

Using a Text Databank in the Evaluation of Problem-Centered Interviews

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Abstract: On the basis of several examples from our longitudinal study "Transitions to Employment," dealing with the shaping of biography of young adults and typical transition-patterns from education to employment, we discuss the use of a text databank in the evaluation of problem-centered interviews. First, we explain the structure of the project's "databank of biographical interviews with young adults" which is founded on a thematic and temporarily differentiating system of categories recording job- and family-related actions and orientations. We present different ways of using the databank in qualitative evaluation. The manner how certain cases and categories of the databank are selected and included in the analysis depends on the objective and the problem's complexity. Our examples show that the use of a databank is an important possibility to support the evaluation of qualitative interviews, facilitating a thematic directed access and thus allowing the handling of data which are particularly extensive.

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1. Introduction

In this paper we describe the structure of a text databank and our experiences with its use in the evaluation of qualitative interviews. [1]

The text material which this databank is based on stems from the project "Transitions to Employment" at the Special Collaborative Centre 186, University of Bremen (c.f. HEINZ, KELLE, WITZEL & ZINN, 1998). By means of quantitative and qualitative methods it investigates occupational biographies as well as family-related transitions of a cohort leaving school in a dual educational system.¹ From the total of the quantitative panel a theoretically founded choice of respondents was made who were interviewed three times at intervals of approximately three years each focusing on their individual biographies, i.e. on their orientations and action strategies (n=91 across all three waves). For an evaluation of such voluminous data material and its availability for re-analyses, the establishment of a text databank is necessary. [2]

The character of the data and the special requirements that represent an access to text sequences, depend on the methodology of the chosen interview procedure. Therefore, we shall deal with the characteristics of the problem-centered interview (cf. WITZEL, 1982, 1989, 1996, 2000) that explain why it is necessary to not only install complete transcriptions in a databank but rather to point out the need of developing refined strategies for a systematic and structured access to text sequences. [3]

1.1 Characteristics of the problem-centered interview and derivatives for the evaluation

The specification of the problem-centered interview (PCI) is that on the one hand pivotal interview subjects are interdisciplinary determined by the guideline. On the other hand, interviewees do have a maximum of creative freedom in working on these subjects. The interviewer, being ideally the researcher him-/herself, introduces the respondent to the subjects in question, focus in the course of the conversation on a kind of self-organized communication process, and while doing so stimulate the subjective sight of the problem through maximum openness regarding sequence and context of the topics. "Blind spots" in the communication process should be avoided by letting the respondents choose their own topics and thus enabling them to correct misunderstandings and allegations that may arise by the interviewer's way to query. This means that there is no rigid pattern, the conversation however should be held in the respondent's natural environment. It depends on his/her interest and linguistic competence, narrative or dialogue, how the interviewer adjusts according to the interviewee's train of thought and the major theme of the interview. This openness has consequences

1 Queries were directed at engine fitters, car mechanics, hairdressers, bank-, office- and retail clerks who finished their education in 1989/90 in an area of rather remote chances (Bremen) and in a district with good working prospects (Munich). Our investigation includes some of the traditionally most frequented education in the service as well as the commercial sector that represent at the same time professions with rather good and bad labor-market prospects as well as typical female, male and mixed gender professions.

for the quality and structure of the text material when transcribed. Specific questions are frequently scattered about the entire text, since the respondent's utmost freedom of shaping the discussion and the interviewer's "pre-interpretation" of the interviewee's explications lead to the circumstance that topics are not touched upon only once but as often the respondent returns to them looking at them from different perspectives. [4]

This communicative characteristic feature has been developed for different reasons. First, different subjects are connected with each other. For example, an interviewee may establish a link between his/her future career perspective and the discussion of her/his income situation and room for maneuver at work as well as family planning. Second, the interview helps to stimulate mind and memory, processes of reflection are put into operation which lead to a better recollection of topics and especially brings out conflicts and ambivalence that may be discussed again at a later time in the interview. Last but not least, the interviewer contributes new points of view and possible links and perspectives to already treated subjects. Since the interviewer is already working on an interpretation of the individual's subjective point of view during the inquiry, he/she can focus more on the communication on the research topic, and, while doing so, can go deeper into the subjects that have already been mentioned. [5]

This openness during the inquiry complicates the evaluation process in so far as an access to all answers concerning a set of questions of the guideline is not directly possible as it would be the case, for example, if there was a determined series of questions. Instead, all answers to a certain subject that are scattered over the entire interview have to be summed up in the analysis. [6]

