

# Distinctive Linguistic Features of Qualitative and Quantitative Research Reporting Comparing Research Papers in Nursing Science

Riitta Sallinen, Eva Braidwood

## *Abstract*

*Since the beginning of the 20th century various disciplines where the quantitative approach prevails have used for research reporting the Introduction-Methods and Materials-Results-and-Discussion (IMRAD) format with a set of shared content and sequence-related conventions. However, the last 30-40 years have witnessed an insurgence of the qualitative research approach in fields such as sociology, education, female studies, health science and marketing. Although they share certain features with quantitative research reports, the scientific papers produced in these fields are assumed to constitute a specific sub-genre of scientific research reporting. A number of literary sources provide instructions for qualitative research reporting with regard to the content structure and organisation of the text. However, thorough linguistic analyses of the genre features of qualitative research papers still seem to be missing. This paper introduces a comparative genre analysis-based study design for the identification of the distinctive linguistic features of qualitative English-medium research reports and discusses the findings of a pilot study comparing qualitative and quantitative nursing science articles.*

## **1. Introduction**

Since the beginning of the 20<sup>th</sup> century various disciplines with the quantitative approach as their major tool of inquiry have used for research reporting the IMRAD format (Introduction-Methods and Materials-Results-and-Discussion) in which a set of shared content and sequence-related conventions are accompanied by some discipline-specific variations (Luukka 2002). Guide books for novices in quantitative research reporting abound including detailed linguistic descriptions of the conventional structure and content (see e.g. Swales 1990 and Dudley-Evans 1994). However, the last 30-40 years have witnessed an insurgence of the qualitative research approach particularly in the fields of sociology, education and some new disciplines such as female studies, nursing science and marketing, which arise from the sociological tradition (Creswell 2003). Even though relevant aspects of the IMRAD framework have been applied to the reporting of qualitative research, there are well-grounded reasons to assume that qualitative research reports constitute a specific sub-genre of scientific writing. A number of literary sources provide instructions for qualitative research reporting at the level of the content structure and sequence to be followed (see e.g. Creswell (2003) and Wolcott (2001)). Yet, thorough linguistic analyses of the genre features of qualitative research reports still seem to be missing. Such information is, however, needed to define the writing skills to be mastered by qualitative researchers.

The purpose of the study discussed in this article is to identify the distinctive linguistic features of qualitative research reports written in English through a comparative genre analysis of a total corpus of ten quantitative and twenty qualitative research reports in the fields of nursing science and marketing. Even though the main study will be a primarily quantitative survey with hypotheses necessary to constrain the otherwise unlimited scope of genre analysis, the analysts must still practise the open-mindedness of a true qualitative researcher to be able to also spot unanticipated emerging phenomena.

The topic of the study arose from a practical need of the scientific writing teachers at the Language Centre of the University of Oulu to know more about the writing skills needed

for qualitative research reporting. Language centres at Finnish universities are currently faced with a growing demand to provide scientific writing courses for postgraduate students and researchers who publish their work in English. In such postgraduate writing classes it has become evident during the last few years that a remarkable number of the students in the above-mentioned fields are involved in qualitative research.

The purpose of this article is to outline a study design for the comparison of the genre features of quantitative and qualitative research reports and to present the findings of a mini-scale pilot study to demonstrate the applicability of the proposed design. It is assumed that the distinctive genre features of qualitative research reports can be identified, explained and understood in the most insightful way by contrasting them with those of quantitative reporting. Even though mixed methods studies, i.e., study designs using both quantitative and qualitative methods to attain a multifaceted insight into the phenomena to be studied, are becoming increasingly common, the study outlined in this article will focus on the two contrasting research orientations. However, understanding the logic of quantitative and qualitative research reporting will also benefit those using mixed methods.

## 2. Study design

The method proposed in this article for the identification of the distinctive linguistic and content-structural features of quantitative and qualitative research reports is comparative genre analysis based on Swales's (1990: 58) definition of the notion of genre and Bhatia's (1993) model of genre recognition. Genre is defined by Swales as

a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style.... In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience. If all high probability expectations are realized, the exemplar will be viewed as prototypical by the parent discourse community.

The first step of the comparative genre analysis proposed for this study is based on the above definition of genre and thus requires the identification of the communicative purpose and overall schematic structure of the target texts as the primary determinants of genre. The next three levels of analysis are suggested by Bhatia (1993) for the mapping of the distinctive genre features of a group of texts. The complete analysis involves a survey of the following aspects: 1. Identification of the communicative purpose and overall schematic structure of the target texts. 2. Analysis of lexico-grammatical features. This level of analysis consists of quantitative corpus studies to test intuitive or impressionistic statements of genre features. 3. Analysis of text-patterning or textualization. At this stage of the analysis conventionalized patterns of language use at the levels of lexis, syntax and discourse are studied to find out about the pragmatic and tactic reasons underpinning such conventions. The purpose here is to identify why members of various discourse communities write the way they do. 4. Structural interpretation of the text-genre. This level denotes the analysis of content-based organization conventionally described as substance-specific moves.

