From Participant Narrative to Scientific Knowledge: Linguistic Processing of Qualitative Data in Nursing Science Research Reporting

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Kvalitatiivisen tutkimuksen kohteena on yleensä inhimillinen kokemus. Tutkimusote perustuu konstruktiiviseen tiedonkäsitykseen, jonka mukaan tieto on suhteellista ja riippuu kokijan tulkinnasta. Kvalitatiivisen tutkimuksen aineisto on kielellistä ja se saadaan tutkimukseen osallistuvien kertomuksista ja haastatteluista. Tässä artikkelissa raportoitavan tutkimuksen tarkoituksena oli tarkastella kielellisiä prosesseja, joiden kautta tutkittavien kertomukset jalostuvat tiedeyhteisön hyväksymäksi tiedoksi. Tutkimuksen aineistona käytettiin hoitotieteen alan tieteellisiä artikkeleita. Konstruktivistisen tiedonkäsityksen lisäksi tutkimuksen teoreettisena viitekehyksenä käytettiin argumentaatioteoriaa, koska tieteellisen diskurssin perusprosessina sen arveltiin nostavan esiin laadullisen tiedon tuottamisen erityispiirteitä. Tutkimuksessa kuvattiin tiedonsiirron ja muodostamisen prosessi laatimalla tutkimustuloksia käsittelevien väittämien hierarkia jatkumolla autenttisuus-tutkijavälitteisyys. Lisäksi kuvattiin argumentaatioprosessi ja lainatun kertomustiedon funktiot väittämien perusteluissa, sekä tunnistettiin tulosten yleistämisen, abstrahoinnin ja tieteen kielelle kääntämisen prosessit. Tuloksia tarkasteltiin ja pyrittiin selittämään konstruktivistisen tiedonkäsityksen lähtökohdista.

Keywords: qualitative research reporting, argumentation, constructivist epistemology

1 Introduction

Qualitative research focuses on the study of human experience using a methodology based on the constructivist conception of knowledge. As opposed to the experimentation- and statistics-based findings of quantitative research, the findings of qualitative studies originate in 'languaged data' (Polkinghorne 2007) obtained in the form of participant interviews and narratives. In this study we set out to identify and describe, in a corpus of qualitative nursing science research articles, the textual processes involved in generating scientifically acceptable knowledge claims from participant narrative. We also sought to explain some of the distinctive features of such processes in the light of the epistemological premises of the qualitative approach.

A vast literature on research reporting has focused on textual aspects that contribute to persuasion as the core process of scientific discourse. These studies have explored, for example, genre conventions in the form of move structures (Swales 2004), types of argument (Shaw 2000), citation (Hyland 2000), and writer-reader interaction through the use of metadiscourse (Hyland 2005a), and stance and engagement (Hyland 2005b), and evaluation and attitude markers (Hunston & Thompson 2000). In this study, it was expected that persuasion would constitute the backbone of the processes of knowledge production in qualitative research in the same way as it does in quantitative study. Although our conception of the persuasive character of research reporting is based on an understanding of the multifaceted character of the phenomenon, the present study seeks to observe the processes of knowledge production from the perspectives of argumentation theory and constructivist epistemology. This theoretical orientation was considered relevant because we hypothesized that the distinctive textual features of qualitative knowledge production stem from the 'context of justification' (Latour and Woolgar 1979) of such knowledge, i.e., constructivist epistemology, and that they are most likely manifested in argumentative practices. As studies with a similar perspective were not found, we assumed that the information revealed in this study would provide qualitative researchers with an insight into the epistemological aspects of some linguistic choices and textual solutions in qualitative research reporting.

2 Materials and method

Our corpus consisted of the Results, Discussion and Conclusion sections of thirteen qualitative research articles (RA) in the field of nursing science. Upon the first readings of the corpus, we identified the textual processes of 1) information transfer through author / researcher involvement; 2) claim validation through argumentation; 3) generalisation; and 4) abstraction / transcription of participant narrative into the language of the discipline as relevant to the study of qualitative knowledge production.