1.2 Research design and consequences for the evaluation

Size and complexity of our project's research design considerably increased the need for systematizing and structuring the interview material for the evaluation. Methodical challenges arose in the beginning due to an abundance of material generated by our—in relation to standard qualitative investigations—very large sample of more than 300 interviews (with a total of about 770,000 text lines), categorized by qualified jobs, gender and region. Considering that an interview takes hour-and-a-half on average, one can image how extensive the data is. [7]

Due to the longitudinal design the respondents' explications concerning a certain subject are not restricted to one interview only but are scattered over more waves of inquiry held at different times. An analysis of thematic connections at different times of interviewing, i.e. a systematic and simple access to text sequences of three waves of inquiry that are to be compared inter- and intra-individually, is important because our life-course analysis is interested in ambiguities as well as in change or consistency of orientations and actions. [8]

The complexity of the research our project focuses on the connection among different sociological and psychological subsidiary branches (cf. KUEHN & WITZEL, 2000) and this requires a computer-aided data administration in order to

meet the thematic diversity of possibilities of evaluation of biographical texts as they are expressed in the examples of application for the text databank (see Section 4). That means, that, depending on the project's state of findings and whether to investigate specific single aspects of orientations and actions in the life course—original text passages must be referred to again and again. [9]

This need results also due to the requirements of graded evaluation and validation processes. If one follows the rules of Grounded Theory (STRAUSS, 1991; STRAUSS & CORBIN, 1996) in evaluating qualitative interviews, interview passages already looked through have to be reconsidered and reanalyzed over and over again in the different phases of evaluation, according to the perspective changing along with the theoretical gain of knowledge. Validation along the text serves as verification, substantiation, modification or a rejection of the different hypotheses of interpretation. Ideally, validation is done discursively within the research team, with the points of view of the different evaluators being discussed, in order to on the one hand open up to discussion theoretical presumptions that have not yet been explained, and on the other to cover a widest possible scope of reading options. For a discussion within the research team an immediate access to original text passages and the realization of quotation contexts is practicable. This access will allow a verification of possible hypotheses of interpretation by enabling the evaluator to look for empirical evidence/counter evidence. [10]

In addition, these qualitative data obtained in a time-consuming and partially expensive way are, in our opinion, still used too little for secondary analyses, the realization of which is made easier just because of the steadily improved data administration programs (for a survey cf. for example WEITZMAN, 2000; ALEXA & ZUELL, 2000). We can now offer the readers the computer-aided databank system "QBIQ" free of cost. "QBIQ" is the term for a databank system developed by the "Collaborative Research Center 186" (Sfb 186), University of Bremen and the "Life Course Archive" at the "Graduate School of Social Sciences" (GSSS), University of Bremen (program and handbook available at: <http://www.gsss.uni-bremen.de/>). "QbiQ" not only administers qualitative and quantitative data together but it also possesses the most important basic functions of popular text analysis systems (coding of data, producing different kinds of text retrievals etc.) (cf. KLUGE & OPITZ [in this volume](#)). [11]

Because of these numerous reasons, it seemed not only helpful for our further research but mandatory to install a text databank containing not only all interview texts but also a system allowing a flexible and complex access to the voluminous interview material. The thematic and temporal bundling of the completely transcribed interviews is possible by "coding" the interviews, i.e. by assigning respectively "the entire interview text to categories serving as an accumulation bin. The individual categories are embedded in a system (see Section 3) forming the basis for the coding of all interviews and with it the establishment of the databank of biographical interviews of young adults. By means of a personal computer and a special databank administration software a faster thematic access to interview text sequences may subsequently be realized. [12]

2. Fundamentals and Advantages of Using a Text Databank in the Evaluation Process of Problem-Centered Interviews

In looking at the possibilities of using a databank in the evaluation process of qualitative interviews, a basic limitation should be pointed out: Even with modern software programs it is not the computer doing evaluation. The interpretation of data remains the task of the person doing research since an understanding of texts is not a mechanical, algorithmic process (c.f. also KELLE, 1995, p.3)². But the computer is of great help in the administration, (re-)organization and structuring of text material necessary for qualitative social research. Within the scope of qualitative research the main point is to find similarities, differences and relations between the contents of different text passages. In order to do so, the researcher has to develop an organizing scheme like a categorizing system that can be understood as a thematic based fabric of "categories." Such a categorizing system is not the "end" of the forming of concepts and theory but represents an aid for further evaluations as we will explain in greater detail in the following paragraphs.[13]

We start the analysis with interview transcripts. When a certain text document (for example, an interview) has been read in the program³, it will be provided with line numbers by the user. The coding person will then decide on the amount of text representing a relevant and plausible "meaning unit" (TESCH, 1992, p.46). In our project, a text line forms the smallest possible coding unit.

