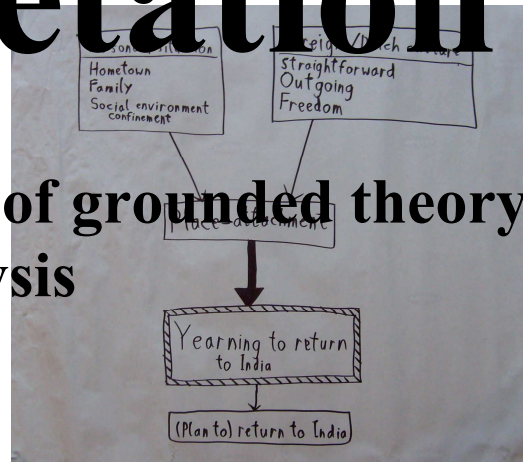
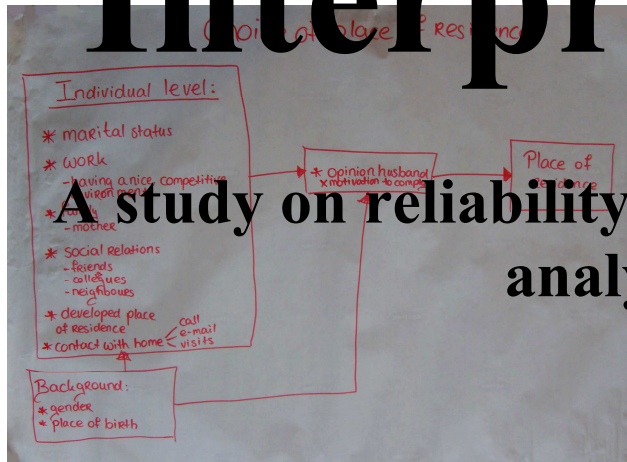
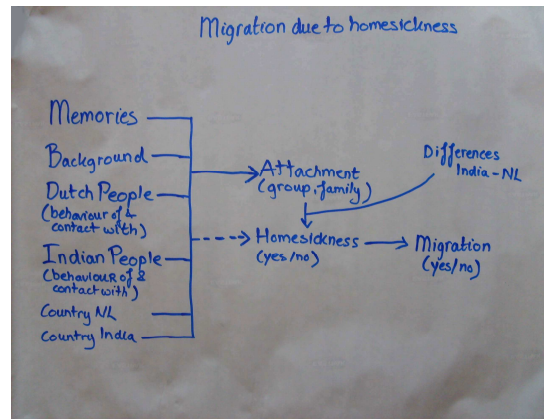
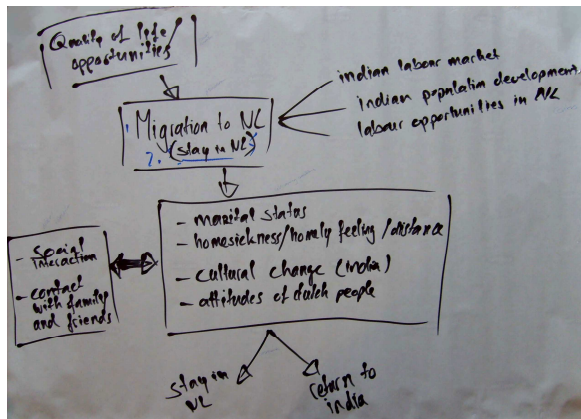


A matter of Interpretation



A study on reliability of grounded theory analysis



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 2009

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2009

Preface

It is always hard to make decisions, especially when you are asked for a topic to write your master thesis about. I really like to switch subjects a lot, what became apparent when I wrote my Individual Research Training for the Research Master. Time went by, the pile of research proposals grew just like my frustration. In the end I decided to conduct a research about transnational identities among Indian students in Groningen. The problem however was that I was quite critical towards all methodologies I wanted to use. One of my supervisors, Prof. Dr. Inge Hutter, asked me if I would like to do my master thesis about qualitative research methodology and I thought it was a nice challenge. Since then I feel much relieved because I like this field a lot. I think it brings us to the very essence of qualitative research: interpretation.

First of all I would like to thank Prof. Dr. Inge Hutter for helping me to get ‘back on track’ when I was stuck. Also I would like to thank Dr. Ajay Bailey, my second supervisor and all other people of the Population Research Centre who have helped me; especially Dr. Fanny Janssen for some emotional support and Prof. Dr. Leo van Wissen for continuously emphasizing how limited a master thesis is, during our Research Proposal and Study Design course.

Furthermore I am so grateful for all my great study mates, the support I got from them and all the nice things we have done throughout the years. Off course I would also like to thank my parents so much for financial and emotional support during all the ‘ups and downs’ and also my brother Arjen who is always there for me when I need him. Studying in Groningen has been an amazing experience and I really enjoyed every single day of it thanks to all my friends and especially to Chris. Thank you all so much!

Abstract

Questions about reliability of qualitative research methodologies are often posed. In this research, the reliability of interview analysis with grounded theory methodology is described. The central question of this research is: *How reliable is grounded theory analysis according to the methodology of Strauss and Corbin (1990)?*

Grounded theory is a methodology whereby theories are built in an inductive way and consist of three phases, namely the open, axial and selective coding phases. In open coding, the interview is summarized in concepts as inductively as possible. Afterwards these concepts are summarized into 'categories'. In axial coding these categories are placed in a set of possible relationships; the 'paradigm model'. Finally one 'core category' is chosen in selective coding and a theory is constructed.

Reliability can split up into two concepts; 'consistency'; similar elements in case of repeated observation and 'variability'; diverging elements in case of repeated observation. Variability can be inductive or deductive in that the interview can be analyzed by 'staying close to the text' or by using pre-defined theoretical knowledge. The assumption here is that inductive variability is more reliable than deductive variability, because the range of diverging ways in which the interview text can be analyzed is more limited when staying close to the text.

Reliability is measured by conducting a group experiment whereby six participants analyse one and the same interview by grounded theory methodology. Furthermore, the theories are presented, mutually compared and a group discussion is conducted on how inductive or deductive the analyses of the participants are.

The main outcomes of the experiment can be divided into five aspects; the first two caused variability and the last three were consistent but remarkable. First the disciplinary backgrounds of the participants and to a lesser extent the personal background influence the way an interview text is interpreted and which elements are emphasized. Secondly, some participants immediately start thinking deductive while reading an interview, while others work more inductive and stay close to the text. Third, while the interview is analyzed, the participants seem to forget their previous codes, except for one participant. This can be prevented by creating an overview with used codes during analysis. Fourth, the paragraphs in the interview seem to influence the codes in that one code is ascribed to one paragraph. Finally, the questions in the interview influence the coding because the question is directly summarized into a concept or the question is directly answered.

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1 Introduction

Imagine six people read the same text. Probably this would result in six different interpretations. One text can be read in innumerable ways even by the same person, not to mention different persons. Everyone reads a text, and observes the world around, selectively (Brockmeier, 2002).

This interpretation is not solely done in daily life, but also in qualitative interview analysis. Diverging interpretations are hard to avoid, but at the same time problematic for the issue of reliability in qualitative interview analysis. Reliability can be defined as *“That quality of measurement method that suggests that the same data would have been collected each time in repeated observations of the same phenomenon.”* (p.143, Babbie, 2007). However, is the analysis not just a subjective interpretation from the perspective of a researcher? Is it not just coincidental that a certain conclusion is drawn from a qualitative analysis? This is the main topic of this research; reliability of qualitative interview analysis.

The most important argument for the relevance of reliability is the strive for objectivity. Objectivity is a crucial element in scientific research; it is the reason why an audience would believe in an explanation, description or clarification other than out of respect for the author (Kirk, Miller, 1986). However, objectivity is not only realized by reliability, but also by validity. Still, in qualitative research validity has always received lots of attention in contrast with reliability (Kirk, Miller, 1986). Therefore it is highly relevant to get to know more about this additional concept in order to enhance the rigor of grounded theory methodology.

Here one form of qualitative research analysis is chosen, namely that of grounded theory. This can be defined as:

“a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building inductive analysis from the data. Hence, the analytic categories are directly ‘grounded’ in the data. The method favors analysis over description, fresh categories over preconceived ideas and extant theories, and systematically focused sequential data collection over large initial samples. This method is distinguished from others since it involves the researcher in data analysis while collecting data – we use this data analysis to inform and shape further data collection. Thus the sharp distinction between data collection

and analysis phases of traditional research is intentionally blurred in grounded theory studies.” (p.608, Bryant, Charmaz, 2007).

This data collection process will not be taken into consideration here and focus will only be on data *analysis*, in order to keep the comparison feasible.

The choice for grounded theory is because of its clarity in several analysis phases. Together with the inductive character, this methodology seems to be quite reliable and can simultaneously be assessed on this aspect as well. Besides, grounded theory can be seen as more reliable than other qualitative methodologies like discourse analysis in that its steps can be traced, and more valid than other qualitative methodologies like content analysis in that the data is not forced into a theoretical framework at the same time (Liamputtong, Ezzy, 2005). Apart from that, grounded theory has increased in popularity throughout several scientific disciplines (Clarke, 2005), of which Demography is one.

However, the field of Demography in particular is traditionally quite quantitative (Bruijn, de, 1999). *If* qualitative methodology is applied within the discipline, questions regarding validity and reliability of the data collection and analysis are often posed. An examination about reliability in qualitative research analysis, through grounded theory, is an important contribution to the existing knowledge and especially the application of qualitative research methodologies. This research can contribute in scrutinizing grounded theory analysis on the one hand and enforcing the application of the methodology in this field on the other hand.

However, there are many types of grounded theory methodology. All types have their origin in the work ‘The Discovery of Grounded Theory’ of Barney Glaser and Anselm Strauss. After this cooperation the two ‘founding fathers’ developed their own methodologies which is further described in the ‘background’ section. Here, the methodology of Strauss is chosen, because this approach is less positivistic than the one of Glaser and somewhat more towards social constructivism (Clarke, 2005). This is nowadays a more accepted epistemological way of seeing the world in the discourse of the qualitative social sciences.

Furthermore, postmodernism has entered into grounded theory in recent years. Kathleen C. Charmaz has introduced constructionism into the field (Puddephatt, 2006) and Adele Clarke postmodernism (Clarke, 2005).

In this research the book ‘Basics of Qualitative Research’ from 1990 by Strauss and Juliet Corbin is used, since it is appropriate for group experiments because the methodological steps taken are clear, rather chronological and it is easy to learn for novices. The postmodern

methodologies are somewhat more complicated to apply in group experiments. Therefore the main research question will be:

How reliable is grounded theory analysis according to the methodology of Strauss and Corbin (1990)?

To answer this question, one group experiment is conducted in this study. Hereby six researchers separately analyse one similar interview on a demographic subject. The similarities between the analyses, or in other words the reliability is examined, which is the first subquestion:

1. *Which main consistencies can be found in the three coding phases when grounded theory analysis is conducted by several researchers?*

In the methodology of Strauss and Corbin, the analysis process is conducted in three phases, namely open, axial and selective coding. In open coding, the interview is summarized in concepts as inductively as possible. Afterwards these concepts are summarized in the somewhat more abstract 'categories'. In axial coding these categories are placed in a set of possible relationships, which is called the 'paradigm model'. Finally one 'core category' is chosen in selective coding and a theory is constructed.

Thus, similarities are detected per coding phase, just as differences, which can be seen in the following subquestion:

2. *Which main forms of variability are apparent in the three coding phases?*
 - a. *In which coding phase does the major variability start?*

The differences, or variability, per coding phase can be categorized into several forms. For example in the open coding phase when the interview is summarized in concepts, these concepts can consist of many or few words, they can be used only once or several times, they can be literally from the interview text or not, etcetera. This second question on variability contains all unreliability, since all *differences* between the participants are examined. It is relevant to better understand this unreliability in its different forms. This is examined per separate coding phase and the coding phases are compared in order to detect in which phase major variability becomes apparent.

Furthermore it is important to examine the inductiveness per coding phase and of several coding phases in comparison, because this is the characteristic and distinctive element of grounded theory analysis. This is the third subquestion:

3. *How inductive is the variability per coding phase and of several coding phases in comparison?*

Finally the objective of this research is:

Get more insight into reliability of grounded theory analysis in demographic research in order to enhance the rigor of this methodology.

In this research, at first grounded theory and reliability will be introduced and the several aspects will be described. Afterwards issues about induction and deduction are examined and a description is given on how reliability of grounded theory analysis is measured and operationalised for the group experiment. Afterwards, the results of the group experiment are examined and discussed and finally the main outcomes and insights are given in the conclusion and discussion.

2 Background and Theory

This chapter emphasizes on background information and theories from secondary literature needed to answer the research question. First the general history of grounded theory and secondly the specific methodology of Strauss and Corbin are explained. Afterwards the concept of reliability in quantitative and qualitative research is explicated. Thirdly grounded theory and reliability are combined. Finally the most essential elements are summarized in the conceptual model, which is the foundation of this research.

2.1 Grounded Theory

2.1.1 Grounded Theory Background

In 1967 Barney Glaser and Anselm Strauss wrote the book ‘The Discovery of Grounded Theory’. In this book Grounded Theory is used for collecting and analysing qualitative data and in fact this was one of the first attempts to systemise both these procedures (Strauss, Corbin, 1990).