Table 1. The corpus

1/ D B. Nicholas et al. **The Lived Experiences of Children and Adolescents With End-Stage Renal Disease.** *Qual Health Res* 2011 February 21: 2, 162–173	2/ Schluter J, et al. **Understanding Nursing Scope of Practice.** *Journal of Advanced Nursing* October 2011 48: 10, 1211–22.	3/ McMullen LM, Herman J. **Women's accounts of their decision to quit taking anti-depressants.** *Qual Health Res* 2009 Nov 19: 11, 1569–79.	4/ BE Champlin **Being there for another with a serious mental illness.** *Qual Health Res* November 2009 19: 11, 1525–1535

5/ Elizabeth McInnes et al. **Older people's views in relation to risk of falling and need for intervention: a meta-ethnography.** *Journal of Advanced Nursing* December 2011 67: 12, 2525–2536.	**6/** Imelda Coyne, et al. **What does family centred care mean to nurses and how they think it could be enhanced in practice.** *Journal of Advanced Nursing* Dec 201167: 12, 2561–2573.	**7/** Tierney S, et al. **Treading the Tightrope between motherhood and an eating disorder: a qualitative study.** *Journal of Advanced Nursing* October 2011 48: 10, 1223–33.	**8/** Jacobson, Nora. **Dignity violations in health care.** *Qual Health Res* 2009 November 19: 11, 1536–1547.
9/ Lim, Joanne et al. **A qualitative analysis of stress, uplifts & coping in the pers. & professional lives of Singaporean nurses.** *Journal of Advanced Nursing* May 2011 67: 5, 1022–1033.	**10/** Wilde M.H. et al. **A qualitative descriptive study of self-management issues in people with long-term IUC.** *Journal of Advanced Nursing* 2011 67: 6, 1254–1263.	**11/** Ryan, K.M., et al. **Calling, Permission, and Fulfillment: The Inter-embodied Experience of Breast-feeding.** *Qual Health Res* 2010 December	**12/**De Maeyer J, et al. **A Good Quality of Life under the Influence of Methadone.** *Journal of Advanced Nursing* October 2011 48: 10, 1244–57
13/ W Small et al. **Injection Drug Users' Access to a Supervised Injection Facility in Vancouver. Canada: the influence of operating policies and local drug culture.** *Qual Health Res* 2011 June 21: 6, 743–56.			

The procedure started by identifying findings-related statements (FRS) in these RA. Then we established preliminary categories of FRS, which were designed to represent a continuum with a rising amount of author/researcher involvement in the generation of a claim. Next, we classified, according to the above categorization, every statement presenting and discussing findings, and added emergent categories as relevant. We then identified and described various patterns of argumentative sequences (AS) in the target texts on the assumption that statements with subjective judgement are to be supported by validating evidence or other sufficient argument to be acceptable for the scientific audience. Since it seemed that the dominant type of supporting argument in our data was quotation from participant narrative, we investigated its role in these sequences. To get an overall picture of the linguistic generation of findings in qualitative research papers, incidences were calculated for the various categories of FRS and for the frequency of AS. In addition, the study procedure incorporated continuous observation of emergent textual processes and patterns relevant to the generation and articulation of FRS. Since the scope of this article allows an in-depth discussion of processes 1) and 2) only, we will deal with processes 3) and 4) merely to reflect on the intertwined nature of all these processes.

The conceptual framework necessary for the description and discussion of the textual phenomena emerging from our data included the constructivist conceptions of knowledge and the theory of argumentation.

Constructivist epistemology: As opposed to the post-positivist epistemology, which assumes that an outside reality exists independent of the knower and that

knowledge about such reality can be obtained through observation, the constructivist conception of knowledge holds that there is no objective reality and no absolute knowledge. This means that knowledge is considered inseparable from the knower and the significance of individual experience as an element of a body of knowledge becomes highlighted. (von Glasersfeld 1996) Within constructivism there are, however, several schools of thought which vary in how exactly they see the construction of knowledge. Social constructivism, which represents an influential branch of the constructivist school, holds that knowledge arises from the consensus of multiple participants in conceiving experience in a social and historical context. Consensus between different subjects is seen by social constructivists 'as the ultimate criterion to judge knowledge'. (Heylighen 1993) Other criteria proposed by constructivists, as opposed to the post-positivist criterion of correspondence to reality, include the 'pragmatic outcomes' (Gergen 1995) and 'viability' (von Glaserfeld 1996) of what is considered as knowledge.