A communicative purpose can be ascribed to the target texts by describing them at a text level as Searlian (1985) speech acts with respective illocutionary/communicative purposes (In this article, the Swalesian term 'communicative purpose' is regarded as an equivalent to the Searlian term 'illocutionary purpose' when a text is discussed as a macro-level speech act by the writers). By the above Swalesian definition of genre, the

communicative purpose of the text is manifested as a particular schematic structure. For the description of the overall schematic patterns of the target texts Winter's (1986) models for basic text structures can be applied.

The study design to be introduced in this article is based on the assumptions that researchers choose either a quantitative or qualitative research approach pursuant to their epistemological conceptions, i.e., their understanding of what knowledge is and how it is created. The other starting point is that these choices are manifested as particular linguistic features in the respective research reports. Accordingly, the hypotheses to be tested in this study for genre description arose from the two main epistemological orientations, i.e. postpositivism and constructivism, and the subsequent formulations of the quantitative and qualitative research approaches. An outline of the two epistemological schools of thought and the quantitative and qualitative research approaches is provided below.

### *2.1. Two main epistemological orientations*

The two main epistemological orientations on which modern scientific activity is grounded are postpositivism and constructivism. Postpositivism originates in the thinking of Newton, Locke, Comte, Mill, and Durkheim and challenges the positivistic idea of the absolute truth of knowledge (Phillips and Burbules 2000). Knowledge is believed to be created when people inquire into the causes, or probable causes, of phenomena. This inquiry starts with a theory which is tested through empirical observation and measurement. To be testable, reality is reduced to variables, hypotheses and research questions. In brief, the key elements of postpositivistic thinking include the following (Creswell 2003: 1) Determinism: causes probably determine effects; 2) Theory verification; 3) Empirical observation and measurement; 4) Reductionism: reality is reduced to small elements (variables, hypotheses, research questions) that can be tested.

Constructivism originates in the thinking of Mannheim, and has been elaborated on in the works of Berger and Luckman (1967), and Lincoln and Guba (1985). According to constructivism, knowledge is created by people through the interpretation and understanding of phenomena. Knowledge is a reflection of the way in which multiple participants construe and comprehend phenomena in various social and historical contexts. The understanding of phenomena results in theory generation. In a nutshell, the main elements of constructivist thinking are as follows (Mannheim, Berger and Luckmann (1967), Lincoln and Guba (1985), Crotty (1988)): 1) Understanding: meanings are constructed by human beings as they engage with the world; 2) Multiple participant meanings; 3) Social and historical construction; 4) Inductive reasoning; 5) Theory generation (Creswell 2003).

### *2.2. Quantitative and qualitative research approaches: Manifestations of two epistemological orientations*

As suggested above, these epistemological orientations are manifested in the two main approaches to scientific inquiry: While the quantitative approach has its origin in postpositivistic epistemology, the qualitative mode derives from the constructivist line of thinking. (Creswell 2003) The distinctive features of quantitative and qualitative approaches as defined by Creswell (2003) reveal their epistemological premises: Quantitative research tests cause-consequence theories by conducting experiments and surveys, and observing, comparing and measuring variables. The methods of data collection include the use of predetermined instruments, such as closed-ended questionnaires, which enable operation with numerical data and statistical analyses. The data collected typically relate to performance, attitude or census information. Quantitative research defines the probability of the cause-

consequence relationships by applying standards of validity and reliability. In accordance with postpositivist epistemology, knowledge is created by means of quantitative research activity when hypothetical cause-consequence relations become adequately established as a result of methodologically sound processes of data collection and statistical analysis.

A summary of the distinctive features of qualitative research highlights the following aspects: Qualitative research focuses on a single concept or phenomenon as opposed to a set of several variables typical of quantitative studies. Instead of aiming at objectivity as quantitative research does, qualitative research explicates the researcher's position with respect to the subject matter of the study and brings in personal values. The strategies used range from narratives, phenomenologies and ethnographies to grounded theory and case studies. The methods of data collection include emerging methods, open-ended questions, interviews, observation, and document/audiovisual data/ text/image analyses. The researcher collaborates with the study participants, studies their contexts and uses the meanings the participants ascribe to phenomena in order to interpret the data and formulate a theory. Qualitative researchers also seek to validate the accuracy of their findings, thus the results are frequently used to create a theory. In sum, a qualitative study relies on the participants' judgements, impressions and feelings as a source of knowledge. (Creswell 2003)

As the above discussion shows, the quantitative and qualitative approaches to scientific inquiry reflect two different epistemologies. This provides a well-grounded reason to suggest that the textual manifestations of such research processes, i.e. quantitative and qualitative research reports, also show differences that can be explained by reference to these epistemologies.

### 3. Hypotheses formulated

#### 3.1. Hypotheses relating to the communicative purpose and schematic structure of qualitative and quantitative research reports

To describe the hypothetical communicative purpose of quantitative and qualitative research reports the texts are considered as text-level speech acts. According to the Searlian (1985) speech act theory both type of research reports can be described as *representative speech acts* with the illocutionary purpose of 'saying how things are' (see Table 1). However, while the quantitative research report, which originates in the postpositivistic epistemological orientation, describes a process of theory verification to 'say how things are', the qualitative research report with a background in constructivism accomplishes the same by articulating the joint understanding of reality by a group of research participants. This suggests a difference in some subcategory of communicative purpose in the two texts. Table 1 below presents a subcategorization of the textual representative speech act and the related illocutionary purposes (for textual illocutionary purposes see Sallinen 1998: 96-98). The subcategories are based on the incorporation of a modality aspect, i.e., the illocutors' assessment of the reality-related validity of an utterance.