In quantitative methodology, theory is used in a deductive way. At first a theory is adopted, hypotheses are formulated and these are tested with the data. However, in Grounded Theory, theory comes into the picture the other way around. The data are analysed resulting in an inductive theory, i.e. a theory is derived from the data. However, although some theory from literature is used before the coding process in for example creating a research proposal and conducting interviews, the analysis of these interviews should be an open creative process in which new issues that appear important, and thus ‘emerge’, should be added to the already existing theoretical knowledge (Strauss, Corbin, 1990).

Inductive theory formation is the basis for all grounded theory methods. However, much debate has arisen in the field ever since. The most elaborately discussed issue was between the founding fathers Glaser and Strauss themselves who had both developed their own grounded theory methodology (Kelle, 2005). Glaser accused the methodology of Strauss for ‘forcing of data’, because the latter had created a theoretical model for inserting categories which was highly influenced by pragmatism, meaning action was the central element. According to Glaser this was a too narrow frame for interpretation and he offered ‘coding

families’ as an alternative. Here the data could be centred on several elements derived from various social sciences (Kelle, 2005).

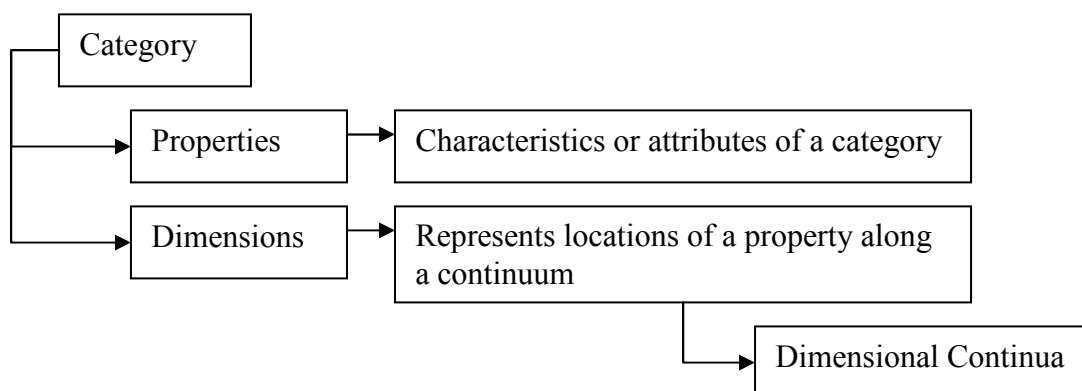
Here the methodology of Strauss and Corbin is applied, because this approach is less positivistic than the one of Glaser and somewhat more towards social constructivism (Clarke, 2005). This is nowadays a more accepted epistemological way of seeing the world in the discourse of the qualitative social sciences and gives the opportunity for a plurality of interpretations of the same data.

2.1.2 Grounded Theory according to Strauss and Corbin

In 1990 Strauss and Corbin wrote the book “Basics of Qualitative Research; Grounded Theory Procedures and Techniques”. The book is appreciated for its clarity especially for novices in grounded theory application (Kelle, 2005).

According to this book the whole process of grounded theory application can be summarized by three basic steps, namely open, axial and selective coding. The first open coding phase is characterized by the coding of words, sentences and paragraphs. Coding means the application of an analytical concept to data. This concept should be ‘broad enough’ in order to be used multiple times. Subsequently some concepts are used more often than others or seem to be theoretically more important than others. This is also called ‘theoretical sampling’, a term that returns in every phase of the analysis. Hereby an expanding amount of data is collected about certain concepts and their interrelationships are examined and charted until saturation is reached. However, if some concepts seem to be more important than others in the open coding phase, they are called ‘categories’. Categories have properties and dimensions (Strauss, Corbin, 1990). This is displayed in figure 1.1.

Figure 1.1 Categories with properties and dimensions



Source: Strauss, Corbin, 1990

To give an example, here is a small part of an interview. The (R) is the researcher who asks questions and the (I) is the interviewee, an Indian who lives in The Netherlands.

“ (R) Do you feel at home here, in The Netherlands?”

“ (I) Yes, I do”

“ (R) And why’s that?”

“ (I) Because, since ten years I’m away from my parents. I have stayed in hostels and in Germany then here. I’m very much acquainted with this lifestyle. So I don’t miss my home. Of course I miss my parents. Occasionally I visit them. But I feel very much like home here”.

A category that can be applied here is ‘feeling at home’. Subsequently, some possible properties are ‘intensity’ and ‘form’. For the property ‘intensity’ the dimension can range from ‘not at all’ till ‘totally’, because a person can feel not at all till totally at home in The Netherlands. This person is in the middle and feels ‘very much at home’; however he does miss his parents. For the property ‘form’, the dimensional continuum can range from ‘rationally’ till ‘emotionally’. The first is applicable to this interviewee; he likes the lifestyle which is quite rational when it is opposed to the emotional missing of parents. Now, when more questions are posed about ‘feeling at home’, more properties can be ascribed which would deepen the understanding on this concept. For example, does this feeling change in time or to which things in The Netherlands is the interviewee emotionally attached, etcetera. The ascription of categories is applied in the group experiment, but both properties and dimension are not applied in order to keep the explanation of the methodology feasible for novices.

In the second step of ‘axial coding’, the main idea is to put all the categories derived into a ‘paradigm model’. This means all the categories are linked to each other by using a certain theoretical framework which determines their relationships. This paradigm model has the following characteristics:

- A) Causal conditions
- B) Phenomenon
- C) Context

- D) Intervening conditions
- E) Action/Interaction strategies
- F) Consequences

The phenomenon (B) is the central element of the analysis and causal conditions (A) are elements that lead to the occurrence of the phenomenon. As a reaction to the phenomenon, certain action/interaction strategies (E) can be adopted with belonging consequences (F). Intervening conditions (D) are issues that can change or prevent the action/interaction strategy and the latter occurs in a certain context (C). If ‘homesickness’ is the phenomenon for example, ‘migration’ could be a causal condition. In a context of ‘loneliness’ this could lead to the action/interaction strategy of ‘having contact with home’ by for example calling by phone or use a chatting program on the internet. The consequence would subsequently be ‘relief’. However, if the person with homesickness ‘returns’ to his or her place of origin, this is an intervening condition that prevents the occurrence of the action/interaction strategy of ‘having contact with home’.

Finally in the third step of ‘selective coding’ a theory is constructed. The most important aspect in this step is the choice of the ‘core category’; the whole theory will be built around this. The final theory can be displayed in a diagram that looks like a conceptual model; boxes with concepts that are connected by lines (Strauss, Corbin, 1990).

Further on, throughout all three steps the act of ‘memoing’ is carried out. Hereby all coding, theoretical and operational thoughts that come up in one’s mind during the three coding phases are written down or typed. Memos always have a date and a name and thus provide a good overview of progression through time.

Besides these three steps of open, axial and selective coding, two other issues are covered in the book of Strauss and Corbin. The first contains the passing of time that is covered with the concept of ‘process’. The second is the application of the ‘conditional matrix’, which is a diagram of circles in which conditions pertaining to a central action are grouped per geographical level. However, in this research we do not further elaborate on these two issues in order to keep the explanation of grounded theory methodology in the experiment feasible for novices and due to time restrictions. Focus is only on open, axial and selective coding; thus whenever ‘grounded theory’ is mentioned in this research, the three phases of open, axial and selective coding are meant.

2.2 Reliability

After this short explanation of grounded theory analysis, the issue of reliability will be explained here, with the main goal to understand its contents. This will be done by giving at first a general, and afterwards a quantitative and qualitative definition of reliability. These are subsequently interpreted for this research on grounded theory analysis.

2.2.1 Reliability Defined

2.2.1.1 Reliability in General

First of all it should be clear what is exactly meant by reliability. In general it can be defined as *“That quality of measurement method that suggest that the same data would have been collected each time in repeated observations of the same phenomenon.”* (p.143, Babbie, 2007). In case one interview is analyzed, a perfect reliability would mean that the repeated application of the grounded theory methodology by several researchers would lead to the creation of exactly the same codes, categories and in the end theories. Another example of perfect reliability is that one researcher analyses one interview over and over again and ends up every time with exactly the same codes, categories and theories. However, the first example is more relevant for grounded theory, because usually variation can be found between interview analyses of different people, and not if one person analyses the same interview over and over again. Therefore the first example is used in this research.

2.2.1.2 Reliability in Quantitative Research

However this general description seems clear, a lot of unclearities remain. The most problematic issue is the *unlikelihood* that repeated measurement will yield exactly the same results over and over again. This is also claimed by Carmines and Zeller (1979) in their quantitative study called “Reliability and validity assessment”. They claim *“...repeated measurements never exactly equal one another, unreability is always present to at least a limited extent.”* (p.11). Despite this insight, the definition given by them still contains the assumption of identical measurement outcomes, namely: *“Reliability concerns the extent to which an experiment, test, or any measuring procedure yields the same results on repeated*

trials.” (p.11). Now the central question is how much variance is enough to say anything about the reliability or unreliability of a measurement. And following to that, if a measurement is always unreliable to some extent, how can it be judged if some detected unreliability is unavoidable and thus ‘normal’ or if it is too much and problematic?

Carmines and Zeller (1979) try to nuance the idea that the measurement outcomes should be identical by using the concept of ‘consistency’. This means: “...*tendency towards consistency found in repeated measurements of the same phenomenon is referred to as reliability. The more consistent the results given by repeated measurements, the higher the reliability of the measuring procedure.*” (p.12). Even though the requirements for reliability are less strict now, the problem remains where to draw the line between consistency and non-consistency.

The authors continue with this problem in a quantitative way, by applying the Classical Test Theory. However this quantitative perspective is in contrast with this qualitative research, some elements clarify the contents of ‘reliability’ and can also be applied in qualitative research. Here only the very basic formula will be used, which is:

$$X = t + e$$

Hereby

X = the observed score

t = the true score

e = the random error

The true score is “*the average score that would be obtained if the person were remeasured an infinite number of times on that variable*” (p.29, Carmines, Zeller, 1979).

And the random error is “*some variance around the mean average score of zero.*” (p.30, Carmines, Zeller, 1979). Hereby more measurements create a better estimation of the true score. However this will always be a hypothetical number because it is impossible to conduct an infinite number of measurements. Finally the ‘consistency problem’ is resolved by statistical methodology, which is not applicable here to this qualitative research.

If this basic formula is applied for the analysis of one interview within grounded theory methodology, what would be the true score then? Probably if several researchers analyse one text, they all end up with different theories which contain some shared insights. These shared insights can then be seen as the true score and are probably not exactly identical,

but consistent. This means some small differences may appear, but if these seem to belong to the same general ideas or insights which are revealed through *discussion*, they are considered to be consistent. However, all the participants need to agree upon the sharedness of these insights in order for them to be really consistent. Further on, the bigger the number of participants, the more reliable the shared insights are. From now on these ‘shared insights’ will be called ‘consistency’, as can be seen in the conceptual model, figure 1.4.

The random error in grounded theory analysis would subsequently be all the *variability* from the consistency. This is an interesting aspect, because it represents the deviation from the consistency, from the ‘mean theory’ and it is the indicator of unreliability. In grounded theory however this variability is always present in some way or another (Clarke, 2005) even without being harmful. This is caused by differences in context and choices of researchers.

2.2.1.3 Reliability in Qualitative Research

These were mainly the quantitative perspectives on reliability and now the qualitative perspectives are given.

Kirk and Miller (1986) define in their book “Reliability and validity in Qualitative Research” three forms of reliability, which are visible in table 1.1.

Table 1.1 Three forms of reliability

Concept	Definition	Page Number
Quixotic Reliability	<i>“Refers to the circumstances in which a single method of observation continually yields an unvarying measurement.”</i>	41
Diachronic Reliability	<i>“...refers to the stability of an observation through time.”</i>	42
Synchronic Reliability	<i>“...refers to the similarity of observations within the same time period.”</i>	42

Source: Kirk, Miller (1986)

The quixotic reliability is not considered to be very useful in qualitative research, because it does not provide much insight into a topic. When for example the same question ‘How are you’ yields the same answer over and over again, namely: ‘fine’, this does not contribute to

our understanding on the well-being of a person. The diachronic and synchronic reliability are assessed as more useful in qualitative research (Kirk, Miller, 1986).

In this research however the interview is already conducted and only grounded theory analysis is taken into consideration. Therefore, in contrast to interview-taking, quixotic reliability can be applied here and because the aspect of time is not included in this research, the other two forms are less useful for application. Besides that, it can be questioned what exactly the difference is between quixotic and synchronic reliability. The first seems to be stricter in that an ‘unvarying measurement’ is required and the second is more flexible, because only ‘the similarity of observations’ is mentioned. However, as explained before, this ‘unvarying measurement’ is never without unreliability (Carmines, Zeller, 1979) and it is the consistency, or indeed, ‘similarity of observations’ that is important for reliability in both quantitative and specifically qualitative research.

Of course there are some differences in reliability between qualitative and quantitative research, as mentioned by Collingridge and Gantt (2008):

*“Thus qualitative researchers who adopt reliable, qualitative methods and conduct their analyses in a competent manner (see validity) are expected to produce results that **enrich our understanding of the meanings that people attach to social phenomena**. This concept of reliability differs from the traditional quantitative understanding in that the focus is not on obtaining exactly the same results time and again, but rather on **achieving consistent similarity in the quality of the results**.” (p.390, bold parts added)*

From this qualitative point of view the grounded theory methodology should result in consistent theories through which meanings that are ascribed to phenomena can be understand. These aspects can be combined with the previous quantitative mentioned concepts of ‘consistency’ in shared insights and ‘variability’ that form together reliability.