The above views of the nature of knowledge have an inherent bearing on how the audience can be convinced of the acceptability of research findings. In addition, they affect the generalization of findings in qualitative research which typically uses small samples and or a limited number of cases. Some constructivist theorists (Lincoln & Guba 1985) argue against the acceptability of generalization in the production of knowledge and claim that the aim of research can only be the development of an ideographic body of knowledge. Others, accepting generalization as a means of qualitative knowledge production, propose various types of less extensive generalizations. (Mayring 2007)

Argumentation is defined 'as a verbal, social and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by advancing a constellation of propositions justifying or refuting the proposition expressed in the standpoint' (van Eemeren 2009: 109). The aim of the argumentation theory has been to generate a model that represents and provides norms for the argumentative processes of natural language better than the rules of formal logic do. The problems of the study of natural-language argumentation involve identifying standpoints (positive or negative positions to a proposition), unexpressed premises, argument schemes (conventionalized ways of relating premises to standpoints, e.g. arguments from authority, causal reasoning, arguments by analogy, and various forms of moral argument), argument structures (the ways in which reasons presented in defence of a standpoint relate to each other), fallacies (seemingly valid arguments, or arguments that otherwise damage the quality of argu-

mentative discourse), and the argumentative conventions of special fields (e.g., law, politics, science). (van Eemeren 2009)

Following Toulmin (1958) and Perelman (1958), the precursors on natural-language argumentation, the American school of informal logic has introduced a collection of approaches to the study of reasoning in natural language. The major perspectives to such study include rhetorics, dialectics and dialogue. The rhetorical perspective highlights persuasive processes in argumentation. Accordingly, the standard criteria for good argument presume premises that are relevant to the conclusion and sufficient to establish it as at least acceptable (Johnson & Blair 2000). The dialectical perspective views argument in the framework of dispute and debate. The best-known dialectical approach is the pragma-dialectical theory developed by van Eemeren and Grootendorst (1992). It considers argumentation as a procedure for resolving differences of opinion by following particular rules of critical discussion. Pragma-dialectics is based on speech act theory, and its system of analysis includes five steps considering speech acts from a functional, interactional, propositional, and dialectical perspective. The dialogue theory focuses on variation in the conventions of dialogues of different types and in different fields (see Walton 2007).

Many contemporary theories of argumentation/informal logic are characterized by a relativist tendency, i.e. an increasing shift of emphasis from considering argumentation as a means for the establishment of truth to that of seeing it as a method of persuasion. Moreover, the trend among theorists seems to be to consider induction and also conduction instead of deduction as the basic processes of natural-language argumentation. Thus, it seems, that similar to the conception of knowledge in general, argumentation theory in particular is influenced by the two rival philosophical ideologies of modernism/post-positivism and postmodernism/constructivism.

In the present study, AS were identified as groups of propositions which can be represented by the basic formulae (Winter 1986) 'evaluation-basis' and 'evidence-conclusion'.

3 Findings

Our investigation confirmed that the initially presumed four textual processes contribute to the generation of scientifically acceptable knowledge claims

derived from participant narrative. These processes included 1) information transfer and knowledge construction through author/researcher involvement; 2) persuasion/argumentation; 3) generalization; 4) abstraction/transcription of participant data into the language of the discipline. We found that these processes were pervasive and intertwined throughout the FRS. Processes 3) and 4) are frequently at work whenever PN is mediated through the researcher. However, they seemed to be most prominent in the discussion section. In the following sections we discuss processes 1) and 2) and comment on 3) and 4) where relevant.