**Table 1: The communicative purpose of the representative textual speech act**

TEXTUAL SPEECH ACT	COMMUNICATIVE PURPOSE
<b>1. Representative</b>	<b>to say how things are</b>
<b>1.1. Statement</b>	<b>to report facts</b>
<b>1.2 Evaluation</b>	<b>1.2 -to report subjective assessments</b>
<b>1.2.1. Argumentative evaluation</b>	<b>1.2.1 -to propose/claim that one's assessment is true</b>
<b>1.2.2. Non-argumentative evaluation</b>	<b>1.2.2 - to report subjective assessments with no intention to substantiate</b>

Within this theoretical framework a quantitative research report can be seen as an argumentative evaluation, which seeks to establish its validity. A qualitative research report, on the contrary, seems to be closer to a non-argumentative evaluation, which allows for subjectivity.

Based on the above hypotheses about the communicative purpose of the two types of reports, hypothetical overall schematic structures were also proposed for each of them. For the representation of the overall schematic structure of the texts we use a modified model of Winter's (1986) model of two basic text structures; *the Evaluation – Basis model*, which represents the schematic structure of an argumentative text, and the *Situation – Evaluation model*, which signifies any text where a statement of facts is followed by the writer's/speaker's response to the situation. The response may vary from value assessment to interpretation, commitment, instruction or causal explanation or a combination of these.

The communicative purpose and the schematic structure in which it is reflected constitute the primary determinants of a text genre and in this case they suggest genre differences between the qualitative and quantitative research reports. Thus the following hypotheses were formulated: *Hypothesis 1*: Quantitative research reports, when 'saying how things are' tend to be more persuasive than qualitative ones because they propose that their predetermined assessment of some aspect of reality is true (see Table 1). Their overall schematic structure may be represented by the following formula: HYPOTHETICAL EVALUATION (X) – TESTING – CONCLUSION (X CONFIRMED / X OVERTURNED)

The above hypothesis for a schematic structure arises from the fact that the starting point of quantitative research in its orthodox form is an assumption of a cause-consequence relationship between phenomena (see Section 2.2. above). Such an assumption is used in the study design with dependent and independent variables irrespective of the fact whether a research question or hypothesis explicitly articulates it. In other words, the quantitative researcher has a pre-existing idea or theory of the potential state of some aspect of the real world. By the means of quantitative approach the researcher then tries to persuade his/her audience to accept his/her position or its opposite. For instance, Huth (1990) identifies 'critical argument' as the basic textual function underlying quantitative medical research reporting. Thus, through the quantitative approach the researcher can only find what he/she can anticipate.

The second hypothesis relates to the way in which qualitative research reports seek 'to say how things are'. As pointed out in Sections 2.1.-2.3., the qualitative researcher does not start his/her inquiry with a predetermined idea of what the research process should provide evidence for. Instead, the researcher, after having chosen the object of inquiry, is predisposed to accept any interpretation of reality that arises from the data. Thus it seems that in qualitative research reporting, the researcher displays to the reader a part of reality as the researcher and the study participants have experienced it. Such orientation to knowledge highlights the significance of data description. Chenail (1995) even calls data the 'star' of qualitative research and research reporting as opposed to the prominent role of argumentative persuasion. The above discussion results in the following hypothesis about qualitative research writing. *Hypothesis 2*: Qualitative research reports 'say how things are' by informing the reader of phenomena as experienced by the study participants and interpreted by the researcher in a relevant context. Persuasion relating to the researcher's interpretation is either non-existent or weaker than in quantitative research because readers are not made to accept/reject a predetermined position. Its overall schematic structure may be represented by the following formula: SITUATION – EVALUATION / INTERPRETATION / CONCLUSION (- BASIS)

The qualitative research report can best be understood to consist of a sequence of two speech acts where the first is a statement of facts (i.e. the data obtained from the study participants) and the second may vary between a non-argumentative evaluation and an argumentative evaluation with a persuasive illocutionary/communicative purpose (realized in a basis provided for the evaluation). However, in comparison with quantitative research reports, qualitative ones are assumed to show less persuasion due to the fact that persuasion, if there is any, is weaker because it does not determine the structure of the whole text as is the case in the former type. The testing of the first and second hypotheses requires a survey of patterns of argumentative sequences (Winter), and other argumentation/verification-related textual manifestations in the two types of research reports.

