minute presentation followed by a twenty-five to forty-five-minute discussion with around 20 participants (Tracy 1997: 8). Her data consisted of full discussions of 10 occasions and selected excerpts from others and of 35 minute interviews with 10 regularly attending participants (six faculty members and four graduate students). In addition she used secondary material, mostly interviews recorded in a communication department at another US university. She characterises colloquia as sites of intellectual discussion and focuses especially on the dilemmas that individual participants and the group are facing. Her method is action-implicative discourse analysis drawing on triangulated data: her knowledge gained through participation, tape recorded interaction in the colloquia (discourse of the occasion), and tape recorded interviews with the participants (discourse about

the occasion), shifting her focus back and forth between interactive and interview discourse (p. 17).

Individual dilemmas were examined by Tracy (1997) at the levels of *identity, positioning and accounting, questioning and responding, and character challenges*. The most noticeable identity concern of presenters and discussants was to be seen as intellectually able (p. 24). In presenting and discussing research the participants also present their own thinking, which is an inherently risky activity (p. 39). Consequently, positioning self as an experienced researcher also functions to support intellectual competence, at the same time bearing the risk of failing to perform at that high level. Accounts and disclaimers on researcher choices (e. g. labelling data deficiencies) and communicative style (e. g. why a paper was read) were also seen as indicators of beliefs and ideals about intellectual competence (p. 48), even though the speakers took risks of being judged as unsystematic (in research design, p. 47) or presenting in an inappropriate fashion (in sacrificing interactional naturalness to coherent and linguistically elegant performance, p. 49). Questioning and responding seemed to be connected to three main concerns about intellectual identity: being adequately knowledgeable, being an original thinker, and being intellectually sophisticated (p. 52). Originality, for example, was challenged by a discussant asking why the presenter had reviewed literature mostly from the eighties continuing “What’s new in the way of these variables?” Interviews at the other university attested the presence and memorability of comparable originality challenges where an interviewee admitted to having liked such a “heated debate” containing the question “How’s this different from your dissertation twenty years ago?” (p. 57–58) Tracy concludes her analysis of individual dilemmas by stating that the character of a person is challenged when questions about ethical issues or the practicality of a proposal or about the material interests served by a set of ideas are raised (p. 75).

Group dilemmas were analysed by Tracy (1997) in terms of *equality and expertise, expressions of institutional rank and emotion, and intellectual community*. Tensions were found, for example, between the claim of the colloquium as an egalitarian forum and the hierarchical structure of the department with participants’ very different levels of authority and prestige carrying inequality. As one interviewee put it “Whenever it got to a battle of the floor it was almost always equals who would battle it out ...” (p. 81). Expressions of institutional rank included, for example, that students preferred to remain silent or asked information questions (“a nice little supportive question” – as one interviewee put it, p. 31) whereas faculty members chose to talk and asked also testing (“what are the pros and cons?” p. 97) and Socratic (“grilling”) questions (p. 99). Participants judged the academy’s views toward emotion and reason as being at odds (p. 111). Showing emotions, especially passion for ideas, was seen as desirable but also bearing risks of coming across as self-defensive or hostile. Tracy concludes that “It is not clear how one can display emotion about ideas but not about people” (p. 112). Also humour was seen as a challenge for intellectual discussion by carrying face-threatening risks (p. 124). Swales (2004: 195) summarises this by saying

that “a humorous and lighthearted event may undermine sustained engagement with the issues, while a deadly serious climate may lead to boredom and the dull parading of previously established viewpoints.”

In his analysis of the MICASE colloquia, Swales (2004: 196) could find only little evidence for dilemmas described by Tracy (1997). One reason may be that the MICASE data consist only of discourse of the occasion – as Swales put it: he could analyse this data only from a textual perspective. Swales (2004: 196) describes the MICASE colloquia as “operating on the kind of intellectual level that Tracy hopes to see.”