The main addition that can be done by this qualitative description of reliability is that consistency should not be judged too literally and strict in the group experiment. In the open coding phase for example, the concepts that are ascribed by the participants of the group experiment do not necessarily need to be identical, but emphasis should be on the similarity of their meaning. The participants should understand the meaning-giving practices of the interviewee. If they all succeed, similarity of quality is present, even though the concepts might be somewhat different.

In short reliability can be split up in, on the one hand a consistency part which is not very relevant to examine further, because this part is already reliable, and on the other hand a variability part. This, on the contrary, is relevant to know more about because it contains all unreliability. However, not all variability is equally unreliable. Inductive variability can be seen as more reliable than deductive variability, because the researcher stays closer to the original text. This is based on the methodology of Strauss and Corbin (1990) and an article of Chiovitti and Piran (2003), who mention a method for enhancing rigour during a grounded theory study, whereby the “*participans actual words*” should be used in the theory (p.427, Chiovitti, Piran, 2003). By using the words of the participants throughout all coding phases, the results are more grounded and credibility is enhanced (Strauss, Corbin, 1990). Furthermore it prevents the misrepresentation or distortion of the original or intended meaning by the interpreter (Chiovitti, Piran, 2003). The use of participants’ words or more or less similar words can be seen as inductive whereby variability is much more limited than in case of deductive analysis. This issue is further explained in the section below.

2.3 Reliability in Grounded Theory

After this explanation of grounded theory analysis on the one hand and reliability on the other, these two aspects are combined here. Not much is written about reliability of grounded theory. However Adele Clarke (2005) does emphasize the plurality of possible interpretations of one text. Simultaneously this leads to different coding, and finally, theories. This might happen due to difference in focus or in research questions. Yet this will probably also happen while using one research question, because deduction is always present in grounded theory analysis to some extent. The idea that pure induction ‘uncontaminated’ by theory can exist is criticized as ‘naïve empiricism’ (Kelle, 2005). Previous knowledge is always present in some way, in any interpretation (Kelle, 2005). Therefore several analyses will never be totally similar, in spite of the most inductive coding possible.

However, this does not mean induction is not possible in grounded theory analysis. On the contrary, it is present to some extent and it is this continuum in which we are interested here.

Moreover, there are some good reasons for the strive for induction. First of all, induction is the basis of grounded theory as can be seen in the first part of the definition from the introduction of ‘The SAGE handbook of Grounded Theory’ (2007).

“a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building **inductive** analysis from the data. **Hence, the analytic categories are directly ‘grounded’ in the data.**” (p.608, Bryant, Charmaz, 2007).

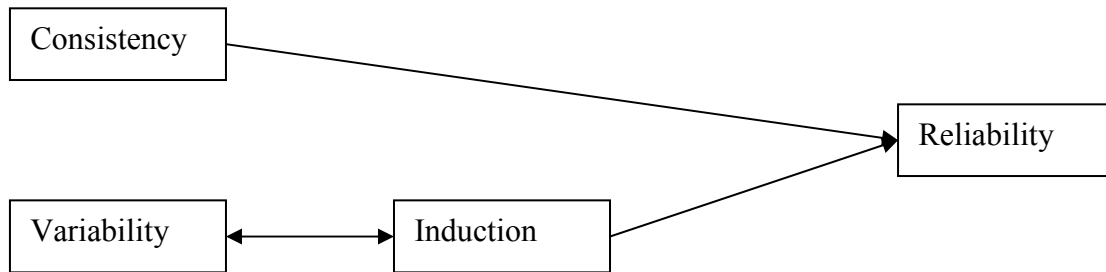
Thus even the name of the methodology refers to its inductive character. Secondly, this induction can be seen as an addition to already familiar deductive methodologies. These are most of the time quantitative methods in which hypotheses are constructed and tested. Thirdly, the researcher is forced to stay ‘close to the text’. The most extreme example for this is ‘in vivo coding’, whereby words in the analysis are literally derived from the interview. The use of more or less similar words as the ones in the interview is less extreme, but can still be seen as inductive, because the researchers stays close to the text. In inductive analysis the range of possibilities to choose from is smaller than in case of deduction. Conversely, this deductive range of possibilities is larger, because theoretical concepts are usually quite abstract and applicable to a wide range of phenomena. Finally, in case of deduction the threat exist that hypotheses are constructed at forehand and data are forced into a theory.

Now, despite the impossibility of ‘pure induction’ there can be searched for the most inductive analysis apparent. Still, a research question is used to give some indication what to look for in the text, in order to restrict the range of possibilities somewhat. Per coding phase all analyses are compared and assessed for inductiveness.

This assessment of inductiveness will only be done on *variability* for two reasons. First, a comparison is useless when applied to consistent and already similar elements. Secondly including consistency is not relevant for answering the main research question, because it is already known that consistency is reliable. On the contrary it is not known yet exactly how reliable variability is. And here the assumption is that the more inductive variability is, the more reliable it is. Therefore this needs to be examined further.

2.4 Conceptual Model

Figure 1.2 Conceptual Model



This conceptual model summarizes the previous discussion and can be applied to grounded theory analysis. Both consistency and inductive variability are assumed to be indicators of reliability. However, the concept of variability is also examined for the purpose of describing unreliability.

Definitions of Concepts

Consistency: *“agreement or harmony between parts of something complex”, “the state or quality of holding or sticking together and retaining shape”* (p.335, Hanks et al, 1986)

Variability: Derived from ‘variable’ which is *“lacking constancy”, “liable to deviate from the established type”* (p.1677, Hanks et al, 1986).

Induction: *“The logical model in which general principles are developed from specific observations.”*(p.25, Babbie, 2004).

Reliability: *“That quality of measurement method that suggest that the same data would have been collected each time in repeated observations of the same phenomenon.”* (p.143, Babbie, 2007).

3 Methodology

In this chapter the methodology of this research is described. Even though methodology solely refers to certain methods that are used, here it is widened with the operationalisation of the concepts that were used in the conceptual model in section 3.1. Furthermore the several applied methods are described in this chapter. These are mainly the group experiment, visual comparison and text analysis. The first is the main topic of this chapter and is displayed in section 3.2. The last two methods are used to analyse the outcomes of the experiment. This is considered to be important here, because clarity in the research process strengthens the validity and reliability of this research. These data analysis methods can be found in section 3.3. Finally the reflections of the whole process are described in section 3.4.

3.1 Operationalisation of concepts

The goal of this research is to get more insight into reliability of grounded theory analysis in demographic research. However, to accomplish this, it is very relevant how the one word ‘reliability’ is defined. In fact, approximately the whole theoretical chapter can be seen as an attempt to find this definition and to understand its contents. Even though unclearities remain in the definitions, they share some aspect. In this research they are named ‘consistency’, which enhance reliability and ‘variability’ which diminish it. Furthermore, variability can vary on a scale ranging from inductive to deductive, with the inductive extreme as the most reliable variability possible. Therefore this can be seen as the operationalisation of the central concept of reliability. However, if the previous definitions (p.143, Babbie, 2007) from the conceptual model are applied to this research, the operationalisation of reliability would be:

That quality of grounded theory methodology according to Strauss and Corbin (1990) that suggest that the same codes, categories and theories would have been collected each time in repeated analysis of the same interview by several researchers.

Several adjustments and additions can be conducted here. First of all the word ‘same’ is not extremely rigorously used here, as can be seen in section 2.2.1.3, because in qualitative research only meaning need to be similar, not the literal words. Furthermore the inductive variability element should be added, which results in the new operationalisation:

That quality of grounded theory methodology according to Strauss and Corbin (1990) that suggest that similar codes, categories and theories would have been collected each time in repeated analysis of the same interview by several researchers. This is called consistency. For variability, its degree of inductiveness indicates the extent of reliability.

This ‘repeated analysis’ should be interpreted as several researchers who simultaneously analyse one interview. It is only meant to emphasize that one interview is analysed several times. Now this central concept of reliability is operationalised, it should also be done with the others in order not to replace the one concept with a set of others about which the contents remain unclear. First of all the definition of consistency (p.335, Hanks et al, 1986) can be adjusted to:

An agreement or harmony between several analyses. The similar codes, categories and theories are collected each time in repeated analysis of the same interview by several researchers.

This ‘agreement’ or ‘harmony’ needs to be detected by the researcher in case of codes and categories, but is indicated by the participant regarding the newly constructed theories. This is further explained in section 3.2 ‘The Group Experiment’.

Secondly variability (p.1677, Hanks et al, 1986) can be operationalised as:

Lacking constancy between several analyses. The opposite of consistency, different codes, categories and theories are collected each time in repeated analysis of the same interview by several researchers.

As said before, all unreliability is in this concept. However, not all variability has to be equally unreliable and therefore it is examined on inductiveness. Induction (p.25, Babbie, 2007) can be operationalised as:

The logical model in which codes, categories and theories are developed from specific words and sentences from an interview.

In all operationalisations the three words ‘codes’, ‘categories’ and ‘theories’ return. These can be seen as the output of the three coding phases of open, axial and selective coding. However, the product of axial coding is not clearly visible here, it is present in the theories. In order to clarify the meaning of the three coding phases, their definitions are given here:

Open Coding: “The process of breaking down, examining, comparing, conceptualizing, and categorizing data.” (p. 61, Strauss, Corbin, 1990).

Axial Coding: “A set of procedures whereby data are put back together in new ways after open coding, by making connections between categories. This is done by utilizing a coding paradigm involving conditions, context, action/interactional strategies and consequences.” (p.96, Strauss, Corbin, 1990).

Selective Coding: “The process of selecting the core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development.” (p.116, Strauss, Corbin, 1990).

Theory: Synonym for ‘Story Line’ “The conceptualization of the story. This is the core category.” (Strauss, Corbin, 1990, p.116,). *Story:* “A descriptive narrative about the central phenomenon of the study.” (p.116, Strauss, Corbin, 1990).

These definitions are already good operationalisations of the concepts. They are used as a fundament for grounded theory analysis in the experiment. Still, some aspects are slightly adjusted.

3.2 The Group Experiment

The central theme of this research is the group experiment, which will be explained here in detail. The traditional reason why an experiment is conducted is the emergence of a clear question on the way one or more independent variables influence a dependent one. All other independent variables are subsequently taken away by manipulation, which should clarify causal relationships of specific independent variables on the dependent one (Denscombe, 1998). The aim of this research is however not to reveal causal relationships between

variables, but to give a *description* of reliability, which is in this case the dependent variable. In order to measure this broad concept, it is split up in two sub indicators of reliability, namely consistency and inductive variability, which in combination measure reliability and therefore can be seen as dependent sub variables. Independent variables and a control group are absent here, which is not very common in traditional science. The reason herefore is that the research objective is to describe variability, not to explain it.

The experimental method is chosen for the purpose of providing a standardized setting, which means the grounded theory analysis is conducted by the participants under similar circumstances, consisting of equal knowledge on methodology, similar data and time resources. Furthermore the selection of participants is also based on their potential comparability, whereby solely research master students from the faculty of Spatial Sciences are participating and despite wide differences between them in disciplinary and personal backgrounds, they have clear resemblances in for instance their academic standards and their experience in the disciplinary field.

Variation of some aspects cannot be controlled by an experimental setting however, like interpretation and application of the methodology, the need for time resources, willingness for active participation and the personal and/or disciplinary background of participants. Some differences, like these, simply exist and can partly explain variability. Emphasis is placed upon disciplinary and personal background in order to explain some variability.

In this section the group experiment will be explained by first describing the data that is used in section 3.2.1, secondly the selection of the participants is motivated in section 3.2.2. Thirdly the experiment itself is elaborated upon in section 3.2.3 and finally the reflections of the researcher are given in section 3.2.4.

3.2.1 Data

As mentioned before, the data that is used for the analysis consist of one interview. This is conducted for a previous study on transnational identification. First a short summary about the case study is given here and afterwards the reasoning for the choice of this interview is displayed.

The main research question of the case study is “*Which emotional transnational identifications do high-educated Indian migrants in the city of Groningen self-ascribe and why?*” This main question is split up in three sub-questions, namely:

1. Which emotional person-based identifications are perceived?
2. Which emotional place-based identifications are perceived?
3. Which emotional time-based identifications are perceived?

Transnationalism can be defined as “...*the* ”process by which transmigrants, through their daily activities, forge and sustain multi-stranded social, economic, and political relations that link together their societies of origin and settlement, and through which they create transnational social fields that cross national borders”” (Basch, Glick-Schiller, Szanton-Blanc, 1994; quoted by Levitt, Waters, 2002).

Fourteen high-educated Indians with ages between twenty and thirty years have subsequently been interviewed in-depth. The shortest transcript of these interviews is subsequently selected for this research, so that the amount of text to be analyzed in the experiment remains feasible. Furthermore, it is better to use a whole interview than certain selections in order to maintain a continuous story and additionally, to prevent a selection bias. The research question is on reliability of grounded theory *methodology* and if similarities and differences in the analysis are caused by *text selection*, this can be seen as a selection bias.