### *3.2. Hypotheses relating to lexico-grammatical features and genre-specific textualization*

The next four hypotheses also relate to the above ‘persuasion to say how things are’ and ‘display of data to show how things are’ distinction between quantitative and qualitative research reporting. They arise from the emphasis that the quantitative approach lays on objectivity, impersonality, and the reductive conventions of factual writing as opposed to the significance of lived experience and subjective interpretation as sources of knowledge and theory formation in qualitative study. Accordingly, the following assumptions of textual differences between the two approaches seem to be worth testing:

*Hypothesis 3:* Qualitative writing is characterized by the more frequent use of evaluative language, methodology-specific (e.g. narrative method, phenomenology, ethnography, grounded theory or case study) textualization / phraseology, and rhetorical strategies and devices than quantitative writing;

*Hypothesis 4:* Qualitative research reporting allows the individual voices of the author and participants to be heard more clearly and distinctly than quantitative writing. This results in greater variation of style and register in qualitative writing;

*Hypothesis 5:* The discussion of the qualitative process involves a wider use of the narrative text type than the description of the quantitative research process.

The linguistic phenomena to be surveyed in order to test the above hypotheses (3-5) include the following: 1) use of evaluative lexis: assessment of moral and aesthetic value, modality, hedging (Hunston and Thompson 2000); 2) use of rhetorical devices (including metaphor, simile) and strategies (use of generic-specific-generic patterns, paraphrasing, summarizing, metatext, question-answer); 3) references to the author/s and participants; 4) use of the active/passive voice; 5) stylistic variation; 6) incidence of various text types (descriptive, narrative, expository, argumentative and instructive).

According to the last hypothesis (*Hypothesis 6*), which relates to the content-based organization or move structure of the two types of research reports, there are differences in the content structure (i.e., the sequence and content of sections and/or moves) of quantitative and qualitative research reports arising particularly from the ‘theory as a starting point’ and ‘theory as a final product of the research process’ difference and from different approaches to data, i.e., statistical and descriptive, in the two types of reports. Both quantitative and qualitative research literature provide instructions for the sequence of content items, i.e., sections and moves. A comparison of the two approaches may, however, provide insight into the logic of the two conventions. Attention must also be paid to the fact that the content/move structure is likely to show discipline and methodology-specific variation.

#### 4. The corpus

For the mini-scale pilot study to be reported here, two quantitative and two qualitative nursing science research reports were explored. To collect qualitative research reports a library search was made for qualitative health science/nursing science journals to which Oulu University Library has subscription. From among the options found the journal *Qualitative Health Research* was randomly chosen. The articles included were Lena Nordgen, Margareta Asp and Ingegard Fagerberg 2007, "Living With Moderate-Severe Chronic Heart Failure as a Middle-Aged Person." *Qual Health Res* 2007; 17; 4 and Elialilia S. Okello and Stella Neema, 2007, "Explanatory Models and Help-Seeking Behavior: Pathways to Psychiatric Care Among Patients Admitted for Depression in Mulago Hospital, Kampala, Uganda." *Qual Health Res* 2007; 17; 14. The quantitative research reports (Nan Hou et al., 2004, "Relationship of Age and Sex to Health- Related Quality of Life in Patients with Heart Failure." *Am J Crit Care*. 2004;13: 153-161, and Deborah Kendall-Gallagher and Mary A. Blegen, 2009, "Competence and Certification of Registered Nurses and Safety of Patients in Intensive Care Units." *Am J Crit Care*. 2009;18: 106-113) were collected from a randomly chosen recent post-2000 issue of *American Journal of Critical Care*, another nursing science journal accessible through our university library, with quantitative study design as acceptance criterion. The size of the pilot corpus was restricted to four research papers because the purpose of the pilot study was only to test the applicability of the study design outlined in this article.

#### 5. Findings of the pilot study

The findings made based on the above comparative genre analysis of the pilot corpus are not generalizable due to the small size of the corpus. They only point out features feasible in and possibly typical of the respective types of research reports. Hypothesis 6 was left out of this pilot study because on the basis of the analysis of only four research reports nothing of general relevance could have been said about content structure and sequence related differences between the two types of reports. Similarly, from Hypothesis 3 we only studied the rhetorical devices because the main aim was to concentrate on dominant textual features within the scope of this article.

*Hypothesis 1* The first hypothesis suggesting the distinctly persuasive character of quantitative research reporting was not supported by frequent findings of local argumentative patterns, i.e. sequences with an evaluative/argumentative proposition followed by a basis.

A persuasive element is, however, necessarily embedded in the overall organization of quantitative research reports because the methods and results sections provide a basis for a conclusion confirming or refuting the hypotheses of the study. Yet, in one of the sample reports no hypotheses were formulated, which is indeed often the case. A quantitative study, however, typically involves an inquiry into the relationship between variables, which means that the existence or non-existence of a relationship is hypothesized. The statement of the purpose of the study or the research question can therefore be transcribed into hypotheses which justify the overall description of the quantitative research report as an argumentative text. This was also the case in the sample study: Example 1: "Therefore the specific aims of our study were to examine the differences in HRQL (health related quality of life) at baseline and after 26 weeks among 4 groups with heart failure ... and to evaluate interactions of age and sex with the changes in HRQL." (Nan Hou et al. 2004). This statement of the purpose of the study can be transcribed as three hypotheses the researchers have covertly postulated: 1) We hypothesize that age has an influence on HRQL baseline and changes in HRQL over 26

weeks. 2) We hypothesize that sex has an influence on HRQL baseline and changes in HRQL over 26 weeks. 3) We hypothesize that age and sex have an influence on HRQL baseline and changes in HRQL over 26 weeks.