2 Due to the mere tool function a computer always has, it is not necessary to fight any suggestion and restriction of thinking caused by its use, as KLUTE (1996, p.163) believes. He seems to feel almost persecuted by the computer, producing as a remedy not only research diaries "made of paper at different places" but also notes on books "while lying in about 5 km distance from the computer." One may ironically ask whether 5 km are enough in Internet times.

3 At the same time, various data processing programs for computer-aided analysis of qualitative data are available to the researcher, a so-called QDA-software (QDA = Qualitative Data Analysis) like i.e. ATLAS.ti, WINMAX, ETHNOGRAPH, NUD.IST. For our project we chose NUD.IST because it offers a great variety of possibilities (cf., for example, FLICK, 1995, p.279; MILES & HUBERMANN 1994, p.316). "NUD.IST" is the abbreviation for "Non-numerical Unstructured Data Indexing Searching and Theorizing" and it belongs to the leading evaluation programs in qualitative research.

Example for the setting of a certain document: Document "Rieke"

1 Interviewer:

2 In March 92 we had our last interview and now our question is: what
 happened in the meantime?

3 You worked already part-time as a shop assistant, if I am right. Yes,
 and now, since then, what did

4 you do? ...

5

6 Rieke:

7 I am going to university now, and since, let me see, yes, since 1993,
 that's when I started. ...

Figure 1: Example for the setting of a text document read in the databank administration program [14]

The transcribed interviews fed into the databank form the database for the coding by means of a category system which can also be described as index system.

Part of the index system

5... Employment and profession

5/1 Content of work

5/2 Income

5/3 Business

...

7... Family and partnership

7/1 Family background

7/2 Partner

...

Figure 2: An illustration of the structure of an index system in a text databank [15]

Each category is provided with a code number. The category "income" shows the code number 5/2. This number indicates the position of the individual category within the system. For example, the categories "content of work," "income," "business" belong to the subject area "employment and profession," the categories "family background" and "partner" to the subject area "family and partnership." During the coding process individual text passages of the respective interview are assigned to a certain category. [16]

The assignment is done by means of the category code number and the coded line units of the respective document. In our example (Fig. 3), the units 18-24 of the interview "Jill" were recorded under category 5/2.

Example for the assignment of a text passage to a certain category	
Category 5/2 "Income"	
Document "Jill," text units 18-24	
18	Interviewer:
19	I see. And when did you realize that you would like to work at the post office?
20	
21	Jill:
22	I found out through a friend of mine, because as a hairdresser, you don't make much money, and
23	she said to me: Why don't you try it? Money is better there. I make three times as much as I would
24	24 have as a hairdresser.
	...

Figure 3: Example for the assignment of a text passage to a category [17]

So, a category functions as a "container" (RICHARDS & RICHARDS, 1995, p.83): It collects text passages. This collection of different containers put in order according to thematic aspects will help in the evaluation and theorizing since it enables the person doing research to have an immediate access to a container's text passages and, beyond it, to combine them with text passages from other containers (cf. also MILES & HUBERMAN, 1994, p.57; PREIN, 1996, p.96). [18]

But now, what is the benefit of setting up such an oversized "card-index box"? All collected remarks belonging to one or more categories may be realized "at one sight" without looking them up again and again in the interview. This method represents a considerable advantage in the evaluation of long and unstructured text passages like, for instance, problem-centered interviews. The more text documents are included in the analysis, the greater the value of this advantage. Because of the high memory capacity of computers and a fast access to data, a category-related comparison of different interviews may be carried out within seconds, if the respective interviews were coded before. In the form of a so-called "retrieval," all the results of such a search may be looked at once: A single retrieval can give information regarding several cases and several categories (cf., for example, KELLE, 1995; PREIN, 1996).⁴

4 A text passage may also be assigned to different categories. Especially in narrative sequences, during the opening narration (i.e. after the interviewer's initial question), several varying subjects are frequently touched upon. But also during the further course of the interview, thematic relations are usually linked with other "subjects" and not established in isolation (for instance, the presentation of private and career prospects).

Document "Lars"

...

Text units 1059-1066

1059 Lars:

1060 The money must be okay, too and, well ...

1061

1062 Interviewer:

1063 And is it, after all?

1064

1065 Lars:

1066 No! (laughs). Well, for a shop assistant it is very, very bad pay.

Document "Theo"

...

Text units 1273-1280

1273 Theo:

1274 I make a little bit of money now. Before, it was nothing.

1275

1276 Interviewer:

1277 Yes. And are you content now?

1278

1279 Theo:

1280 Nooo, it is really not much at the moment, but I hope that it'll be more soon

...