However the original research question is simplified to prevent misunderstandings around the concept of ‘transnational’, which is quite new in the field of Demography and secondly to provide better comparability of the newly constructed theories. This new research question is:

What is the impact of migration towards The Netherlands on Indian migrants?

A subject of discussion might be whether or not to use a research question at all. Here it is used in order to provide some central issue for the participants to focus upon. This has the advantages that the range of coding possibilities is slightly restricted and the results are better comparable. Apart from that, it provides some hold on for the participants which are inexperienced in grounded theory methodology application.

3.2.2 Selection of participants

As the aim of the experiment is to create a standardized setting for comparison of interview text interpretation, participant selection is of major importance, because they are the interpreters who will provide the central information for this research. Six Research Master of

Regional Science students from the faculty of Spatial Science in Groningen are those interpreters for two reasons.

First, the participants have corresponding characteristics, namely knowledge in a similar scientific subdiscipline of Regional Studies and an amount of scientific experience which is fairly alike, and are therefore suitable for comparison. Secondly, they are assumed to be analytically skilled, for they are Research Master students, which is beneficial for understanding and applying grounded theory analysis.

Despite similarities, the participants also have diverging attributes, of which the principal is the nationality of one participant. Maybe accompanying cultural differences are disadvantageous in the pursuit for uniformity, but conversely they are advantageous in representing a more varied pallet of interpretation. The same can be said for the variety of disciplinary backgrounds of the participants, ranging from Planning to Cultural Geography. These specific contexts are taken into consideration during the analysis, however innumerable other differences between the participants remain which cannot be named and analyzed in this research because there are simply too much. In previous research proposals for this research the idea has been to compare participants who have more characteristics in common, like students from the same master with similar nationalities. Research Master students were chosen in the end however because of their expected better analytical skills.

Finally six participants are selected on the one hand, to keep the comparison feasible and on the other hand to remain some comparative control on extremely exceptional participants.

3.2.3 The process

The experiment comprehends several phases of code and category construction, while making memos, putting the main concepts in a paradigm model, creating a theory, present the outcomes to the group to finally discuss about their inductiveness all together. The process has been conducted in two group meetings with the duration of two hours for each, whereby the first meeting was late in the afternoon and the second early the following day. The participants were asked not to discuss the experiment in between the two meetings in order not to bias the results.

The researcher guided the participants through all phases with a presentation and by providing an ‘exercise form’ on which a section from an interview was analyzed to provide an example (appendix 4). Subsequently the participants were able to ask questions on the

example text without biasing each others analyses outcomes of the ‘real interview’ and foremost, they gained fairly similar analytical standards by this exercise, which is again important for comparability. The complete process can be divided into five sub phases, namely open coding, axial coding, selective coding, presenting the outcomes and finally the group discussion on inductiveness.

In **open coding** initial codes are constructed that are subsequently summarized in categories and in the meanwhile memos are made to guide the thoughts of the analyzer. In the first meeting a general introduction on grounded theory was provided by the author of this research, whereby the central importance of inductiveness was emphasized and an example was given on how to ascribe codes to a piece of text. The same was done for the idea of creating memos. ‘Form 1’ was given to the participants that consist of a table with three columns (appendix 5). In the first column the interview is displayed and in the second and third, codes and categories can be filled in. Only the first column needed to be filled in the approximately first hour, whereby solely the text of the interviewee should to be analyzed.

Simultaneously, ‘form 2’ should be filled in; a table with two columns in which two types of memos could be written down, namely code notes and theoretical notes (appendix 6). The first code notes are meant to give information on a code by defining, or by motivating the choice for a certain code, and the second theoretical notes should be written down in order not to forget a valuable thought that comes up in one’s mind on a hypothetical linkage between codes. Memos were made during all phases of analysis. The third form of memoing, operational notes, is not applied here because this is solely valuable in case of analysis of multiple interviews, in that the lessons learned in one analysis can contribute to the quality of the following analysis.

In the second hour of the first meeting, the idea of category application was explained, whereby several codes are summarized into one category, which were subsequently written down in the second column on form 1. Dimensions and properties have not been assigned here in order to keep the analyses feasible for less experienced participants in grounded theory analyses and secondly because it is again particularly useful for concept development in case of analysis among several interviews and thus not for only one. All forms can be found in the appendix, as is indicated between brackets. Form 1 is appendix 5, form 2 is appendix 6, form 3 is appendix 7 and form 4 is appendix 8.

Axial coding means the positioning of codes and especially categories into the paradigm model. Form 3 served as a mnemonic devise in which all relationships from the paradigm model were displayed, namely causal conditions, phenomena, context, intervening

conditions, action/interaction strategies and consequences (appendix 7). This was conducted at the second meeting for about the first hour.

Finally **selective coding** can be described as creating a theory by choosing one category as the ‘core category’, which is usually a phenomenon, and by linking it to other categories. The mutual relationships are already defined by the previous paradigm model, however this is not a necessary condition for placement into the final theory. The final theory is graphically shaped by boxes and arrows. All participants designed their theory on a large sheet of paper, which was suitable for presentation. This was done in the second meeting.

The main idea for presentation of all theories by their creators was first of all to create a mutual understanding of their contents, secondly to prepare the participants for the filling in of form 4 and thirdly to give an incentive for the following group discussion.

After the presentations this group discussion on the inductiveness of all newly created theories was conducted, with the purpose to gain the opinion of the participants themselves on the amount of applied inductiveness in each others and their own theory, in order to prevent a one-sided judgment on this aspect by the researcher. Finally the second meeting was concluded with ‘form 4’, whereby all participants were asked to indicate similar elements between their theory and those of others, with the equal aim to prevent a one-sided judgment on consistency between the several theories (appendix 8).

3.3 Data Analysis

The data which is gathered through the experiment consist of filled in forms, transcripts of the explanation of theories by their creators, the transcript of the group discussion and theories in the form of conceptual models and is analyzed in two main ways. The first is visual comparison for the filled in forms and theories and the second is text analysis, whereby the main themes from the discussion are used to answer the third subquestion on inductiveness.

The first form with codes and categories is used to create two tables, one in which the interview is displayed together with the initial codes of the six participants and a second whereby all initial codes are combined with the categories. In the following visual comparison of the first table, focus is upon several characteristics of the codes; the amount of text it refers to, the amount of uncertainty which is visible by strikethrough which is also displayed in the table, the meaning, the number of times it is used and finally if it is used throughout the whole document. In the second table focus is on the number of categories used, cross-referring of

categories and interaction with codes. In the two tables, this is done for both consistency and variability. All comparisons are between the participants.

The second form with the memos is not used and was especially meant to help the participants in the analysis process. The third form whereby the paradigm model is applied is again converted into a table in which six columns that represent the participants. In the comparison between these six columns, emphasis is on the amount of concepts that is placed into the model and the meaning and the differences in meaning between these placements.

Afterwards the theories are compared based on the amount of elements that is visible in the theories, the choice of the core category and whether or not the paradigm model can be found back in the theory. Furthermore form four is again converted into a table in which the perceived similarities between the participants are displayed in an overview. .

Finally the first three created tables on codes, categories and axial coding, the six theories and the transcripts on the induction discussion are combined to answer the third subquestion on inductiveness. First a within phases comparison is made that means that per coding phase the six participants are compared on inductiveness. Secondly a between phases comparison is made in which the several coding phases are compared with each other, whereby the main themes from the induction discussion are added for a better understanding on this complex issue. Throughout the total data analysis, emphasis is placed upon personal and disciplinary background in order to partly explain apparent variability. All aforementioned tables can be found in the appendix.

3.4 Reflections

The experiment can be seen as a learning process for the researcher, because despite careful planning and organization some things turn out different than expected. First of all the time resources available for analysis were not enough for all participants and it was underestimated by the researcher. Secondly, by providing an example on how to use the paradigm model on homesickness, the results were influenced, because this word appeared more often in the paradigm models and theories than could have been expected by open coding outcomes. Finally it would have been better to ask not only for similarities between the theories in form four, but also for differences.

On the contrary, other elements turned out better than expected. Even though the open coding took longer than foreseen, the theory formation was performed relatively rapid.

Furthermore, the exercise of all coding phases in the practice form was appreciated and useful in preventing major differences in the text analyses.

4 Results

This chapter displays the findings of the experiment whereby all coding phases are described in chronological order, except for the last section about inductiveness, which is cross-referring. Consistency and reliability are both reflected upon in the sections 4.1 on open coding, 4.2 on axial coding and 4.3 on selective coding. Section 4.4 is subsequently on the linkages between the three phases whereby focus is placed on the origin of variability. Finally in section 4.4, inductiveness is examined in two ways, first within and afterwards between the coding phases.

4.1 Open coding

Open coding consists of two steps, ascribing codes and creating categories. Both are of crucial importance for the remaining analyses and in this phase most *choices* need to be made. Even though this might be an unconscious process, some text is coded and some is not, just as some name need to be chosen for a piece of text. Furthermore the choices on codes and categories already limit the range of possibilities on the contents of the following theory.

In the next subsection, the codes of the six participants are compared to each other and in the following subsection 4.1.2 the same is done for categories. For the codes, focus is upon six characteristics, namely the number of codes or categories used, second cross-reference, third the interaction with the interview text, fourth meaning, fifth properties of codes or categories and finally the amount of uncertainty in ascribing codes or categories. At the end of each characteristic, the several consistent and variable aspects that are found are discussed. For the categories, focus is upon the number of categories used, cross-referring and interaction with codes. The participants are indicated by A, with a disciplinary background in Demography, B, specialized in Cultural Geography, C, with Development Studies as specialization, D, a Cultural Geographer, and finally both E and F, specialized in Planning. Descriptions on consistency and variability are illuminated by examples from the tables or discussions.

4.1.1 Codes

4.1.1.1 Number of codes used

The first characteristic is the number of codes that is used. The interview with all belonging codes can be found in the appendix. The first thing that can be noticed is that all participants coded different pieces of interview-text, some coded more than others. In table 1.2 can be found how much codes each participant has used:

Table 1.2 Number of codes per participant and in total

	A	B	C	D	E	F	Total
Number of codes	99	63	54	37	33	124	410

The differences are quite extensive, with the biggest difference of 90 codes between participants E and F. This number is however only the number of times codes have been applied, thus including similar codes that are counted for several times. In appendix 1a all different codes can be found that are used only once per participant and in appendix 1b the codes can be found that are applied more than once per participant, both in alphabetical order. To be placed into appendix 1b, codes should be exactly the same, including the lay-out and the additions between brackets.

A major difference here between participants A, C, D and F on the one hand and B and E on the other is whether or not they repeatedly use one code. Furthermore codes that are repeated are often only replicated once or twice. Participant F is exceptional in that some codes are used five to six times. According to Strauss and Corbin the codes should be used several times, like participant F has done. This cannot be said about the other participants, which might be explained by the fact that during coding the old codes are forgotten and new ones are created, as one participant told during the experiment. Participant F has probably re-read his old codes more often. Another participant indicated that it would be useful to create a list with used codes during coding in order to re-use the old ones more often.

In short important variability is found in the amount of codes ascribed and whether or not codes are repeated. Consistency can be found between replicated codes in the non-frequency of reoccurrence, however participant F can be seen as an exception. The number of times codes reoccur, as participant F has done, might be increased by creating a list

of used codes during coding, and thereby improving the reliability of this aspect of grounded theory.

4.1.1.2 Cross-referring

The second characteristic is the cross-reference of codes, which means the re-occurrence of a code with at least one different code in between. This can only be assessed for codes in appendix 1b for that the codes in appendix 1a are only used once. In table 1.3 all codes are displayed which are cross-referring:

Table 1.3 Cross-referring codes per participant

A	C	D	F
Busy	behaviour people India	births	at home feeling
attitude change	behaviour younger generation India	home	changing attitude
dutch things	career plans	population	cultural difference
Family	cultural differences		diplomatic
Gender	educational background		family
marital status			fast lifestyle
Work			friendly people
			future job
			Indian association
			Indian girls
			marital status
			partner
			PhD
			place of origin
			population growth
			return to India
			social groups
			social interaction
			university

If the intervening code contains the same text as the two similar codes, they are not considered as cross-referring.

Cross-referring does not happen very often in the initial open coding phase with the exception of participant F. The codes in this table can however only have one other code in

between, meaning they are not necessarily returning through the whole interview. A possible explanation for the low number of cross-referring codes might be the manual codes ascription, which means participants forget the previous codes they used as already explained in the previous section. In case of electronic code ascription, a list with previous ascribed codes is visible, that makes it easier to re-use them. Furthermore, as already mentioned, the creation of a list with used codes can be used as an alternative.

The codes that are used more than three times are always cross-referring, which is not very surprising. In fact, the more abstract the code, the better it can be re-used. Furthermore, the cross-referring probably makes the ascription of categories less difficult, but by the use of abstract codes, the ‘richness’ of an interview may be partly lost.

Thus consistency can be found in the degree of abstractness of cross-reference codes. Variability is found in the degree of abstractness of all ascribed codes and how often they are subsequently applied.

4.1.1.3 Interaction with interview text

The third characteristic is the interaction between interview text and codes, to start with the length of interview-texts to which codes refer. The participants were asked to mark the interview text they used for a code by putting a box around this text. This section solely describes the length of the marked interview text sections that are used to create codes. All codes are taken into consideration. Participants A and B used one or more specific words to construct a code and applied this method throughout the whole interview, while participant F began this way, but gradually started using all text of the interviewee as the interview proceeded. The other three participants on the contrary used all interviewee text for coding.