Tannen (2002) points to the agonistic nature of academic discourse (which she also calls ritualised adversativeness). In reference to Tracy (1997) she characterises the colloquium as a forum for student acculturation to “battle training” (p. 1662). She also points out the “commonplace among American academics that that many British, German, and French counterparts are more given to vitriolic attacks and sarcastic innuendo than are American-trained scholars” (p. 1655). On the other hand, Rowley-Jolivet (2002: 111) reports that the degree of aggressiveness and direct criticism was seen by her specialist informants in physics as gradually declining from North America over Europe to Japan. Finnish students, for their part, regarded the academic communicative culture in German-speaking countries as being more aggressive than that in Finland (Ylönen and Vainio 2010: 43). It would be interesting to study what such perceptions or beliefs of possible different cultural traditions in oral academic discourse might be based on. This requires an analysis of on-site data from other countries and in other languages than English.

3.4 Conference presentations

The main difference between a colloquium and a conference is that the latter is a broader forum for discussing research on various topics within one discipline. Researchers, often coming from different parts of the world, meet for at least two up to several days to present and discuss their research. Presentations are usually organised in parallel strands on specific sub-topics of the discipline. In addition, there are usually plenary or keynote speeches given by prestigious researchers with the reputation to be able to present a review of the up-to-date research in their field. Other forums at conferences may include panel discussions, poster sessions, workshops and symposia, for example. Opening and closing remarks – occasionally delivered by politicians or other non-scientists – function as bridges between research and everyday life by emphasising the societal impact of research in the area. Together with exhibitions, excursions, and other informal meetings at conference receptions or coffee and lunch breaks etc., conferences offer manifold possibilities for networking and personal and scientific exchange of ideas. In the following, analyses of conference presentations dealing with original research will be discussed with special focus on oral discourse practices.

Conferences offer a forum to present research results for the first time to a wider public. Even though speakers have more freedom to express their personality, thoughts, emotions or humour than in written original contributions, conference presentations are rather conventionalised events within a scheduled programme. Rituals include, for example, introducing the speaker, thanking for the introduction and contextualising the paper. Time constraints for the presenters and the right to speak for discussants are also controlled by chairs. Already prior to the conference, the opportunity to present research results is controlled by the review process for proposed abstracts. Another controlling instance follows when contributions are chosen for the conference proceedings in a review process. Ventola (2002: 44) introduces the concept of semiotic spanning for this kind of links to the past and the future. Semiotic spanning also refers to the multimodal character of conferences, in which presenters and discussants build links to their own discourse worlds and to other discourses, employing visuals, texts, experiments, questionnaires and so on. However, Swales (2004: 197) questions the need for such a new concept even though admitting that it “draws useful attention to cross-referential aspects of conferences”.

According to Swales (2004: 198), research into conference presentations (CP) from a discursal perspective started in the 1980’s with Dubois’ pioneering studies of the annual meetings of the Federation of American Societies of Experimental Biology followed by “a recent flurry of interest in Europe, starting in the mid 1990’s”. He assumes that this interest emanates from the endeavour to “help continental European scientists and scholars maintain their rightful place in increasingly Anglophone conferences and conventions” (p. 198).

In relation to other forms of scientific discourse, conference presentations can be situated between laboratory life and refereed publication of research results (Dubois 1980, Rowley-Jolivet 2002). Rowley-Jolivet states:

The conference presentation has, so to speak, a foot in both worlds: closely connected to laboratory life both by the oral nature of its discourse and by the fact that it is often the first public appearance of the research carried out there, a conference presentation is nevertheless a structured discourse genre delivered in a public forum and therefore also a close cousin of the research article in many respects. (Rowley-Jolivet 2002: 97)

The preliminary character of research results, surprising findings and the reasons for choices made during the research process are often made much more transparent than in the written counterparts of oral presentations (conference proceedings or research articles), as Rowley-Jolivet’s examples from conference presentations in geology and physics show:

Preliminary character: *What I would like to present now is preliminary results of ...* (p. 100)

Surprising findings: *... and we were confused as to why ...* (p. 105)

Reasons for choices: *Actually this turned out to be too small, we had to put ...* (p. 104)

Also Thompson (2002) has witnessed similar characteristics. Storytelling and narratives were constituent in conference presentations in different disciplines (e. g. physics, surface sciences, discourse analysis and English teaching) whereas related written articles contained only brief statements, as the following example shows (p. 159):

Oral presentation:

So we thought we had a nice picture of this molecule we were quite happy that the molecules that were forming this structure this orientation that they were forming a well-defined surface until we did some STM work with ... and then our whole world fell apart for a while but in rebuilding it it's turned out to be a much more complex world than we previously thought.