Figure 4: Illustration for a simple, case-comprehensive, category-related retrieval:
Category 5/2 "Income" [19]

The assignment of text units to a certain category and the establishment of a retrieval is done by means of a user's program such as NUD.IST. Without a computer, an evaluation on the basis of categorizing would be much more problematic. Even if the different interview transcripts would already be clearly marked in color in the margin, one would first have to sort out all transcripts for the evaluation and then be confronted with a voluminous and confusing pile of papers. And if one would cut out all relevant text passages and place them next to each other ("cut-and-paste" procedure), one would get a result after many hours or days. The computer does this job with one single input. Moreover, the computer enables the user to look at a certain text unit in context with the

interview, if necessary, which would be much more difficult when cutting paragraphs by hand (cf. also PREIN, 1996, pp.98f.; KLUGE, 1999, p.186). [20]

Besides, the variety of logical linking options concerning categories as well as text units is very advantageous in computer-aided evaluation. User programs offer different linking commands (like "and," "or" etc.) so that a calculated access to text passages may occur not only via a code but via the combination of several codes. These codes may on the one hand be linked case-oriented to intra-personal or "horizontal retrievals" (KUCKARTZ, 1988, p.192) in order to establish concise case analyses via paraphrasing and condensation. On the other hand, using code combinations allows interpersonal or "vertical retrievals" (ibid.). For instance, only interviews of a certain professional group, genus group or a certain region may be included in the analyses. A category-related selection of text units could, for example, happen in identifying, with the help of the user's program, exactly those passages in which the chosen respondents combine career options with ideas of starting a family. [21]

The following figure summarizes once again the components involved in the computer-aided evaluation.

Database	Index System	User's Program
Transcribed interview text passages, saved as data file	Category system deduced from the interview subject and the guideline	Software program for a structured input and query (= retrieval) of data with a variety of choices
e.g. those 300 and more problem-centered text-databank interviews of young adults (DABIE, see Section 1) from the longitudinal study of the Sfb 186-A1-project at the University of Bremen	e.g. the category scheme within the text databank of biographical interviews of young adults (DABIE) (see Section 3)	e.g. the program NUD•IST

Figure 5: Elements of computer-aided evaluation [22]

3. Presentation of the Category System

In this paragraph we—on the basis of our experience—deal first with the process of establishing a category system as an organizing scheme for the coding course (see Section 3.1) before presenting it and its structure (see Section 3.2). Finally, we shall reflect on our experiences in carrying out and organizing the coding process (see Section 3.3). [23]

3.1 Establishing a category system

Before the interviews may be coded and a text databank be established, an index system has to be developed. This should be done with the help of interview guidelines and an exemplary analysis of some interviews (cf. KUEHN, 1996; KELLE & KLUGE, 1999, pp.54).⁵ [24]

First, it is advisable to have a so-called start list that is to be understood as a first provisional category system with many codes in loose order. This considers a proposal made by MILES and HUBERMAN (1994, p.58):

"One method of creating codes—the one we prefer—is that of creating a provisional 'starting list' for codes prior to fieldwork. That list comes from the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables that the researcher brings to the study." [25]

In such a start list presumptions and previous knowledge are expressed, personal context knowledge is contributed and utilized for further analyses. The start list is influenced by the subjects of the interview guidelines and by the leading research questions of the project. [26]

This start list contributes to an initial test coding that is to examine the acceptability of this first provisional category system. For that, some selected interviews out of different contexts should first be coded line by line, i.e. the separate text sequences should be assigned to the respective categories. On the other hand, considering Grounded Theory, it is not only the question of an assignment to already existing categories but rather—elicited by the data material—the question of their modification and development of new ones. The aim is to "crack or break open data analytically" (STRAUSS, 1991, p.59), in order to develop concepts based on data. Categories are established by comparing data regarding similarities and differences. Categories should on the one hand collect central subjects of an interview and on the other be defined as clearly as possible in order to allow a quick assignment without a long lasting process of interpretation. [27]

Quality test of categories

The categories that are to be established as a thematic container are to be tested repeatedly during this process with regard to their quality: [28]

5 The category system that DABIE took as a basis was elaborated by our project by means of thorough groundwork. With the aim of an evaluation of family-biographical questions, Johanna MIERENDORFF (cf. HEINZ et al., 1996) has—mainly based on the guideline—developed thematic categories. Thomas KUEHN (1996) has carried out a categorical analysis in his dissertation (diploma) for the description of modes of biographical agency and has developed a detailed category system for the registration of modes of biographical agency. Those two family- and job-relevant systems have been—considering the expected effort of the coding procedure and the focus on project questions—integrated into the category system presented here.