Most of the time codes were ascribed to whole paragraphs of the interviewee, which generally consist of the answer to a question from the interviewer. In the following table this is visible:

Table 1.4 Example on coding per interview paragraph, per participant

	A	B	C	D	E	F
<i>And what are the five first things that come into your mind when you think about India?</i>						
(...)						

Family. Taj Mahal. Five things, What else do I think of when I think of India? People, population. Probably, yeah, one of the most important things. Rapid development.	Indian things (people!)	<u>Place connection to with India</u>	features India	keywords India	Indian's icons	Indian association
<i>Yeah, that's true.</i>			features India (weather)	India weather		growth development
Very, very true. I've just been in India and I experienced a lot of sun probably.			features India (weather)	India weather		Indian association sun
<i>Sun</i>						temperature
A lot, it was 45 degrees when I was at home.						temperature
<i>45!</i>			India weather			
Yeah, amazingly hot.						

Especially participants C, D and F continuously code per paragraph-answer, resulting in summaries of posed questions instead of gaining a better understanding on meaning-ascribing practices of the interviewee. For example, the answer to the first question on Indian associations is coded by five out of six participants with only one code, like 'features India', 'keywords India' or 'Indian association', while much more variety of information is present in the answer than in for instance the weather answers. The latter on the other hand is coded three times by participants C, D and F, solely because every paragraph is coded. This is not noticed by the participant themselves however.

Therefore, better and more information from the perspective of the interviewee could be gained by coding per theme instead of per paragraph, however, focus is on the paragraphs. This is also visible in the appendix 1, whereby each time a new paragraph starts, a whole row of codes becomes visible. The only exception of this general rule is participant F, because codes are applied throughout the paragraphs and this participant has applied most codes compared to the others.

Despite clear instructions in the experiment to ascribe solely codes to the text of the *interviewee* and not the *interviewer*, some questions from the interview that were posed by the interviewer were six times directly coded. Furthermore the questions of the interviewer were sometimes directly answered by a code, for example in table 1.5:

Table 1.5 Example on coding as an answer to an interview question

<p><i>And would you like to, do you return to that place sometimes? I don't know, during holiday?</i></p> <p>Yeah, every year I go there yeah. So while I'm in India, I'm actually most of the time at my hometown, apart from the visiting places, but, mostly I'm with my mother at my hometown.</p>	<p>every year</p>
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This code is answering the question of the interviewer and is rather meaningless without it. Moreover, the questions from the interviewer have a big influence on the choice of codes, which becomes visible in table 1.6.

Table 1.6 Example on influence of interview question on codes, per participant

	A	B	C	D	E	F
<p><i>And how do you look back at the past? How do you see the past? It's quite a difficult question.</i></p> <p>Actually, I am not a person who thinks a lot about what happened. So, okay, it happened, if it is happened, yeah, you think about it for some time, but then you try to come over it. Even if it is good or bad, I don't generally link to that and, okay, keep thinking. Ehw, good or bad, I think it is happened in the past, so.</p>	<p>handling the past</p>		<p>perceptions of time (past)</p>	<p>past</p>	<p>not strongly attached to memories</p>	<p>the past</p>

The interviewee did not mention the word 'past' a single time, still it is mentioned in five out of six codes, which seems to be logical since the text of the interviewee is all about the question that is posed. This has some precarious sides however, in that it becomes questionable if the interviewee is still represented or if the list with questions and the theoretical framework of the interviewer is represented in the codes and following to that, the final theory. In this example this danger is not apparent, because the interviewee really talks about the past, but if the interviewee keeps on bringing a certain topic to the prominence, this

should be coded in analysis and not disappear in ‘question blindness’. The latter means that the researcher who analyses an interview solely focuses upon the questions and topics of the *interviewer* and is thereby neglecting the issues the *interviewee* comes up with. Question blindness might be prevented by keeping the research questions out of the interview and solely analyse the text of the interviewee.

In sum consistency can be found in the focus upon paragraphs in coding and in the influence of interview questions on coding. Variability can be seen in the amount of text or words that are used to create a code.

4.1.1.4 Meaning

The fourth characteristic focuses on the meaning that participants ascribe to a piece of text by codes. The question how close the codes are to the text is reflected upon in section 4.5 on Inductive Variability. Here focus is upon the difference between codes which refer to the same interview-text. In table 1.7 an overview with the most contrasting codes can be found, together with the interview text they refer to.

Table 1.7 Example of contrasting codes between participants

		A	B	C	D	E	F
1	<p><i>Any group you would like to mention. Which group do you feel, yeah, as being a part of? I don't know if you have any specific group.</i></p> <p>Not really, because I think we are more confined to the university and this and that, so it's not that we are very social with other groups here.</p> <p><i>But the university is also a group</i></p> <p>Yeah, so I think, in our, in our... especially with the lab and things, we are really close. We are very good colleagues</p>	<p>attachment to dutch group we = ?</p> <p>attachment to dutch group (with husband attached to</p>	<p>not really</p> <p>university</p>	<p>group attachment</p> <p>group attachment (activities)</p>	<p>confined</p>	<p>feeling of belonging to univ. group</p> <p>not socially attached to community</p>	<p>university</p> <p>social groups</p> <p>university</p> <p>social</p>

	in the lab. We do lot of social things with friends in the lab, so... I think if you ask me in Netherlands, I think your workplace, your lab, I think that's very connect more I think.	lab)	the lab workplace	group attachment	lab		groups social groups social interaction social group
2	Outside of The Netherlands? Yeah, I have quite some friends in The States and few friends in Germany, so friends with whom I have studied back in India and who are now working on their PhD abroad.	foreign PhD friends	Indian migration	friends outside NL	friends	Indian friends outside of Netherlands	the States Germany Social groups PhD
3	I think it's factuality completely different now, because you have a partner, so you really have to think in a very different way. But I think I have not started thinking yet.	partner	future	perceptions of time (future)	future plans	future plan: Going home	marital status
4	<i>And do you feel homesickness?</i> Sometimes yes. Yeah, especially when you're too busy and you didn't call home for like one week or ten days.	busy contact with India	home-sickness	home-sickness (family)	home	Missing feeling	social contact social interaction

These codes contrast in different ways with each other. In part 1 of table 1.7 participant D use the code 'confined', while A, B, C and E code with 'attachment' or 'belonging'. Participant F only mentions the code 'university', which is quite neutral here. This cannot be said about 'confined' on the one hand and 'attachment' or 'belonging' on the other. Somewhat further in the same part 1, participant E claims the contrary of A, C and F, that the interviewee is not socially attached, while the others claim she is.

Participant B codes the text in part 2 as 'indian migration', while the other five ascribe some friendship or social group element to it. The meaning or the central issue of this text is thus not the same for all participants. It is a matter of interpretation that leads to variability.

The same can be said for part 3, whereby two participants see the importance of the partner for the respondent and the other four see future plans in this piece of text.

Finally in part 4, three participants ascribe the meaning of an emotion to the text, while two remain rather rational in terms of ‘contact’ and one codes totally in-vivo. The last option is perhaps the most ‘neutral’, even though there is a word chosen to use as code, but at least it is said by the interviewee herself.

Open coding can thus be conducted in endless ways and as described above in more rational or emotional and sensible ways. Rational analysis is useful to derive information from a text. However, if information is needed on meaning-giving practices, emotional dimensions should also be taken into consideration. It depends on an interpretation of science in general and the definition of valuable information in specific, how open coding is conducted. Subsequently emotions or ‘informative facts’ can be either included or excluded.

A possible explanation for differing text-interpretation and code choice might be the disciplinary background of the participants, thus diverging contexts (Bruijn, de, 1999).

However, there are also interview-fragments that are similarly coded, which is visible in table 1.8.

Table 1.8 Example of similar codes between participants

	A	B	C	D	E	F
Family. Taj Mahal. Five things, What else do I think of when I think of India? People, population. Probably, yeah, one of the most important things. Rapid development	Indian things (people!)	<u>Place connection</u> to <u>with India</u>	features India	keywords India	Indian’s icons	Indian association
<i>Really, really. And about the population, is it like a problem? Or is it more positive, I don’t know...</i> No, I would say it is seventy percent a problem and probably thirty percent in some ways useful.	population problem	Indian population	features India (population)	population	Indian’s population problem	population dev <u>population growth</u>

However, these are the only two cases in which exactly the same word is used by all six participants in their codes. These two words, ‘India’ and ‘population’, are however explicitly asked in the question of the interviewer, which is further explained in section 4.1.1.3; interaction with interview text. Furthermore there are many possible examples in which the

meanings of the codes are more or less similar, however, one or two of them differs or one is missing. In the next section 4.2 is examined if this influences the categories.

In sum, variability between codes is visible through the meaning that participants ascribe to the interview-text. This is demonstrated with the four text fragments in table 1.8.

4.1.1.5 Properties

The properties of codes, the fifth characteristic, can be described as the number of words used and the addition of special attributes. In the appendix the first table can be found with the original interview and the belonging codes of the six participants.

The length of words is only variable for participant E, which is for example visible in the two successive codes:

“not completely feeling at home in Netherlands”

“On the contrary, missing Netherlands’s work-culture as well”

Hereby the codes are more descriptive than conceptual, and by using ‘on the contrary’ a relationship between the codes is created. The other participants did use more concepts composed of one to three words. The longest code used contains seventeen words, but this is an exceptional case:

“Degrees of feeling at home for Indians at Netherlands will be different for married couple & single person”

Sometimes special attributes are added to the codes, like the slash, brackets, Dutch words and the ‘plus’ sign. Even though they may seem irrelevant they do have implications in the further analysis. Especially participant C uses brackets several times as can be seen in table 1.9.

Table 1.9 Example on codes with special attributes by participant C

Interviewer Interviewee	Participant C
Family. Taj Mahal. Five things, What else do I think of when I think of India? People, population. Probably, yeah, one of the most important things. Rapid development.	features India
<i>Yeah, that's true.</i>	

<p>Very, very true. I've just been in India and I experienced a lot of sun probably.</p> <p><i>Sun</i></p> <p>A lot, it was 45 degrees when I was at home.</p> <p><i>45!</i></p> <p>Yeah, amazingly hot.</p> <p><i>Really, really. And about the population, is it like a problem? Or is it more positive, I don't know...</i></p> <p>No, I would say it is seventy percent a problem and probably thirty percent in some ways useful. But I think mostly it is not really very nice, because even though most of them are now educating and things, but you still have lot of competition when it comes to jobs and then many are unemployed and things like that. But I think it is not very nice. But probably in, say thirty, forty years, I don't know, it is already started to be in control. Especially when you see metropolitan cities and things, most of the educated people now they go for like one child. So I think it started to be, but I think it will take long time, because population is so huge...</p>	<p>features India (weather)</p> <p>features India (weather)</p> <p>features India (population)</p>
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In fact this is already a categorisation in the initial open coding phase whereby the most inductive code is displayed between brackets and the more abstract code before the brackets. These three codes were subsequently categorized as 'country India', and it is questionable if this would have happened in case of coding by 'weather' and 'people'. Thus an extra 'level of abstraction' is added here.

Another attribute that has been used six times is the slash:

"India (South / Hyderabad)"

"2 1/2 years study for husband"

"people / group =>

group attachment"

"features India (population / family)"

"going return to India / family background"

"opinion Netherlands / nice place"

The last three of this list are showing an unfinished choice process. According to Strauss and Corbin (1999), it is better to choose one code than combine two, because else it will be confusing and harder to analyse. The reason for the slash might be an uncertainty on which choice to make.

Furthermore, two times a Dutch word was used by participant C, with an accompanying English translation. The practice of good coding might be conducted better in one's mother language, because the exact meaning of a word that is used as code is of major importance for further analysis. The essence of the text is captured in the Dutch word and the best possible translation is given. However, the essence remains in the Dutch word, while doubt exists about the presence of this essence in the English word; probably the reason why the Dutch words remained on the sheet.

The 'plus' sign is used once:

“Dutch people + friendly people”

This can be seen as similar to the slash sign in that not a clear choice is made for one of the two, but they have an equal level of abstraction. An inability to choose might mean a participant wants to prevent a loss of detailed and linked information. In a way this is positive since the analysis remains inductive. On the other hand this is regrettable, because the linkages should be made in later coding phases since it is very hard to re-link already linked concepts. Here it would be better to unite the two concepts in a somewhat more abstract concept like 'perception people'. This shows the practical necessity of deduction in open coding.

Moreover, some codes are underlined in the table and were enclosed in a frame in the original forms, sometimes with some other codes and an arrow in front of it. For example:

*“Attachment people / group =>
group attachment”*

“shock => cultural shock”

*“place connection attachment
to NL”*

All underlined and ‘arrowed’ codes are created by participant B, who already indicated to have some difficulties with the inductive methodology. The difference with the arrow method however is that here the underlined words were nearly always the same as the belonging categories, instead of adding an extra level of abstraction. Categories are thus already constructed in the open coding phase. In the explanation of the methodology however the inductive character of the methodology was clearly explained, so this difference in coding cannot be seen as unreliability of the methodology. Furthermore participant F also underlined three codes, namely ‘population growth’, ‘control over population growth’ and ‘overpopulation’. It is remarkable the first was subsequently categorized as ‘*Indian labour market*’ and the other two as ‘*Indian population*’. These are thus treated as normal codes and do not influence further analysis, however the purpose of this underlining might be to emphasise the importance of these words.