Written article:

The α structure is relatively complex.

The audience of oral conference presentations is thus, so to speak, able to eyewitness the construction of scientific facts (Fleck [1935] 1979) within the research process to a much higher degree than readers of an original research paper.

In addition to the tentative claims made in conference presentations of most disciplines, Räsänen (2002) found that in many engineering disciplines the aim was to make the key developments public. In contrast to most other disciplines in which abstracts are used for accepting or rejecting conference papers, peer-reviewed conference proceedings were published prior to the conference and formed the basis for the acceptance of a paper in the automotive crash safety conferences studied by Räsänen (2002: 75). These interdisciplinary conferences in applied sciences, with participants from academia and industry, were thus a forum for getting consensual knowledge claims accredited. Räsänen characterises them also as a reward system and market place (p. 78).

With reference to international conferences Ventola (2002: 27) points out that not only language skills cause problems for participants coming from different language and cultural backgrounds, but also differences in academic presentation traditions. Presentation styles were found to differ greatly, for example, in a study of conference presentations given by Russian and German scientists, causing irritation on both sides (Kotthoff 2001). Her corpus consisted of 20 conference presentations on cultural studies recorded in Germany, Kazakhstan, Russia, and Georgia, but her (pilot) study focused only on eight of these (four given by Germans and four by Russians). Differences in conference presentation styles were found in narrowing the topical focus, reference to the state of the art, and pointing out personal contribution to the field. These activities were introduced metalinguistically by the native speakers of German but not by those of Russian whose presentations, in contrast, had more general scopes and left orientation within the topical development and clues to the personal contribution to be discovered by the audience themselves. Reasons behind these differences seem to derive from different values and beliefs towards intellectual

competence. For example, wide reading seemed to be more valued than originality by the native Russian presenters. In addition, Kotthoff points to different societal conditions such as recruitment conventions, funding of research, exchange and networking practices, and access to publications. Whereas originality of research and received grants are important criteria for search committees in Western academia, in-house recruitment was more often the case in the institutions of the former Soviet Union (p. 345). In Kotthoff's view, giving a conference presentation is by itself evidence for academic prestige in the Eastern tradition, and needs not to be proved by originality (p. 346). However, Kotthoff also points to hegemonic structures of increasingly globally oriented research practices and postulates an international prestige gradient (*internationales Prestige-Gefälle*) as indicated by the preference to publish in Western journals (p. 328), for example.

The importance of such transepistemic framing (Knorr-Cetina 1981) became clear also in a study of conference presentations given in 1991 by East- and West-German researchers of plant breeding (Ylönen 2009). In this study, opening and closing addresses as well as conference presentations were analysed from the point of identity and social positioning. In the context of the reunification, the asymmetric starting position of East- and West-German plant breeders became clear in both research methodologies (classic plant breeding in East-Germany vs. gene technology in West-Germany) and communicative strategies (appeals for understanding by East-Germans vs. praise of Eastern-German achievements by West-Germans). The results showed that the value of research depends also on the time and place where it was conducted, and its originality on ideational (politically predefined settings) and financial opportunities of scientific communities.

4 Conclusion

The focus of this chapter has been on oral scientific research analysed from a discursive point of view. However, due to the lack of space many interesting studies could not be discussed, such as visual language and more linguistically focused analyses of presentations as well as conference discussions. A comparison of genres introduced here shows that the institutional frame influences the way participants speak and interact. This seems to be true not only for differences between genres but also for those between different discourse communities. The studies reviewed above show the significant role oral discourse plays in scientific research, be it for the development of ideas and the construction of knowledge or for the socialisation of graduate students into the discursive practices of the discipline. Ethnographic and conversation analytic studies of discourse practices in scientific research offer also interesting insights into thought styles (Fleck [1935] 1979) and the sociology of scientific communities as well as their values and beliefs about intellectual competence.

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