Is this category useful in recording a pivotal subject of an interview? May different ways of handling or interpretation be deduced from the coded contents? This is necessary in order to keep the category system on a very clearly arranged level; therefore, a restriction to those subjects pivotal for the examination of research problems is mandatory. At the same time, codes should be constructed in a way that the contents they are representing contribute to a differentiated picture of the matter of investigation. After the test coding of the first interviews it should be checked—as an initial construction of dimensions—which varying contents to a category become noticeable, for instance, in the category "income": "Income as a basis for starting a family," "income as a guarantee for independence," "income to satisfy expensive leisure-time activities" etc.

- a. Has the category been clearly defined? Is an assignment of text passages possible without tedious interpretation? We consider the category system as a help to administrate data but not as a goal of qualitative research. Accordingly, we rather prefer descriptive category terms, allowing a theory-guided varied restructuring of data in later evaluation processes and not rashly limiting the research process to few theoretical terms. A clear, descriptive definition of categories also raises the understanding and reliability of the coding that normally take place in teamwork with several collaborators and student assistants.
- b. Are the individual categories sufficiently defined and clearly divided from each other? Is a suitable quantity of text recorded? In order to keep the system lucid it is necessary that categories cover subject areas to a sufficient extent so that excess overlapping within the scope of definitions is avoided. A too big and too branched out category system involves the risk during the coding process of "forgetting" individual categories while assigning text passages. [29]

Assignments of text passages to several categories, however, should generally not be excluded; it is on the contrary often sensible. Assignments of this sort must be explained though. A too strong branching out of the category system will lead to a lack of selectivity due to the frequent double assignment of text passages to the same category combination. On the other hand, a too "rough" branching out or differentiation involves the risk of recording too many text passages of a certain category so that the evaluator has difficulty in getting a general idea of the text quantity. [30]

Setting up the system

By means of the changed category system, interview coding should be carried out once again with the purpose of testing and modifying it. This modification should more and more allow a selective comparison of the categories, the forming of generic terms around which the individual categories may be grouped. By doing so, a hierarchically ordered system will be established, similar to an upside-down tree structure. [31]

Test coding by means of the changing and developing system should be stopped as soon as it proves "saturated," i.e., when the incorporation of new interviews does no longer lead to changes of the system. [32]

Openness and closeness of the system

The categories or codes determined by us as a classification system of the text databank are terms relatively poor in theory. So these codes are not to be understood as "core categories" emerging, in the sense of Grounded Theory, at the end of an evaluation process but rather as thematic containers offering assistance and material for further analyses and theoretical forming of concepts connected to them because in our problem-centered interviews a vast number of sub-subjects are being treated. They result from the problem handled by our project. [33]

The category system thus distinguishes itself by openness and closeness at the same time. It is closed concerning the fixed category scheme developed for the coding process. No new categories will be developed during the coding process because it is the category system's function and purpose to allow a founded access to all interviews. Only if the code-determined temporal-biographical and thematic relation to all interviews may be produced, a comparability of cases is guaranteed. [34]

On the other hand the category system is open as far as it does not stand for the end of the evaluation process but, on the contrary, is to support explicitly a further theoretical forming of concepts. A theoretically founded additional coding of interviews in relation to a theoretical problem is always possible (see also Section 4). [35]

3.2 The structure of the category system

Logic of the system

The category system presented in the following is to support a theory-generating evaluation of the interview texts. For this, the temporal and thematic arranging codes developed on the basis of the preceding evaluation experience were set up extensively and as empirically empty "collecting" containers for interview statements. [36]

The category system is divided into three main branches: temporal-biographical arrangement of codes of work biography (see Section 3.2.1), thematic arrangement of codes of work and family biography (see Section 3.2.2) and case characteristics (see Section 3.2.3). [37]

3.2.1 Temporal-biographical arrangement of codes of work biography

The statements of the respondents are biographically placed by means of event or passage logic. This procedure is derived from the requirements of life-course analysis. In the evaluation it is the point of "reconstruction orientations and

actions in the life course with different duration and sequencing. These situations can be characterized as different life-course passages, placing the individual—on the time axis of participation—in different organizations, here: apprenticeship, job, joblessness, change of jobs, military or civilian service, retraining, advanced technical college etc. This enables us to analyze agency in connection with institutional contexts. [38]

By means of the category "chronology after vocational training," text sequences related to the respondent's work biography will be arranged according to occupational "passages" like vocational training, first job etc. in order to be able to compare during the evaluation the different versions of orientations and actions, according to the time of the interview. [39]

The coding takes place on the basis of the biographical course outline that has to be produced for every case before and during the coding process. For this outline it is recommended that it is recorded during the interview on an extra sheet of paper the sequence of her/his work-biographical passages. If this is not possible due to the interview situation, the reconstruction should be done in any case in the postscript that has to be put down immediately after the problem-centered interview (cf. WITZEL, 2000). This draft of a biographical course outline should be checked during the coding process by the persons in charge and, if necessary, be changed.