Finally in one code a question was posed, namely:

*“attachment to dutch group
we = ?”*

This ‘thinking out loud’ should actually be done in the memos in order to keep the coding schedule orderly, which has been told to the participants, and is therefore not considered as variability of the methodology.

In sum, consistency in coding properties can be found in concept use of one to three words and variability can be found in the use of descriptive rather than conceptual codes by participant E. Apart from that variability can also be found in the use of attributes, especially the use of brackets, the slash sign and Dutch words by participant C and by underlining certain words in order to emphasise them by participant F.

4.1.1.6 Uncertainty

Finally the sixth characteristic is on the amount of uncertainty in the coding which becomes partly visible by the crossing off of words in the codes or by totally replacing them by the participants. The crossed off words are left in the table 2.1 on purpose, in order to show which differences have been made. Apart from that, the aforementioned use of the ‘slash’ and ‘plus’ sign indicate some uncertainty on the code choice. Furthermore, major ‘invisible uncertainty’

remains on the question how to code, but that is not taken into consideration here. In table 2.0 all codes with strikethrough are displayed.

Table 2.0 Codes with strikethrough

1	perception Dutch link to group
2	Dutch connections Dutch family
3	Dutch family -Dutch connections
4	attitude behaviour people India
5	Dutch attitudes straightforward
6	Difference Indian & Dutch diplomatic
7	non-dutch non-indian people social groups non-dutch non-indian Social groups PhD
8	home difference dutch feeli
9	social interaction distance can't go back distance
10	distance - far away cannot go
11	home sickness
12	Homesickness at home feeling
13	<u>Place connection</u> to with India
14	population dev <u>population growth</u>
15	control over <u>population</u>
16	communication with Indian news
17	contact social groups
18	social contact

Most of the crossed off words are not relevant in content and were simply mistakes, this can be said on 1 and 13. Some other concepts were crossed off and replaced by a similar alternative, as is the case with 4, 14, 17 and 18. Further in 5, 6, 7 and 8 uncertainty existed on the choice on the inclusion or exclusion of 'Dutch', 'Indian' or 'non-Dutch non-Indian'. In the end all nationalities are removed. Finally codes 2 and 3 are generalised, while codes 5, 9, 10, 11, 12, 15 and 16 are brought 'closer' to the interview text, which indicates these codes are made more inductive than they were before.

This means in sixteen out of the 409 codes that have been applied, words are crossed off for reasons of code choice. Additionally in four codes the 'slash' sign is used which can also be seen as an indication for uncertainty in code choice, just at the one time use of the 'plus' sign. Thus all together in 21 out of 409 cases, uncertainty is visible on code choice, which can be seen as another variable aspect of the grounded theory methodology.

4.1.2 Categories

In this section the step from code to category construction is analysed, whereby focus is upon the number of categories used, cross-referring and interaction with codes.

First all different categories, and the number of times each category is applied to a code, are displayed in table 2.1. The categories that are used for cross-reference are shown in italic and underlined letters.

Table 2.1 Categories per participant including number of times ascribed to codes

A		B		C		D		E		F	
background characteristics	6	<u>Interview</u>	4	<u>background</u>	10	<u>personal situation</u>	6	Identity of interviewee	3	<u>Work</u>	16
visiting India	1	<u>future</u>	9	<u>attachment</u>	7	<u>work environment</u>	2	Feeling of belong	2	<u>India</u>	5
dependence on husband	1	group attachment in NL	8	<u>Dutch people</u>	5			Possibility of belong (to community)	3	<u>relationship</u>	5
<u>future plans</u>	4	Dutch people	6	differences India NL	3	<u>Dutch culture</u>	8			<u>social interaction</u>	11
Attachment to work place	3	cultural shock	7	<u>Indian people</u>	8	<u>India</u>	10	culture & influence changing attitude	4	<u>Dutch people</u>	14
social relations	4	<u>Changes in India</u>	12	<u>country Netherlands</u>	6	<u>place attachment</u>	8			<u>homely feelings</u>	14
Opinion Dutch people	4	<u>Place attachment</u>	7	<u>country India</u>	10	<u>future plans</u>	3	Characteristics of attitude	2	cultural difference	5
<u>feeling at home</u>	16	Up to date	3	memories	5			Networking	1	changing culture	10
gender	1							Degree of feeling at home	3	attitude	6
<u>differences India / Netherlands</u>	9							Degree of Missing	2	associations	2
Changes India	10							level of concern to India	3	<u>distance</u>	2
Indian friends	2							Level of concern to Netherlands	1	indian associations	4
<u>Perception Netherlands</u>	5							Belong to home town & family => Feeling of belong	5	Indian labour market	4
Perception India	1									Indian population	8
Future perception India	5									actualiteiten	2
fertility India	4									<u>return</u>	7
										response to return to place of	3

Interest in India	1									origin	
interest in Netherlands	2									memories	2
<u>going back India</u>	13									future perspective	4
coping with situations	1										
Marital status	1										
homesickness	5										
Total: 24	99	Total: 8	56	Total: 8	54	Total: 6	37	Total: 11	29	Total: 19	119

First, the number of codes is examined here. Participants B and E did not use all codes, in case of B because the codes were written under a category and some were forgotten and in case of E, the last few codes are not categorized. The number of categories is for participants A and F higher than for the other participants, because they used more codes. In the next table 2.2 this is visible.

Table 2.2 Number of codes, categories and mean codes per category per participant and in total

	A	B	C	D	E	F	Total
Number of codes	99	63	54	37	33	124	410
Number of Categories	24	8	8	6	11	19	76
Mean number of codes per category	4	8	7	6	3	7	5

In the last row the mean number of codes per category can be seen. The higher this number, the more codes are ascribed to one category. In the last column the average mean number of codes per category can be seen; five. Especially participants A and E apply less codes to their categories than the average of five, namely four and three, while participant B applies the highest number of eight codes to one category. An advantage of extensive categorizing could be that a ‘richer’ theory can be constructed in the end than in case of limited categorizing, because the many categories prevent oversimplification. On the other hand, the overview might be lost in case of too extended categorizing.

Second, it is interesting to examine which of the categories from table 2.1 are cross-referring, because categories are meant to be concepts with higher abstraction than

codes that can summarize the issues of major importance in the interview. The criterion for a category to be cross-referring is the presence of at least one intervening different code, which has been ascribed with a different category than the codes that belong to the category under study.

The most remarkable difference is apparent between participants D and E, whereby the first cross-referred every category and the last none. The other participants are quite similar in their cross-referring. However, a small number of categories combined with a high number of cross-references, like participant C, seem to indicate a different style of working and thinking in the categorization phase, meaning this is more a top-down approach whereby the codes are seen ‘from a distance’ and linked to each other. Hereby the theory is already constructed, while participant E reads the codes chronologically and ascribes categories ‘along the way’.

According to Strauss and Corbin (1990), in this phase the codes are linked with the most relevant concepts, namely categories. It does not mention however exactly how ‘conceptual’ or abstract these concepts need to be which causes variability here that is of crucial importance for further evolution into the final theory.

All together, variability is apparent in the amount of categories applied and in the mean number of codes that refer to one category. Further it is visible in the number of cross-referred categories, which is of major importance for further theoretically development.

4.2 Axial coding

In the axial coding phase codes and categories are placed into the paradigm model which consists of six interconnected possibilities, namely causal conditions, phenomena, context, intervening conditions, action/interaction strategies and consequences. Every condition from the paradigm model is described and compared.

In table 2.3 the filled in paradigm models are visible per participant.

Table 2.3 Paradigm model application per participant

	A	B	C	D	E	F
Causal conditions		Connection/ Attachment with places and groups Cultural differences/ Cultural shock	Migration	Home (family) place- attachment	Temporary Migration due to postgraduate study	Quality of life - opportunities of labour in NL (unclear...)

Phenomena		(feelings of being 'home' / belonging (or not at home) (return to India => future)	Homesickness Attachment	Yearn to return to India	- Home-sickness - Adjustment to new environment	- Migration to NL + - Staying in the Netherlands
Context	- Perception India: - family - social relations - Perception Netherlands - work - marital status - contact with India (visits) - mails - calling - news-papers - online news	Not 100% at home in NL Family (mother) in India	memories background behaviour & contact Dutch people behaviour & contact Indian people country NL country India	personal situation (study, marital status, friends, Dutch connection), Dutch culture work environment	- Strongly attached to family & home town - Married couple / single person - Temporary – future goals - New social networks	- Indian labour market - indian population (development) - marital status / relationship
Intervening conditions	- What does husband want - work	Studying husband for 2,5 year post-doc in NL / work change of mind	Differences India NL		otherness physically away	- home-sickness / homely feeling / distance - cultural change -attitude of Dutch people
Action/ Interaction strategies		being at home planning a return to India	Attachment (group, family)	Plan to return to India	- Keep contact / family member - Keep up dating India news - Getting to know India / Europe - Establish new social network in Netherland - Getting to know	social interaction contact with family and friends

					Netherland & its culture	
Consequences	Going back to India	Return to country of birth in the future	Homesickness	Return to India	Reduce homesickness & start to experience the feeling of belong to Netherland, eventhough not will never be 100% for both	1. Stay in NL / abroad 2. Return to India

First the phenomenon is examined, because this is the central theme of the theory and all other conditions refer back to this. Consistency can be found between participants B, C, D and E in the reference to ‘longing and belonging to a home in India’, which is visible through the use of codes and categories like ‘belonging’, ‘homesickness’, ‘attachment’ and ‘yearn to return’. Participants B and D are from the department of Cultural Geography, which can explain this choice, however, participants C and E are from the subdisciplines of Development Studies and Planning, whereby this choice is less obvious. Participant F is from the department of Technical Planning and focuses more upon ‘rational aspects’, which are ‘migration’ and ‘staying in The Netherlands’, which is clearly different from all other participants. Even though participant E also mentions a diverging aspect, namely ‘adjustment to new environment’, this is less rational and more emotional than the phenomena of participant F and might be caused by the personal migration experience of participant E. Finally participant A did not indicate any phenomenon or causal condition. Therefore four out of five participants ascribed quite consistent phenomena towards attachment and (missing) home.

Secondly causal conditions produce a phenomenon through a causal relationship. Here the results are rather diverging. Participants B and D share a view on place attachment, while participants C and E share a view of migration as a causal condition for homesickness. While participant F sees migration as the central phenomenon, participants C and E see this as the causal condition. Participant F is again divergent in mentioning the ‘quality of life’. The personal context of the participants is again visible here, in that the two participants from Cultural Geography use similar concepts. In general a tendency towards broad theoretical concept choice is apparent here, but in meaning variability is most present.

Thirdly the phenomenon happens in a certain context. The first thing that can be noticed is that all participants, except for B, describe a very broad context, almost applicable to the whole interview. Apart from that, one aspect returns in four out of six cases, namely the marital status. Furthermore three participants mention ‘family’ (A, B, E) and two mention

‘work’ (D, F), ‘social relationships’ (A, E) or ‘feeling at home’/ ‘attachment’ (B, E). On the contrary, variability is visible in concepts like ‘contact’, ‘population development’ and ‘memories’. All together, consistency can be found in the rather broad description of a context with mainly focus upon a social background.

Fourth, the phenomenon leads to a certain action/interaction strategy in order to deal with the phenomenon. Participants E and F emphasise ‘contact with India and in The Netherlands’ as an action/interaction strategy, while B and D mention ‘return migration’. C differs by indicating ‘attachment’ and A has not given any action/interaction strategy. C mentions the ‘attachment’ both as phenomenon and an action/interaction strategy. The others ascribe to the general ‘attachment’ phenomenon, a ‘fight (contact)’ or ‘run (go back home)’ reaction, however, B also mentions ‘being at home’, which is also a ‘fight’ strategy. Even though the concepts are quite variable here, they do refer back to the same general phenomenon.

Fifth, intervening conditions can come in between the phenomenon and the action/interaction strategy. Similar themes that are mentioned are ‘a culture gap’ (C, E, F), ‘husband’ (A, B), ‘distance’ (E, F) and ‘work’ (A, B). ‘Change of mind’ is a theme mentioned only by participant B and participant D has not filled in anything here.

Finally the consequences of the action/interaction strategy are quite similar among the participants, four out of six participants mentioned ‘return to India’ (A, B, D, F) or ‘stay in Netherlands’ (F) and two indicated ‘homesickness’ as consequence (C, E). The last can be caused by the example given during the explanation of the methodology, whereby homesickness was also the consequence.

In short, even though quite some differences can be noticed in the various themes, there are certainly a number of themes that return throughout the whole paradigm model when all participants are compared with each other. Even though these issues are not always placed under the same condition, everybody seems to acknowledge their importance. In general these themes consist of ‘place attachment / home’, ‘culture’, ‘contact’ and ‘return migration’. These terms are in line with the original theoretical model and the influence of interview questions on coding is visible here.

4.3 Selective coding

As a third step the items placed in the paradigm model are transferred into theories which have the form of conceptual models here. The theories can be found in attachment 4 and are compared based on the similarities indicated by the participant themselves in form 4, which can be found in attachment 8.