3.1 Information transfer and knowledge construction through author / researcher involvement

The researcher is the mediating mind for the articulation of the research findings. It is through the researcher that the target information becomes institutionalized and turns into the property of the scientific community. According to our observations, the degree of involvement by the researcher varied from mere reporting of participant narrative (PN) to inferences made from it. The interim degrees of author involvement included describing participant experience/behaviour/attitude (PE/PB/PA) and interpreting the meaning of PN. Figure 1 below illustrates this continuum, which, with the text-external phenomenon of PE as a starting point, ranges from author detachment to increasing degrees of author involvement. The continuum also represents the process from the authenticity of participant utterance to increasing levels of ownership of the text by the author. In the following, we will describe each of these types of FRS in detail.
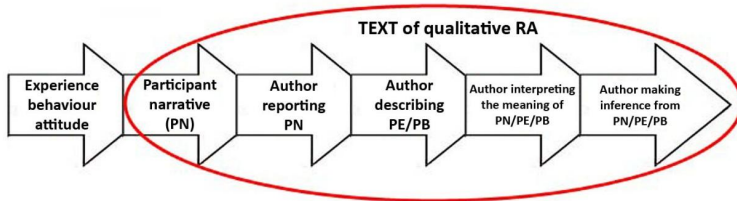

Figure 1.   Categories of finding-related statements from author detachment to author involvement

3.1.1 Reporting participant narrative (PN)

We categorised an FRS as reporting when the author referred to PN by using reporting verbs such as 'described', 'reported', 'identified', 'talked about', 'expressed', 'revealed'.

> (1) Children on peritoneal dialysis described frustration about the risk of infection, resulting in restrictions from swimming... . (Source: Text 1)

Reporting was assumed to incorporate a minimal amount of author involvement because it does not necessarily involve changes other than grammatical adjustments as required by reported speech. The incidence of the reporting type of FRS in our data was 22% of all findings-related statements.

3.1.2 Describing participant experience (PE), behaviour (PB) and attitude (PA)

An FRS was categorized as describing, when the author assumed a more subjective approach and, instead of merely reporting PN, set out to describe PE, PB or PA on the basis of the PN obtained in the study. The extent of researcher involvement was considered to be higher in describing PE and PA than in reporting PN, because when describing, the author takes the liberty of making a statement about a participant's inner state of mind and emotions with no reference to the original PN. Descriptive statements about PE and PA when not followed by a supporting quote from PN may leave the reader with the question 'But how does the author / researcher know?' (Example 2 below). Unsupported descriptive statements about PB, however, appear to be less subjective because there is always the theoretical possibility that such behaviour has actually been observed. Alternating between reporting and describing when introducing findings is probably a strategy adopted by the author to avoid textual monotony, and to provide the reader through the text with an insight into the real world of PE. From the perspective of validation, however, the acceptability of unsupported descriptions of PE may be questionable. Descriptions of PE/PA were introduced by phrases such as 'participants felt / experienced / were anxious about/ were concerned about / perceived'.

> (2) [T]ransplanted children *viewed* life with a transplant as "more normal" than being on dialysis. For some, this *entailed* greater ease and/or certainty in that the transplant *was perceived* as offering a greater predictability of normalcy … . (Source: Text 1)

Describing was used by the authors of our data as often as reporting, namely in 22% of FRS. In this corpus 41% of all descriptive FRS contained unsupported descriptions of PE.

As illustrated by Examples 1, 2 and S3 in Example 7, qualitative researchers when reporting PN and describing PE/PB/PA frequently formulate FRS, which identify and conceptualise similarities in PN. The generalising function of such comparisons is indicated by either an indefinite plural noun in reference to the participants or the use of the passive voice. The generalising effect is, however, ambiguous because it is not clear whether the reference is made to all participants or to a considerable number of participants; the former states a fact with no effect of generalising while the latter constitutes a generalisation.

3.1.3 Interpretation

An FRS was defined as 'interpretation' when the author assigned in it a meaning to PN/PE/PB:

> (3)   In addition, Penny's judgment that she had not stayed "really really low" *suggests* that she is making a distinction between instances in which people are very depressed for an extended time…, and instances in which they are "low"… . (Source: Text 3)

We also included in this category more analytical interpretations of the meaning or effect of PN. (Example 4) This type of interpretation seems to incorporate validation because it refers to the textual and linguistic features that are expected to justify the claims made of the respective extract of PN.