3150702, Case "Gudrun," hairdresser in Bremen		
Stage	Time	Kind of "activity"
1	07/1989	end of hairdresser apprenticeship
2	08/1989-09/1989	joblessness
3	09/1989-04/1993	nursing assistant in a nursing home
4	since 04/1993	motherhood and maternity leave

Figure 6: Example of a biographical course outline [40]

During the coding we distinguish between prehistory (category 2) and the course of the occupational career from the beginning of the apprenticeship, which, in our example (Fig. 7), ended in 1989 and which was the decisive factor for an inclusion in the sample (category 1). [41]

Such differentiation is derived from our investigation's focus on career development (after vocational training) showing at first relatively high continuity (cf. WITZEL & MÖNNICH, 1995), but later in some cases a very intermittent development (cf. SCHAEPPER, KUEHN & WITZEL, 2000). Only stage 1 of the course-related coding may be defined as the common point of reference "vocational training" for all respondents, because it is identical with the sampling criterion "successful dual education." [42]

The stages of vocational biography are numbered all the way through. The point is a situation-specific recording of realized vocational options in their biographical, i.e. chronological, sequence. In order to code orientations and actions in the individual stages, we fell back on a heuristic mode of agency, developed in previous projects (WITZEL, 2001). So every stage is subdivided according to the model's elements: aspirations, realizations and balancing. Under aspirations, the stage-related justifications for actions are listed. Job-related interests, motivations, designs or plans for action may be reconstructed during evaluation. In realizations we collect statements on specific moves towards the realization of aspirations. Balancing is the individual's evaluation of the consequences of decisions and actions and context experiences. They have a double time perspective because of their retrospective and prospective shares of reflection, which leads to re-evaluations of objectives, expectations and plans. (In this way, balancing links the individual stages.) The coding according to stages includes all moves made during schooling, vocational education and career, also joblessness. In the following, we will describe the individual terms and the connected demands on the coding:

Stage 1 to x: Aspiration
<u>Definition:</u> Here, all statements to the question "Why did I decide for this stage?" are collected.
The answers are interest-related explanations or expectations concerning options (called stages in this case) that have been realized. Aspirations relate to anticipated conditions of action. They show the individual's relationship to normative life-course patterns, institutional demands, control mechanisms, to potentially available resources and to the realization of the terms of reference resulting from the structural demands.
Stage 1 to x: Realization
<u>Definition:</u> Here, all information to the question "What did I do to reach my goal?" is registered.
It includes the actual steps that were taken to realize aspirations and the individual problem-solving in connection with structures of demand. While doing so, individuals fall back on available resources, i.e. they take into consideration the conditions they are confronted with during the process of the realization of their interest and they use their individual means to realize options (for instance, level of education, social network, parental and peer support).
Stage 1 to x: Balancing
<u>Definition:</u> Balancing means the subjective assessment of the consequences of decisions and actions. Balancing answers the question "How do I look at this phase in retrospect?"
Balancing includes the assessment of the relation between aspirations and conditions of action and the stability of consequences of actions for a career. They form the basis for the maintenance, correction or reduction of demands as well as for future planning. Plans for the future respectively expectations may also consider the actual situation, for instance, perception of performance assessments and promotion by superiors, decision alternatives and access to information. All this will contribute to an estimation of future options of action.

Figure 7: Aspiration, Realization, Balancing—the elements of the biographical agency model by WITZEL (2001) [43]

The coding according to a biographical-temporal logic⁶ offers the opportunity to biographically record all statements collected in the subject-relevant categories (see Section 3.2.2) in this stage sequence. To ensure this, not only aspirations, realizations and balancing are being coded but also "information." In this case, it concerns a residual category for further biographical subjects like non-judgmental

6 For an exact interview coding, we specified the definition of the categories and gave precise instruction for the categorizing of "special contents." As an example, we are referring here to the specification of the category "balancing." Special contents: Organizational conditions like division of labor, hierarchy, working hours, income, competition, work pressure, quality of education, i.e. possibilities of learning, room for manoeuvre, job security. Career prospects like future jobs with high responsibility, variety of subject matters, differences in demands and reality, work climate, the meaning of work in the stage judged. Positive and negative sides of work. What has experience shown throughout the different stages, what was concluded for the future, which principles were derived?

descriptions of the content of work etc. that remain unconsidered in the action-theoretically derived categories aspirations, realizations and balancing.