In table 2.4 these perceived similarities between the theories can be found:

Table 2.4 Similarities between theories according to participants – form 4:

The left column represents the participants who indicate their similarities with the participants in the first row.

	A	B	C	D	E	F
A	x	- attachment with group / family - background respondent - husband - work	- background - attachment to family & friends	- personal situation - home-town - family	- influence of marital status - contact with family	- quality of life / opportunities - contact with family and friends - marital status
B	x	X	x	x	X	x
C	- background is important - contact with people in India is important	- attachment is a very important concept - in the end everything leads to migration / return or not to India - background, differences between & aspects of NL & India are important	x	-background / personal situation is a context factor - Dutch culture / Netherlands as well - attachment leads to return or not	- home-sickness is an important concept - background is important as a context => but more broader and more emphasized by Mita	- migration is an important concept - background (marital status) is a context concept
D	personal background	place attachment phenomenon (yearning/planning to return) foreign culture personal background	attachment (though, more to people)	x	attachment (though, more to people) personal background	foreign culture
E	social relation in individual level	- sense of belonging to home & family will cause homesickness - temporary migration	x	- temporary migration - attach to place	X	- social interaction (is about the same as new social network in mine)
F	Place of residence is the outcome = similar Strong emphasis on	consequences are equal Strong focus on sense of belonging and place of belong => more cultural-	Focus on attachment and place of belonging. Similar = migration	Maarten elaborates on the decision behind her plans to return to India.	Quite a lot of 'open coding'-codes. She sticks to the text. Her main point is about	x

<p>role models; ego. The role of the woman in the relationship. Same thing that I did not put much emphasis on only as 'one culture of many' facts</p>	<p>geographic created. A somewhat different point of view, with a similar intention however.</p>	<p>choice (stay or go)</p>	<p>Similar to my model though more focussed on cultural background of the interviewee</p>	<p>homesickness and how to reduce it or cope with it while my theory is more about decision making process on where to live in the future.</p>	
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Participant B could unfortunately not fill in this form. Attachment and belonging is mentioned quite often, together with background. It can indeed be argued that there is a consistent 'common theory' in this table, however participant F does not 'fit' into the 'attachment' theory.

The items from the paradigm models can be seen back clearly in the theories. However, the number of items included into the theories varies, with the extreme cases of participant D with a very compact and E with a quite extended theory.

A remarkable consistency that can be found between the theories is that all participants, except for participant E, choose 'migration or not' or something similar as the core category. Other forms of consistency can be found in table 2.4. Variability is mainly present in filled in codes or categories that are only used by one participant. Some examples are gender, memories, confinement, freedom, quality of life and labour market. Apart from that, variability can be found in the extensiveness of the theories.

4.4 Coding phase and variability

An important question is in which phase variability starts. The initial codes are quite similar, however variability becomes apparent when categories are made. These concepts continue to return until the construction of the final theories.

4.5 Inductive variability

In this section the inductiveness of the three coding phases are examined. First every phase is separately examined on inductiveness in section 4.5.1 and afterwards inductiveness between the three phases is discussed in section 4.5.2.

4.5.1 Within phases comparison

First the open coding is examined, which is again split up in initial coding and category ascription. To start with initial coding, the most clear indication for induction is the use of ‘in-vivo’ codes, which means words from an interview are literally used as a code.

In table 2.5 the total amount of codes that is used, can be found (including similar codes) and the total and proportional number of in-vivo codes is added. Only codes that are exactly the same as in the interview are seen as valid in-vivo codes, which also applies to the grammar used.

Table 2.5 Amount of codes and in-vivo codes per participant and in total

Codes	A	B	C	D	E	F	Total
Total	99	63	54	37	33	124	410
In-vivo	32	31	0	13	1	33	110
% in-vivo	32,3%	49,2%	0%	35,1%	3,0%	26,6%	26,8%

On average one-fourth of all codes are in-vivo codes. The use of in-vivo codes differ quite a lot, with the extreme cases of participant C who does not use a single one together with participant E who uses an in-vivo code in 3% of the cases, opposed to participant B, who uses them half of the time. But the majority of the participants, A, B, D and F, applies in-vivo coding at least in one out of four times, and is thus coding inductively. Scientific context matter here, since the two persons who apply in-vivo coding the most are both Cultural Geographers; participants B and D. In this discipline focus is upon a postmodern understanding of people instead of the creation of objective knowledge.

Apart from that, in appendix 1 it is visible participant C use rather broad codes, while participant B uses more specific and a larger amount of codes. This is a very important difference; interpretation already starts in this initial coding phase. Participants C and E are thus already theorising in the initial coding phase, while participants A, B, D and E tend to be more inductive.

Another assumption that can be done is that the higher the number of ascribed codes, the more inductive the analysis will be, because if a low number of codes is ascribed, more theoretical emphasis is placed upon them during the whole analysis. If, on the other hand, many codes are ascribed, the risk of overemphasizing certain aspects is smaller. However, participant F has by far used most codes, but does focus upon different issues than the other participants. Still, the mere fact that 124 codes are ascribed by participant F almost need to

lead to the assumption that this analysis must be more inductive than the one of participant E for example.

During category construction, most in-vivo codes are lost, which is hard to avoid, because the purpose of this step is to summarise and go to a higher level of abstraction (Strauss, Corbin, 1990). However, it is still possible to create in-vivo categories, even though it is rare. The created in-vivo categories from the experiment are displayed in table 2.6.

Table 2.6 Created in-vivo categories per participant

B	C	D	F
future	Dutch people	India	work
Dutch people			India
			Dutch people
			Attitude
			Return

The number of created in-vivo categories is limited to six here, namely; ‘future’, ‘Dutch people’, ‘India’, ‘work’, ‘attitude’ and ‘return’. ‘Dutch people’ is used three times and ‘India’ two times, meaning in-vivo categories are in total ten times applied. All these categories are rather general, broad and hard to interpret without a context. In this case, the essence of the (in-vivo) codes might be better grasped by creating a new, more conceptual, category than to use an in-vivo category.

Obviously the participants who already started summarizing in the initial code ascription phase have fewer codes to summarize and even face the threat of diminishing the already scarce information into too broad and general categories, which have lost the richness of the original text. On the other hand, too many codes and subsequently too many categories might lead to a lack of overview. Here a tension is visible between using richness of an interview and being inductive versus effectiveness. This is visible in table 2.2, which is again displayed here:

Table 2.2 Number of codes, categories and mean codes per category per participant and in total

	A	B	C	D	E	F	Total
Number of codes	99	63	54	37	33	124	410
Number of Categories	24	8	8	6	11	19	76
Mean number of codes per category	4	8	7	6	3	7	5

The most extreme case is participant D who has six categories in the end. If the category ‘personal background’ of participant D is compared to the ones of A and F, who had ascribed the most categories, the latter use a range of categories that could fit into this very broad concept, like social relationships, friends, dependence on husband, etc (see table 2.1). Therefore the use of more categories can be seen as a condition for more inductiveness.

The axial coding phase does offer a clear solution to the problem which arise in case of extensive inductive coding and categorizing, however it is questionable if the rather positivistic six items from the paradigm model are not ‘forcing the data into a model’. This is also the main critique of Glaser; however, his alternative consist of other sequences of connected items that can be blamed for exactly the same bias. In this research it is visible that for example participant A could not use the total paradigm model for constructing a theory and participant C had ‘attachment’ as both a phenomenon and an action/interaction strategy, whereby it seems that the ‘theories in mind’ did not correspond to the steps in the paradigm model. Furthermore the returning issue of ‘attachment’ is maybe not very suitable in an action-oriented model as the paradigm model. However, all codes and categories need to be arranged in some logical order or be theorized some way or another, which is automatically a turning point from induction to deduction. However the intervention of deduction in the paradigm model can hardly be prevented, the model remains useful for inductive theory building as long as the input of codes is as inductive as possible,

Even though this step has a rather deductive character, the practical question remains exactly how inductive the implementation of this phase has been in this experiment. This can only be done by looking at how ‘in-vivo’ and how many codes and categories have been filled in the paradigm model. The first is only visible for participant A and the second is displayed in table 2.7. The items with a dash and the ones divided by a white line are counted as separate units.

Table 2.7 Number of elements filled in paradigm model per participant

	A	B	C	D	E	F
Causal conditions	x	2	1	1	1	2
Phenomena	x	1	2	1	2	2
Context	11	2	6	3	4	3
Intervening conditions	2	3	1	x	2	3
Action/Interaction strategies	x	2	1	1	5	2
Consequences	1	1	1	1	1	2

Total	14	11	12	7	15	14
Number of Categories	24	8	8	6	11	19

All participants, except for A and F, used more elements in their paradigm model than the number of categories they created. If the categories are compared with the filled in items in the paradigm model, it appears that the central goal in the paradigm model was to end with the consequence of ‘return to India’ or something alike. This is probably caused by the research question. Thus next to the ‘inductive’ categories which were placed in the paradigm model, other ‘new’ concepts were added in order to answer the research question, which is therefore not beneficial for the inductiveness of the axial coding phase. An example is participant D who filled in ‘Yearn to return to India’ in the paradigm model, while this is neither present in codes or categories.

Finally, selective coding is the finishing touch of axial coding. Usually this phase is meant to summarise several interviews in one theory and here it is only used for one. Therefore the differences between axial and selective coding are not very big and are the statements that are mentioned above on axial coding in general also applicable on selective coding.

4.5.2 Between phases comparison

In the previous section the inductiveness is examined per coding phase, however here the interactions between the several phases are examined by providing some examples.

First an example is given on how a theory enters into the analysis and exactly where this happens, thus indicating exactly where deduction begins. In table 2.8 a very clear example of how a theory enters into the open coding process is displayed.

Table 2.8 Example of deduction in open coding per participant

	A	B	C	D	E	F
<i>Okay, that's clear. First I will ask something about people and then I will ask about places. First, to which group do you feel</i>						

<p><i>attached in The Netherlands?</i></p> <p>You mean by age, or...</p> <p><i>Any group you would like to mention. Which group do you feel, yeah, as being a part of? I don't know if you have any specific group.</i></p> <p>Not really, because I think we are more confined to the university and this and that, so it's not that we are very social with other groups here.</p> <p><i>But the university is also a group</i></p> <p>Yeah, so I think, in our, in our... especially with the lab and things, we are really close. We are very good colleagues in the lab. We do lot of social things with friends in the lab, so... I think if you ask me in Netherlands, I think your</p>	<p>perception Dutch link to group</p> <p>attachment to dutch group we = ?</p> <p>attachment to dutch group (with husband attached to lab)</p>	<p>Attachment people / group => <u>group</u> <u>attachment</u></p> <p>not really university</p> <p>the lab</p> <p>workplace</p>	<p>group attachment</p> <p>group attachment (activities)</p> <p>group attachment</p>	<p>confined</p> <p>lab</p>	<p>feeling of belonging to univ. group</p> <p>not socially attached to community</p>	<p>university</p> <p>social groups</p> <p>university</p> <p>social groups</p> <p>social groups</p> <p>social interaction</p> <p>social group</p>
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workplace, your lab, I think that's very connect more I think.						
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It is visible that ‘attachment’ and ‘belonging’ are directly coded by participants A, B, C and E. They have probably been influenced by the question of the interviewer, because the text of the interviewee is more about social contacts than it is about attachment and belonging. It can be interpreted in this way however, but probably only on a higher level of abstraction, thus in a category. As can be seen in the further phases of categorizing (section 4.1.2), axial coding (section 4.2) and selective coding (section 4.3), this concept of attachment continuously returns. This is especially apparent for participants B and D, which are from the department of Cultural Geography, where ‘place-attachment’ is an important theoretical issue. The same can be said for ‘homesickness’, which is not really the main theme in the interview, but it was provided as an example for axial coding. Thus it seems the ‘inserting of theories’ is mainly caused by bias from interview questions, and thus indirectly by the original theoretical framework, and by disciplinary background. Still, the influence of the interview questions on the theory formation can differ per participant. For example, participant F uses the biggest number of codes compared to the other participants; this can be seen as a strategy for limiting the influence of the interview questions in the open coding phase. This is visible in table 2.9.

Table 2.9 Strategy of participant F to limit influence interview questions on analysis

	A	B	C	D	E	F
<p><i>Okay, and do you think that if you are in India that you would miss The Netherlands again?</i></p> <p>I think so. Especially I think I would miss the work-culture a lot, because it's very good here. And I really like this kind of working environment. Especially in my lab, it's a little more strict that you use to be there to nine and it's a very competitive feeling. So you are always working hard and such kind of things. I think that's... I think I would really miss</p>	<p>work-culture</p> <p>work</p>	<p>miss of NL</p>	<p>missing NL work – culture</p>	<p>work-culture</p>	<p>On the contrary, missing Netherlands's work-culture as well</p>	<p>work culture</p> <p>work culture</p> <p>university</p> <p>strickt job</p> <p>working hard</p>

that a lot when I'm back in India, if I'm back.						miss
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In table 2.9 is visible that a question is posed about missing The Netherlands. Five participants, A, C, D, E and F directly answer this question with ‘work culture’, the thing the interviewee would miss after migrating back to India, and/or create a code out of the question in case of participants B, C and E. However, participant F is the only one who continues to code the text of the interviewee and in this way creates more insight into the Indian working culture. This is not related to the question of the interviewer, but does create more information about the interviewee. Therefore this can be seen as a strategy to limit the influence of interview questions.