Another indication of the overall persuasiveness of quantitative research reports is the conventional formula (Day 1983) used to open the results section with a reference to the table presenting the results of the statistical analysis. This is an example of a genre-specific manner of textualizing an argumentative evidence – conclusion sequence:

Example 2: "Table 3 shows the mean score and the results of group comparisons at baseline, and Table 4 shows the mean scores and the post hoc results by group at 26 weeks after baseline. We found significant differences among the 4 groups of patients on the total CHO scores and all 3 subscale scores of the CHQ and on the total LHFQ scores and the emotional subscale scores of the LHFQ (Table3)." (Hou et al. 2004)

Example 2 also illustrates a further manifestation of the underpinning argumentative logic in the writers' conventionalized use of 'verification phraseology' (underlined in the example) always referencing the test/experiment/intervention in connection with the discussion of the results.

Both of the quantitative samples showed, however, an explicitly argumentative pattern when the authors argued for the justification of their study (argumentative evaluation and subsequent basis indicated with a capital word in the brackets). Example 3 illustrates this structure: (EVALUATION) "Information on the relationship of patients' age and sex and the interactions of those 2 factors to HRQL (health related quality of life) and to changes in HRQL over time is important." (BASIS) "Such information can be incorporated into critical care nurses' assessments, so that realistic goals can be established and appropriate interventions designed for specific, demographic populations ..." (Hou et al. 2004).

Moreover, examples of the use of an array of other persuasive devices could be found in the sample reports. First, typically in the introduction and discussion chapters references to previous studies are used as an implicit form of persuasion when the information prominent method of citation is applied Example 4: "Importantly, HROL is a significant predictor of hospitalization and mortality among chronically ill patients with heart failure.<sup>13,14</sup>" (Hou et al. 2004). Similarly, the writers may also argue for the validity of their own results by reference to previous studies, as they do in Example 5: "Study results for the 2 outcome variables with data from relatively large numbers of units, medication errors and patient falls, align with results reported in the patient safety literature." (Kendall-Gallagher et al. 2009) This reference represents a secondary round of persuasion which typically takes place in the discussion section. (See also Day 1983, and Hyland 2004 for the form and function of citation).

In addition to the above persuasive elements the quantitative research reports also showed semi-argumentative patterns which remain in the grey terrain between an argumentative evaluation followed by substantiation and a text-organizing generalization followed by a discussion of the topical issues at a more specific level. This is the case in Example 6: (EVALUATION/GENERIC) "Our results supported the hypotheses in part." Then the text continues (BASIS/SPECIFIC): "Research question 1 examined zero-order correlations between the proportion of certified staff nurses in the unit and rates of adverse events. Significant correlations were detected between (1) years of nursing experience and rate of medication administration errors, (2) ... . No significant errors were found between certification and outcomes ... ." (Kendall-Gallagher et al. 2009)

Thus it seems that in spite of its undoubtedly persuasive illocutionary/communicative purpose which is evidenced by the overall schematic structure of the text, a quantitative research report does not necessarily show a prevalence of local argumentative patterns used to

substantiate the macro-level hypotheses of the study. Instead, the persuasiveness of a quantitative research report is rather embedded in the process it describes and manifested in the verification conventions (i.e., a reference to tables before the discussion of results) and textualization (i.e., a reference to instruments included in the articulation of results) used to introduce and discuss the results. In addition, reference to previous research as a device of substantiation acts as persuasion.

*Hypothesis 2* Our second hypothesis proposed that the overall communicative purpose of qualitative research reports is non-argumentative because according to the epistemological premises of the qualitative research approach knowledge is created through shared understanding between multiple participants. The focus of the approach was understood to be on displaying and describing reality as experienced by the study participants. This focus was found to be highlighted in the articulation of the purpose of the study / the research questions in both of the qualitative research reports analysed for the present study. The questions asked by qualitative researchers are 'how' questions instead of the 'why' questions of quantitative researchers, as it is demonstrated in Example 7: "Consequently, previous research poses the questions How do middle-aged people with CHF relate to themselves and to their health? How do they experience their bodies and their life situation?" (Nordgren et al. 2007)

The non-argumentative nature of qualitative research reporting also seems to be enhanced by the researchers' way to assume a 'transcendent' if not omniscient view of the target phenomenon based on established processes of categorization, description and interpretation but with no reference to evidence at the textual level, as Example 8 testifies: "The body is asking for attention, and when the body's demands increase illness invades life and the life situation then starts to change. Life no longer makes much sense to the person; it is perceived as unfamiliar, strange, or without hope or meaning." (Nordgren et al. 2007) At the level of the qualitative study design, however, this kind of discussion is justified through a validating method of data analysis which is described for the readers. Yet, in spite of this methodology-based validation, the text itself communicates a strong sense of subjectivity when passages with textually non-substantiated evaluations become extensive. For example, in the phenomenology-based Nordgren article the description of the essence of the phenomenon constitutes one chapter.