Stage: Information

Definition: Here, all stage-specific information other than aspiration, realization and balancing are counted.

Description of contents of work, company conditions, hierarchy and facts concerning changes in the company, i.e. change of superior, efficiency measures etc., but also regarding family/partnership and attitudes/orientations, if these information are clearly connected to the career-biographical stage.

Figure 8: Stage-specific coding of general information [44]

This logic leads to the following coding system:

1 1 Stage 1
1 1 1 Stage 1: Aspiration
1 1 2 Stage 1: Realization
1 1 3 Stage 1: Balancing
1 1 4 Stage 1: Information
1 2 Stage 2
1 2 1 Stage 2: Aspiration
1 2 2 Stage 2: Realization
...

Figure 9: Stage-specific coding system [45]

This, at first sight, a rather extensive construction makes use of a "tree structure" respectively a hierarchical division into codes, allowing a query differentiated by stages, aspiration, realization etc., which is of great advantage in view of the considerable size of the text passages. At the same time, all text sequences belonging to a stage may be looked at by means of a summary query, regardless of whether it concerns aspirations, balancing or information. [46]

Code 3 (unrealized and dismissed options) records all unrealized options stated during the interview, i.e. options that existed in the past but were not realized as well as present options that are not really striven for respectively are considered unrealizable. [47]

Category 4 (career perspectives) registers the respondent's specific statements on his/her career perspectives at the time of the interview. [48]

3.2.2 *Thematic arranging codes of work and family biography*

The protagonists refer to the context conditions of the individual stages in life course as subjectively perceived opportunity structures or options, i.e. they focus on chances they try to realize and restrictions they try to avoid. Text sequences of this biographical respectively life-course theoretical subject are collected by means of the thematic arranging codes. So the code "income" records all statements of the interviewees concerning income etc., regardless of which biographical stage in the respective biography they refer to. [49]

Our project question led to the following "generic subjects" to which the individual subject-related codes are assigned: "work and profession" (categories 5/1 to 5/7), "social network" (category 6), "family and partnership" (category 7/1 to 7/7). "General orientations and attitudes" forms the generic term for categories 8/1 to 8/4, in which fundamental ideas about life, dogmas and social patterns of interpretation are collected. [50]

As an example, we provide below the definitions for the generic subject "work and profession":

5/1 Work and Profession—Contents of Work

Statements in which the respondent describes her/his occupation, tasks they have to cope with, including statements concerning meaning of work, interests, preferences, aversions, balancing of contents of work.

5/2 Work and Profession—Income

Comments referring to the personal income as well as to general occupational income situations. This also includes interview passages on financial support (i.e. government student loan or parental help), allowances, household money, financial or cost problems.

5/3 Work and Profession—Company

Statements about the company or employer as an organization, i.e. work climate, social coexistence, comparison of firms, comments about the boss as a gatekeeper, the application situation for an apprenticeship and the question of being hired permanently by the company, responsibilities ("what should I do?"), the position within the company hierarchy and the educational quality.

5/4 Work and Profession—Career Prospects

Comments on occupational possibilities, educational perspectives (promotion prospects), job security, assessment of the actual and general labor-market situation, financial support by the employment office. Related to what is being or has been striven for (or considered) by the respondent and not related to her/his current status we distinguish between university education (5/4/1), school education (5/4/2), occupation and other (5/4/3).

5/5 Work and Profession—Performance

Statements regarding performance in an occupational and company context, i.e. perception of performance expectations ("too lax," "not enough satisfaction," "stress,"

<p>"pressure to perform"), the degree of motivation and the reason for it (promotion prospects, money, sense of duty, enjoyment of work, self-confidence through success, social recognition etc.), the attitude towards job performance and principles like achievement principle, assessment of one's own performances, explanation of one's own performances (talent, for instance).</p> <p>5/6 Work and Profession—Acquisition of Competence</p> <p>Comments referring explicitly to the acquisition of competence and qualifications in the job and for the profession like further education, schooling (degrees), university degrees, vocational education, and, moreover, interview passages in which questions like "what are your qualifications?" and obstacles or aids are discussed.</p> <p>5/7 Work and Profession—Working Hours</p> <p>Interview passages relating to the temporal organization of work, including vacation regulation, time scheduling for work.</p>
--

Figure 10: Definition of the categories to the generic subject "Work and Profession" [51]

3.2.3 Case characteristics

For case comparison, the distinction according to case characteristics is indispensable because it allows a precise adjustment of the cases selected for an investigation to the question. [52]