> (4)   In lines 1–9, Ellen implicates both herself and her physician as possibly being irresponsible in the use of antidepressants ("we could always find excuses to keep me on . . . medication")… . (Source: Text 3)

Interpretation by definition involves a judgement by the interpreter. Accordingly, it is not likely to occur without the interpreted utterance being introduced (reference to 'In lines 1–9' in Example 4). Interpretation occurred in 15% of the FRS of this corpus.

3.1.4 Inferencing

This category was defined as a cognitive act of drawing associations (e.g. analogical, logical, categorical and comparative) between objects, notions, claims and phenomena:

(5)   Another rhetorical *strategy used by interviewees was to question the need* for, or ne-
       cessity of, taking antidepressants… . (Source: Text 1)
(6)   Specifically, the following constituents emerged as central to this experience: (a) ac-
       cepting the changed other… ; (b) taking action in challenging circumstances; (c) rec-
       ognizing the ongoing, … ; (d) feeling isolated… (Source: Text 3)

The above two FRS represent typical inferences in our corpus. We classified
them as inferences because they manifest conclusions made on the basis of data
analysis. Instead of illuminating logical (causal, conditional, consecutive) associ-
ations between entities, these inferences are primarily descriptive, comparative or
categorical and include an element of generalising. Mayring (2007) includes ob-
servations by systematic comparison in generalisations acceptable within the
constructivist paradigm. These inferences are often the products of the organising
principle arising from the method applied and, particularly when appearing in the
discussion section, they involve abstraction and a change of register from partici-
pant language to that of the discipline. The descriptive and organising character
of such inferences was understood to reflect the social constructivist conception
of knowledge as an accumulation of perceived experience. Inferencing was a ma-
jor category in our corpus, constituting 41% of the FRS.

3.2 Argumentation as a process of knowledge production

3.2.1 Types of AS observed in the corpus

We proceeded by scrutinizing the contexts of FRS, namely, whether they were
followed by supporting quotes from PN or not. In this corpus, 45% of the FRS
was argumentative, i.e. supported by a quote from PN. Figure 2 presents the var-
ious types of support for different kinds of FRS.

Figure 2.   Types of AS distinctive of qualitative writing

In qualitative RA the dominant type of evidence produced to support findings-
related knowledge claims seems to be PN. This is naturally so, because research
findings are findings drawn from the data used, which in qualitative research is
obtained in the form of PN. An interesting observation was, however, that the

FRS were followed either by direct quotes from PN, reported quotes, or both. Example 7 presents a pattern with a knowledge claim (two interrelated inferences) supported by a reported and a direct quote below.

(7)   [S1: Inference] Waiting in this case was more or less a constant vigilance. [S2: Inf]This became particularly evident when a participant was physically with the other. [S3 Rep quote:] Participants described having to watch for subtleties, things that might even go unnoticed by more casual observers. [S4 Introductory clause:] One participant described the watching and waiting as follows: [S5 Dir quote:] *It is sort of, is like just this continuous watching of her reactions to things and, yeah, ...* (Source: Text 4)

3.2.2 The textual role of quoted participant narrative (PN) in AS

From the observation of the above types of sequences, which structurally conform to the basic 'evaluation-basis'/'evidence-conclusion' patterns of argumentation, a question arose regarding the actual role of the quoted or reported extracts of PN in these sequences. We identified four functions of quoted PN in our data. 1) **Illustration to provide partial support for the claim**: Reported PN with a reference to what all or most participants had said was as a rule supported by an example which reported what one participant had said (see S3 in Example 7). This seems to be the only possibility for supporting generalizations in qualitative study because qualitative research does not produce any statistical evidence and all data cannot be presented to the readers due to its 'languaged' nature. Examples, however, can only partially support the validity of the claim made. 2) **Authentication to provide a rich and thick description of experience:** Reported PN of one participant was not infrequently followed by a direct quote from the respective narrative. Informatively, and from the perspective of establishing the validity of the claim, these structures involve redundancy. It seems that such quasi-argumentative structures are created in qualitative research reporting *to satisfy the paradigm-specific requirements of authenticity*, and to provide a rich description of experience. Example 8 below illustrates the case:

(8)   One participant, for instance, indicated how much she enjoyed learning about her medical condition. She relayed how this reflected her thirst for knowledge and her curiosity regarding medication treatments… . She said, *Because I'm sick so much, I've learned so much in the hospital—hands on, experiencing it myself.* (Source: Text 1)

3) **Validation:** It seems that directly or indirectly quoted PN serves a truly validating function only in AS with a non-generalizing FRS describing PE/PB/PA. A validating relationship between a claim and the supporting argument can be con-

firmed by testing if it is possible to introduce the argument by saying, 'I claim this to be true on the grounds that a participant(s) said ...'. In Example 9 below, the test confirms the validating effect of the quote.

>(9)   She curtailed her exercise whilst pregnant (although she did walk several miles each day) but had to rationalize with herself to be able to do so: *('I claim this to be true on the grounds that the participant said ...')* "I'd stopped like proper exercising, weights and biking and stuff like that at about six months and then I thought OK we'll just see this as a little retirement. You can start it all up again… . (Source: Text 7)

4) **Transparency to attain acceptability:** Interpretation is usually preceded by a quoted or reported extract from the target PN, or both. Thus, it structurally constitutes a sequence reminiscent of the argumentative 'evidence-conclusion' pattern, but, because interpretation is inherently acceptable as subjective evaluation, validity becomes an irrelevant issue. Thus, it seems that by providing the readers with a pattern consisting of an extract of quoted and/or reported PN and an interpretation of that extract, the author makes transparent the process that led to the respective interpretation. (See Example 3) Transparency allows the readers to judge the compatibility of the researcher's interpretation with their own understanding. Alternatively, the authors could have presented their understanding of the meaning of PN as an authoritative knowledge claim.

The above discussion shows that even though structurally consistent with the argumentative formula, sequences with FRS accompanied by extracts of quoted/reported PN are in many cases semantically only quasi-argumentative. Even though such quasi-argumentative structures have a desirable persuasive effect (illustration, authentication, transparency), their lack of validating force may be due to the 'languaged' nature of the data used; quoted/reported PN as an extract of natural language may not support but some aspect of the claim made, it can only provide evidence for the existence of one instance of a phenomenon, and its supportive force is a matter of interpretation. The fact that these quasi-argumentative patterns of reasoning are accepted by the research community reflects the constructivist/relativist view of argumentation, which holds that validation need not be the aim of argumentation because true knowledge is a relative conception (see Perelman 1958 for 'audience acceptability').

4 Conclusion

In this study we have identified four textual processes as inherent to qualitative knowledge production: 1) information transfer and knowledge construction

through author involvement; 2) persuasion/argumentation; 3) generalization; 4) abstraction/transcription of participant data into the language of the discipline. A full description of these processes may contribute to the development of a model of qualitative research writing. Due to limitations of extent, this article provides a more detailed description of the first two only. Besides identifying these processes, our major finding was that instead of aiming at validation, the argumentative patterns of qualitative writing often serve persuasive purposes such as authentication, illustration and transparency, which suggests a relativistic conception of knowledge. A similar relativistic or even ideographic view of knowledge could be seen in the abundant descriptions of PE with no reference to PN. Such author-dominated approach implies that the author's understanding of the target phenomenon is as valuable as that of the participants. One finding that seems to conform to the constructivist appreciation of consensus as a source of knowledge, but which is ambiguous from the aspect of the small number of participants/cases typical of qualitative study, is the prominence of generalisation in our corpus (see Lincoln & Guba 1985 versus Campbell 1986, Mayring 2007). These findings arose from research articles in nursing science. Further research should confirm their applicability to qualitative research reporting in other disciplines.

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