On the other hand, through the presentation of data pseudo-argumentative patterns are created where generalizations may seem to be supported by single cases. In the Nordgren article, the constituents of the essence of the phenomenon were described by reference to primary data. In this practice, however, the researcher's contribution may not be much else than that of transcribing the message into the code of the target scientific community. This is what Example 9 demonstrates: "In addition, they understood their condition as a punishment ..... , signifying the need to find reasons or explanations 'But ... one can ask oneself why is this happening to me and not to somebody else, so why does it have to be me?'" (Nordgren et al. 2007)

The non-argumentative tone of qualitative research reports may, however, also change in the discussion section when the authors assess the strengths and limitations of their study. The discussion section of the Nordgren article shows an extensive argumentative passage where the authors argue for the scientific validity of their findings by reference to the method and procedure used. (The capitalized text inserted in brackets in the following text sample indicates the implied logic of the passage):

Example 10: "Some requirements need to be fulfilled if knowledge is to be called scientific (Giorgi 2005). These criteria, as described by Giorgi (1985), are systematic knowledge, methodologically obtained knowledge, general knowledge, and critically evaluated knowledge. Giorgi (2005) described systematic knowledge as a process

whereby 'partial bits of knowledge should be able to relate to other bits of knowledge' (p.78). Knowledge must be structured and organized. Consequently, in this study, (WE CLAIM THAT OUR FINDINGS ARE SYSTEMATIC KNOWLEDGE ACCORDING TO GIORGI BECAUSE) we have tried to organize and describe the essence and the meaning constituents as clearly as possible." (Nordgren et al. 2007)

The need by the authors to argue retrospectively as thoroughly as in the Nordgren et al article for the validity of their procedure and findings, may reflect a status quo where the scientific community as a whole may not yet be satisfied about the validity of the qualitative methodology. Local patterns of argumentation may also occur in the discussion section especially, if an agenda for change (in the social practice) or other recommendations for the application of the knowledge are proposed by the researchers on the basis of the findings, as it does in Example 11: " (PART OF EVIDENCE) These generalizations in phenomenological research studies are expressed as the phenomenon's essence. (CONCLUSION) Our claim is therefore that knowledge from this study can be beneficial to caregivers within a variety of health systems... ." (Nordgren et al. 2007) The above observations on the non-existence and existence of persuasion/argumentation in the two qualitative sample articles may be distinctive of the qualitative subgenre of scientific writing. Moreover, besides the patterns of persuasion/ argumentation discussed above in Examples 9-11, patterns illustrated by Examples 3-6 in the previous section are also likely to appear in qualitative writing.

It seems on the basis of the restricted data gathered in the pilot study that even though the qualitative approach has set out to produce knowledge by describing how people experience and understand reality instead of seeking to prove the researcher's predetermined idea of reality, the claim of the approach lies in the validity of the description of reality they provide. Consequently, the smoothly flowing narrative/descriptive bulk of a qualitative research report may incorporate more explicit argumentation for methodological validity than what is likely to be found in quantitative research.

*Hypothesis 3* In consequence to the intrinsic narrative in qualitative research articles, the authors use a wider range of rhetorical devices. Rhetorical devices are abundant in qualitative papers, while there are only a few to be found in the quantitative paper. The dominant trope in Nordgren's paper originates from the projection of the interviewees' confession onto the plane of the text serving as philosophical background. "Body" is the leitmotif of the text serving in a multiplicity of stylistic roles and patterns: personification, metaphor, allegory and referential framework. Some further examples for the wide array of rhetorical devices (and figurative speech) are as follows; "...when the body's condition constantly changes, when it's weak, fragile and vulnerable, it reminds the person the life is finite.." "when it is not possible to perform daily activities that previously they considered natural and normal..."; "The body is asking for attention and when the body's demands increase illness invades life." The figurative rhetorical devices in these extracts are repetition, personification, alliteration, metaphor, metonymy are synecdoche.

The comparison of the two types of research papers suggests that there are various text-types represented in both quantitative and qualitative papers. However, a clear division between the types (i.e. quantitative and qualitative) appears in the Result section. The qualitative paper can be seen as narratives of the informants within the narrative of the researcher, which makes it a set of embedded narratives characterised by multiple voices and multiple points of view discernable in both in the use of various registers and wider and lesser range of stylistic choices, as well as preference of certain grammatical constructions in the qualitative and quantitative texts respectively. In qualitative papers the findings seem to come directly from the informants ("patients"), through the researcher's synthesizing interpretation "the knowledge [evolving] from this study can be beneficial ... and can be seen as general" as

Nordgren put it. In quantitative writing the authenticity of research is established through the 'objective' depersonalised style of scientific reporting.

*Hypothesis 4* Our fourth hypothesis proposed that qualitative research reporting allows the individual voices of the author and participants to be heard more often and more distinctly than quantitative writing. Moreover, it was assumed that the multiplicity of voices in qualitative writing would result in greater variation of style and register.

A survey of our sample texts seems to support the above assumption of the greater 'visibility' and 'audibility' of the research participants, i.e. the subjects and the researcher(s) in a qualitative research report. In the quantitative research reports of the pilot data, we counted 9 first person plural (we) references to the researchers but no first person singular references were found. In 2% of the sentences the subject of an active verb was a referent denoting the author(s) and in 54% of the active sentences the subject denoted an element of the research procedure (words such as method, sample, research question, table, figure, etc.). 37% of the sentences was in the passive.