Secondly a rather inductive example is given, whereby in-vivo coding leads to a theoretical concept that stays quite ‘close to the text’. In all theories, except for the one of participant C, ‘family’ was present, which is literally from the interview text of the interviewee. Further ‘friends’ (A, B, F), ‘hometown’ (D, E) and ‘married’ (B, E) were in-vivo codes that returned into the final theory. Especially participants A and D used a lot of in-vivo codes in their theory.

Finally the participants themselves provide their opinion to what extent their own theory could be considered as inductive. The main points from this discussion that has been transcribed are summarized here.

All participants except for E indicated that their theory was influence by a disciplinary background. Participant A mentioned the Theory of Planned behaviour, participants B and D emphasized their similarities due to the background in Cultural Geography and participant C claimed to be influenced by a sociological background because all focus was upon social factors during open coding, while no single aspect that the interviewee mentioned about work was coded. Finally participant F claimed to be economically oriented by emphasizing reasons for migration and issues about the labour markets in India and The Netherlands, which was indeed a distinctive element compared to the others.

Furthermore, participant A mentioned not to disagree on the elements in the theories of others, but just did not think of it. This means the disciplinary context of a person influences what is labelled and what is not as can be read in the following two quotes;

A: “Yeah, but for example when I looked at ‘participant B’s’ structure, ‘he/she’ talked about place attachment and I was like, ah, yeah, that could have also been in mine. But I didn’t think of it. And this moment I wouldn’t know exactly where to put it.”

C: *“But ‘he’s/she’s’ also telling his own (...) what ‘he/she’ thinks is very important. If it is important, ‘he/she’ will emphasize it by labeling it.”*

It is certainly true that certain elements are emphasized by labelling it. The validity of these theoretical elements actually needs to be discussed in order to examine whether or not they are as important as supposed. By involving the opinion of other researchers this can be conducted more successfully. In the discussion this is further explicated.

In sum the participants differed regarding on how inductive their analyses are, and deduction is mainly caused by four aspects. First, by difference in disciplinary background, second by using too broad codes in the initial phase, third by bias through questions in the interview posed by the interviewer and fourth by other causes, like the example given on homesickness during the explanation of axial coding. Apart from that, although there are considerable differences between all analyses, they all do seem to be inductive; they only emphasize different aspects from the same interview. Thus the interpretation differs. Participants D and A agreed upon this point which is visible in the following quotes:

D: *“It’s too far to say they’re not inductive”* (the theories)

Interviewer: *“Yeah, I agree”*

A: *“Yeah, they still are”*

To end this section, one more quote is given whereby the very powerful metaphor of a ‘filter’ is used by participant F:

F: *“It is a certain way of thinking. You can, to say, place a certain filter, but you can also remove it in principle. But it is pretty hard to do this. The way you interpret belongs to your study.”*

Everybody has some filter and needs one to make sense out, for example this interview. The filter can be seen as deduction, while the things that manage to come through the filter should be noticed and have the chance to change the filter; induction.

5 Conclusion and Discussion

5.1 Conclusion

At the introduction the following research questions were posed:

How reliable is grounded theory analysis according to the methodology of Strauss and Corbin (1990)?

1. *Which main consistencies can be found in the three coding phases when grounded theory analysis is conducted by several researchers?*
2. *Which main variability is apparent in the three coding phases?*
 - a. *In which coding phase does the major variability start?*
3. *How inductive is the variability per coding phase and of several coding phases in comparison?*

Reliability is measured by conducting a group experiment whereby six participants analyse one and the same interview by grounded theory methodology. Furthermore, the theories are presented, mutually compared and a group discussion is conducted on how inductive or deductive the analyses of the participants are.

Reliability can split up into two concepts; ‘consistency’; similar elements in case of repeated observation and ‘variability’; diverging elements in case of repeated observation. Variability can be inductive or deductive in that the interview can be analyzed by ‘staying close to the text’ or by using pre-defined theoretical knowledge. The assumption here is that inductive variability is more reliable than deductive variability, because the range of diverging ways in which the interview text can be analyzed is more limited when staying close to the text.

Based on the theoretical framework, one would expect variability is hard to avoid. However, the differences between the participants are not extreme. During open coding one participant (F) has thematically the most remarkable differences with the other participants in that emphasis is more on economic issues. However, in the axial coding phase some themes were created by all six participants. These themes are ‘place attachment/home’, ‘culture’, ‘contact’ and return migration. And finally in the selective coding phase, all participants had the core category ‘migration or not’ or something similar in common. This is the summarized answer to the main research question, but now the subquestions and main question are answered in detail.

Consistency can be found in the initial open coding throughout five aspects, namely the non-frequency of cross-referring codes, if they do cross-refer this only happens once or twice, with the exception of participant F. This can be explained by the tendency of participants to forget their previous codes during coding, which might be prevented by creating a sheet with used codes during the analysis. Secondly the cross-referring codes are more abstract than codes that are used only once. Thirdly the focus is often upon paragraphs in coding and fourth the interview questions influence the contents of the codes. Finally most codes consist of one to three words.

In the axial coding phase four consistencies could be found. First the most phenomena had the content of 'attachment' or 'missing home'. Secondly the context was almost for all participants rather broad and focused upon the social background of the interviewee. Third, all consequences are either on return migration or on homesickness. Finally some elements were returning throughout the whole paradigm model, even though they were not always ordered under the same conditions. These are 'place attachment/home', 'culture', 'contact' and 'return migration'.

Finally in the selective coding phase five out of six participants had the same main-subject in their conceptual model, namely 'return migration'.

Variability on the other hand can be found throughout all coding phases. In the initial open coding phase variability can be found in the amount of codes ascribed per participant, whether or not they are cross-referring, the abstractness of codes, the amount of text they refer to, the interpretation of the interview text that leads to the creation of a code, the use of attributes and visibility of uncertainty in the codes.

In the category construction phase, three forms of variability can be found, namely the amount of categories created per participant, the number of cross-referring categories and the mean number of codes that refer to one category. This is also the phase where major variability appears to become apparent.

Axial coding contains four variable elements in this research, which are the division between rational and emotional phenomena, causal conditions that are quite diverse, action/interaction strategies that can be split up in 'contact in The Netherlands' or 'return migration' reactions to the new environment and intervening conditions, which are also rather divergent.

Finally the selective coding phases, which consist of the constructed theories, have two variable elements. The first is a number of codes or categories that are only placed into a theory by one participant and the second is the differing extensiveness of the theories.

The third subquestion is about how inductive the variability per coding phase is. This can be assessed by looking at the number of in-vivo codes used compared to the total number of codes used per participant. Participants B and D proportionately used the most in-vivo codes, which might be explained by their disciplinary background in Cultural Geography. Furthermore it appeared that the number of constructed categories was smaller than the number of elements that were filled in the paradigm model. This can be explained by the need to answer the research question, which caused the participants to either use codes or introduce new concepts. In case of the latter, these concepts are not derived in an inductive way. In sum, the assumption that inductive analysis is more reliable than deductive analysis might be true in this experiment, because the more inductive the interview text was coded, the more similar their codes were. However, this is only applicable in the initial code ascription phase, because afterwards during categorization, axial coding and selective coding, deduction and interpretation take place and introduce variability.

Apart from that the reasons that biased inductive coding, categorizing and theorizing are mainly influences of questions of the interviewer in the interview and the example of 'homesickness' that was given during the explanation of the grounded theory methodology in the experiment.

However, the main reason the participants themselves provided for diverging theories is disciplinary background. They all interpreted the interview with a certain theoretical knowledge, which influenced the codes from the very beginning. This brings us to the main question; how reliable is grounded theory analysis? A certain 'shared theory' is certainly apparent, but major differences are also apparent. This is hard to prevent because the people who analyze an interview also differ. They interpret it by using their own experience and theoretical knowledge. Therefore grounded theory is in this research somewhat unreliable, however, it is more reliable than expected. In another experiment reliability would differ, depending on several factors of the participants. In sum, unreliability exists at varying degrees in grounded theory.

Finally a recommendation for future research would be to conduct a research on reliability with people who are as similar as possible in their personal and disciplinary backgrounds. It would be really interesting to compare this research with and can increase a further understanding on the elements that influence reliability and hopefully create increased application of grounded theory methodology in the field of Demography.

5.2 Discussion

In this research reliability and inductiveness of grounded theory analysis is examined. However more induction does mean higher reliability, deduction is just as well a part of grounded theory analysis and can be seen as the other side of the same coin. Even though the strive is for induction in grounded theory analysis, deduction, already existing knowledge via literature and scientific theory in general remains of major importance in understanding empirics.

However theory can be defined in many ways and every person has a different ‘set of theories’, even in case of corresponding subdisciplines. Personal experience for example might influence interpretation, which is apparent for participant E who is from abroad and thus ‘sees’ adjustment and homesickness in the text, while participant A for example did not recognise this as a central element in the interview.

The implication would be that for the case of grounded theory analysis, perfect reliability could never be gained because deduction appears unavoidably in the analysis sooner or later and a ‘pure inductive’ analysis is impracticable (Kelle, 2005). Now the remaining ‘tool’ to understand and improve reliability is through examining ‘where the line is put between induction and deduction’. It is shown in this research that this line is put in different positions by the participants.

The big issue is then where this line should be positioned, how inductive or deductive should an analysis be? The placement of stringent lines is difficult however because such a rule needs to be respected and accepted by all actors involved in grounded theory. This is unlikely to happen, because there are certain advocates in favour of induction, mainly qualitative researchers, and advocates of deduction, mainly quantitative researchers. In other words, it is difficult to answer this question, because it depends to what degree the arguments, in favour of induction or deduction, are mutually recognized.

This point of view is derived from Habermas, who claims that in case of a ‘contradictory but equally reasonable beliefs’ dilemma, this can only be solved through ‘deliberation’, which means a shift from strategic to communicative action whereby, through discussion, actors can discover norms that are accepted for both. Lord and Magnette (2004) take this a step further, whereby deliberation also can lead to a form of ‘balance’ between conflicting beliefs. This balance comes into existence through an unsolvable conflict, whereby the advocates of both perspectives will take care of the maintenance of their own perspective.

However, a condition that should be fulfilled in order to enable this process to take place is an open process of communication (Lord, Magnette, 2004).

In case of grounded theory, induction and deduction can be seen as simultaneously complementary and competitive concepts. Still, because they are each others opposite, the last perspective of Lord and Magnette can be applied here. Induction and deduction should be balanced though critical assessment, meaning that excessive application and subsequently threatening bias by one of these should be avoided through the critical assessment of advocates of the other one. These advocates are not necessarily either in favour for only induction or deduction, but can also be critical of both, meaning that actually every researcher should be able to criticize the balance between induction and deduction in a grounded theory analysis.

In order to make this possible, the inductive and deductive elements in a grounded theory analysis should be communicated in an open way, whereby fellow-researchers have the opportunity for critical assessment of these aspects. If the analysis is considered as inductive as possible, it is especially important to indicate the deductive elements. The three aspects that appeared important for this are first the research question, second the scientific subdiscipline of a researcher and third the personal context of the researcher regarding the subject that is studied.

The research question is an important focal point in the analysis. In order to answer it, some elements from an interview might be neglected, while others are emphasised, which in itself can already be seen as the primary deductive act of theorizing. In this research the research question appeared to become mainly influential in the axial coding phase that did change the initial focus of the participants in the open coding phase. The use of a clear research question can be seen as beneficial for an open communication process, because the aim of the analysis is well-defined.

Participants with similar subdisciplines also appeared to have more similar coding than those with different ones, which is visible for participants B and D. The theoretical foreknowledge of a researcher can predict to some degree the kind of analysis that is to be expected. Therefore indicating the disciplinary context of the researcher can also help to enhance the open communicative process.

Finally the personal context of the researcher can influence the analysis when the researcher is personally connected with the subject. This was apparent for participant E. The influence on the analysis here is simply higher variability, or in other words, if a personal recognition exists with the research subject under study, an interview is analysed differently

than if this is not the case. This does not mean personal recognition leads to ‘less scientific’ analysis. On the contrary, if focus would be on validity, personal recognition would improve the analysis, because content validity - or the range of meanings that is ascribed to the subject under study - is widened.

In sum, this is a plea for the recognition of the role of the researcher in grounded theory analysis. Instead of a ‘black box’, the researcher who conducts the analysis should be considered as a person (Clarke, 2005). By indicating the context in which interpretation has taken place, other researchers have improved opportunities for giving critique which in the end can lead to an enhancement of the induction-deduction balance through the Habermasian deliberation.

However this same issue has been recognised by Adele Clarke (2005), her solution implies the application of a post-modern extension of the ‘modernistic’ versions of grounded theory, which is called ‘situational analysis’. However for the application of this methodology, extensive experience of grounded theory application is required. For the field of Demography where its application has been fairly recent, this requirement is unrealistic. Therefore a more compact and less all-embracing addition to grounded theory than situational analysis is advocated here, namely ‘transparent interpretation’.

This means interpretation in grounded theory analysis is made transparent by the researcher through indicating the three aspects mentioned above, research question, disciplinary and personal context. This should provide better opportunities for open communication between researchers, including quantitative researchers. Hereby the aim is not necessarily to reach an agreement, because conflict between perspectives can provide a better balance between induction and deduction, solely because researchers are protected from too large inductive or deductive biases.

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