The corresponding findings for the qualitative articles were 37 references to the authors, 3 of these were first person plural references, 5 referred to the researchers as 'authors', and in 22 of the references the first person singular was used. The subject of an active verb was in 8% of the cases a word denoting the researcher(s) and 25% of the sentences showed a subject referring to an element of the research procedure. In 21% of the sentences the verb was in the passive.

These statistics highlight a more dominant orientation in qualitative research reporting towards the exposure of the researcher's persona in contrast to the impersonality that seems to be preferred by quantitative researchers. One explanation can be found in the objectivity-as-opposed-to-subjectivity dichotomy of the qualitative and quantitative research approaches. While quantitative study relies on objective observation/experimentation/testing the qualitative approach uses the researcher's understanding of phenomena as an instrument of knowledge production. Thus, in the same way as the instruments, experiments and testing procedures of the quantitative study have to be described to the scientific readership, the qualitative researcher as the instrument of knowledge production must be positioned and made visible. The use of the first person singular personal pronoun is one tell-tale sign of the qualitative researcher's self-exposure. The use seems to be particularly common in the description of the research procedure. The persona of the researcher may even appear with a marked human character, admitting to fallibility and proneness to bias, as Example 12 illustrates: "I preferred not to have access to the informants' medical records to avoid influencing my pre-understanding with ready-made interpretations or assumptions." (Nordgren et al. 2007)

Abundant self-referencing and the variation of first persons between singular and plural pronouns may serve the double purpose of establishing the author's identity both as a member of the wider public and that of the research community. (Hyland p. 93). In the methods section of the first of our qualitative sample articles the writers seem to assimilate themselves with the study participants' colloquial style by describing the research procedure in a colloquially flowing narrative: (Example 13) "The first stage in the analysis process was transcription of the interviews. I read the transcriptions at the same time as I listened to the tapes. ...As I read texts several times to become familiar with them, an open approach was important. ..." (Nordgren et al. 2007) In contrast, as evidenced by the above statistics, the writers of the quantitative paper feel the need of establishing and re-establishing themselves within the scientific community as credible researchers much less all through the paper. In the sample quantitative reports it is the research-technical notions such as research questions, instruments, tests and experiments that act ("Multivariate analyses revealed...", "Outcome

measures showed ...", "Research question 1 examined ... ", "Research question 2 examined the multivariate relationships ...") This feature in the grammatical construction of the text is clearly an indicator of the desire of the authors of the paper to hide their personal identity and be present only as conductors of science.

Variation in style and register is created in qualitative writing when the language of qualitative research report allows the individual voices of not only the author but also of the participants to be heard. This is what Example 15 highlights: The voice of the researcher introduces the internal monologue and self/commentary of the informant "In addition they understood their condition as a punishment.." The informant uses two voices: "... But ... one can ask oneself why is this happening to me ...? // "Why did it have to be me then?" ... Then I let it go... One can in fact ask what harm one has done ... But, as I said, one may have been so bloody mean, so one must lie down then, suffering, when the day will come." (Nordgren et al. 2007) Variation in the style of writing also seems to arise from the fact that varying demands are imposed on qualitative writers as intermediaries between the source of knowledge, i.e. the study participants, and the scientific community and as interpreters or meaning makers of the reported experiences: on the one hand they are driven by the desire to establish themselves as credible members of the research community and to conform with the convention of scientific writing, on the other hand, they may feel a need to stay loyal to their informants and not to take the story of the research procedure and findings out of the reach of the source audience by transcribing it into a code incomprehensible to the source audience. In addition, they are obliged by the scientific community to produce as the final outcome of their study generalized knowledge if not a theory. This means first rephrasing the colloquial language of the informants' utterances in an acceptable academic style (Example 16) and then taking it to the level of abstraction required by generalized meaning making (Example 17). This three-fold role of the qualitative author is reflected in the text as variation of style. The two examples below illustrate a meaning-making process, i.e., articulation of a theory-level generalization from the informant's utterance.

Example 16: "They described the body's signals as difficult to interpret, signifying an ambiguity of body. They wanted the body to be as it used to be, the body that did the things it used to do. The body was thus unwanted, but, at the same time, it was the actual body they had to live with. When the informants perceived the body as unfamiliar, it was presented as an object for thought: 'But as I said before, this is not life. I'm imprisoned; I'm imprisoned within my own body.' " (Nordgren et al. 2007)

Example 17: "When a person experiences that the body no longer is the usual body or the "habit body" (Merleau-Ponty, 1996).. , meaning the self becomes what it is through the body (Corbin 2003)." (Nordgren et al. 2007)

*Hypothesis 5* The discussion of qualitative data involves a wider use of the narrative. The qualitative paper can be seen as narratives of the informants within the narrative of the researcher. The story of the informants in the qualitative paper becomes the story of the research and ultimately the story of the researcher/writer. This duality of obligations explains on the one hand the double persona of the authors, discussed above. On the other hand, it accounts for the variation in style and register, which is especially marked between the various structural elements of the paper. The text therefore is a set of embedded narratives characterised by multiple voices and multiple point of view. Okello's paper reveals this feature of the text plainly when the turn taking between the researcher and informant is introduced as follows:

Example 18: "The stories carried descriptions of causal attribution as well as constant reevaluation of earlier ideas and the process of actively seeking new knowledge about the explanatory process. Causal explanation patterns were characterized by presentation of more than one attribution, as the narrative in the following extract suggests: 'My head has a problem. (Would you please elaborate?) My head has a problem it gets chaotic. Sometimes is like there bells ringing in it (sic).'" (Okello and Neema 2007)

Although the text that comes from the informant is descriptive rather than narrative, it definitely belongs to the story of recognising and living with the condition of depression. The next example coming from one subject of the study the same paper demonstrates the truly narrative text type with dramatic effect of simple sentences, reported speech, linear temporal structure, causality indicated by use of past perfect verb tense, etc.: Example 19: "My problem started when my father died. I was made an heir, my stepmother was not happy. When I fell sick for the first time I consulted a traditional healer and he told me ... " (Okello and Neema 2007).

With regard to the complex effect of all these features of the text we can say that qualitative research writing is characterised by narrativity bordering on fictionality, even in cases which use other than the narrative research method, whereas quantitative research articles stay within the single-voiced reporting of the research in question. The narrative character of qualitative papers arises from the above discussed multiplicity of voices which it uses within the created world of the research paper with the aim to provide the reader with access to the life world of the subjects as reflected in their life experiences.

## 6. Discussion

Observations made from the pilot data with regard to the presence/absence of persuasion in the two types of research reports suggests that a text may show structural persuasiveness/non-persuasiveness which may not necessarily become textualized as patterns of argumentation. Moreover, the text may show patterns of local argumentation, which does not affect the communicative purpose-based or schematic structure-based mode of persuasion. Our findings have reinforced the presumption that the differences in the generation of knowledge are reflected in the language of quantitative and qualitative research reports as the texts of the two sub-genres are "significant carriers of the epistemological and social beliefs of community members" as Hyland (2004: 93) puts it.

Widening the scope of the corpus and focusing on the single features of textual analysis separately are expected to bring even more insightful observations of the two types of research papers. In addition, including samples from different disciplines would enable an investigation of the influence of discipline-specific cultures of scientific writing in the two types of texts. The findings then could be distilled and transformed into pragmatic guidelines for qualitative writing.

### References:

- BHATIA, V.K. 1993. *Analysing genre: Language use in professional settings*. Harlow: Longman.
- CHENAIL, R.J. 1995. Presenting qualitative data. *The Qualitative Report*, Volume2, Number 3. Available at: < <http://www.nova.edu/ssss/QR/QR2-3/presenting.html> >.
- CRESWELL, J. W. 1998, 2007. *Qualitative Inquiry and Research Design; Choosing Among Five Traditions*. London, New Delhi, Thousand Oaks, CA: Sage Publications.
- CRESWELL, J. W. 2003. *Research design: Qualitative, quantitative and mixed methods approaches* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.

- CROTTY, M. 1998. *The foundations of social research: Meaning and perspective in the research process*. London: Sage.
- DAY, R.A. 1983. *How to write and publish a scientific paper* (2<sup>nd</sup> ed.). Philadelphia: ISI Press.
- DUDLEY-EVANS, T. 1994. Genre analysis: an approach to text analysis for ESP. In COULTHARD, M. (ed.), *Advances in written text analysis*. London: Routledge, pp. 219-228.
- HUTH, E.J. 1990. *Writing and publishing in medicine* (3<sup>rd</sup> ed.). Philadelphia: Williams & Wilkins.
- HYLAND, K. 2004. Corpus analysis and academic persuasion. In CONNOR, Ulla and UPTON, Thomas. Eds. *Discourse in the Professions: Perspectives from Corpus Linguistics*. Amsterdam Philadelphia: John Benjamins Publishing Co., pp. 87-115
- LINCOLN, Y.S., GUBA, E.G. 1985. *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- LUUKKA, M-R. 2002. Mikä tekee tekstistä tieteellisen, In KINNUNEN, M., LÖYTTY, O. (eds.), *Tieteellinen Kirjoittaminen*. Tampere: Vastapaino, pp. 13-28.
- PHILLIPS, D.C., BURBULES, N.C. 2000. *Postpositivism and educational research*. Lanham, MD: Rowman & Littlefield.
- SEARLE, J.R., VANDERVEKEN, D. 1985. *Foundations of illocutionary logic*. Cambridge: Cambridge University Press.
- SWALES, J. 1990. *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- WINTER, E.O. 1986. Clause relations as information structure: Two basic text structures in English. In COULTHARD, M. (ed.), *Talking about text. English Language Research*. Birmingham: University of Birmingham.
- WOLCOTT, H.T. 2001. *Writing up qualitative research* (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.

*Riitta Sallinen & Eva Braidwood*  
*Language Centre*  
*University of Oulu*  
*e-mail: Ritta.Sallinen@oulu.fi*  
*e-mail: Eva.Braidwood@oulu.fi*