Here, the entire interview is assigned to the codes of the category "case characteristics," not separate text passages.⁷

Interview wave	First, second or third interview
Region	Bremen or Munich
Qualified job	Qualified job decisive for inclusion in the sample
Gender	Male or female
Graduation	Graduation before the beginning of that particular apprenticeship that is decisive for the case's admission to the sample
Age	Subdivided into age groups: cohorts 1955-1964, 1965/66, 1967/68, 1969/70, 1971

⁷ Due to the assignment of the entire interview (all text lines) to a case characteristics category, the relevant text passages may be looked at per retrieval during evaluation by means of a logical "and"-connection. If, for instance, one would like to know the career perspectives of bank clerks in Bremen, all text lines assigned to the categories 30/3/1 ("bank clerk") and 20/2/1 ("Bremen") can be searched by means of the logical "and"-connection. Due to the assignment of all text lines to the case characteristic categories, all the interviews of bank clerks in Bremen may be found. By means of an "and"-connection of the categories 30/2/1, 30/3/1 and 4/3 ("career perspectives") exactly those statements can be located that are relevant for an investigation of career perspectives.

"BGM"	Biographical actions and orientations (BGM): a typology of different biographical orientations and action strategies developed by project members (cf. WITZEL & KUEHN, 1999)
Occupation of parents	Distinguishing between mother and father and particular groups: worker, skilled worker, employee, executive, civil servant, executive civil servant, self-employed person, homemakers
Consecutive numbers	Case code number (each interview partner is characterized by a specific number, i.e. "Willy" = case code number 1)

Figure 11: Definition of the categories "case characteristics" [53]

3.2.4 Summary: code logic of biographical interviews

A system logic distinguishing between case characteristics, thematic and temporal-biographical categories is recommended for all biographical respectively life-course studies in order to flexibly and in changing links classify and analyze text passages temporally, thematic oriented and according to a specific case selection. The following figure "code logic of biographical interviews" shows a schematic summary.

Temporal-biographical codes	Thematic codes	Coding according to case characteristics
Coding of text sequences	Coding of text sequences	Coding of the entire interview
For a temporal-biographical placing of statements, i.e. by division into biographical stages	For structuring statements according to subject-relevant main topics of the interview	For establishing differentiated choices for case analyses and case comparison

Figure 12: Code logic of biographical interviews [54]

3.2.5 Synoptic listing of the category system

Finally, all text-databank categories of biographical interviews of young adults (DABIE) and their code numbers are listed synoptically.

Temporal-biographical codes
1 Chronology after vocational education and training
1 1 Stage 1
1 1 1 Stage 1: Aspiration
1 1 2 Stage 1: Realization
1 1 3 Stage 1: Balancing
1 1 4 Stage 1: Information
1 2 Stage 2
1 2 1 Stage 2: Aspiration
1 2 2 Stage 2: Realization
...
2 Background
2 1 College/university education
2 2 School education
2 3 Vocation
3 Dismissed and thwarted options
4 Career perspectives
4 1 College/university education
4 2 School education
4 3 Vocation
Thematic codes
5 Work and profession
5 1 Content
5 2 Income
5 3 Company
5 4 Career prospects
5 5 Performance
5 6 Acquisition of competence
5 7 Working hours
6 Social network
7 Family and partnership
7 1 Family background
7 2 Partner
7 3 Marriage
7 4 Division of labor
7 5 Living
7 6 Partnership
7 7 Family founding
8 General orientations / attitudes
8 1 General ideas about life
8 2 Self-identification
8 3 Overall balancing
8 4 Gender-specific statements
9 Leisure

30 Case characteristics
30 1 Stage of interview
30 1 1 First interview
30 1 2 Second interview
30 1 3 Third interview
30 2 Region
30 2 1 Bremen
30 2 2 Munich
30 3 Qualified profession
30 3 1 Bank clerk
30 3 2 Clerical employee
30 3 3 Engine fitter
30 3 4 Car mechanic
30 3 5 Hairdresser
30 3 6 Retail clerk
30 4 Gender
30 4 1 male
30 4 2 female
30 5 Education
30 5 1 Secondary school certificate
30 5 2 Secondary school certificate (advanced)
30 5 3 Intermediate high-school certificate
30 5 4 Commercial school certificate
30 5 5 Technical college certificate
30 5 6 High-school diploma
30 5 7 No certificate
30 5 8 Other
30 6 Age
30 6 1 Cohort 1955/64
30 6 2 Cohort 1965/66
30 6 3 Cohort 1967/68
30 6 4 Cohort 1969/70
30 6 5 Cohort 1971/
30 7 "BGM"
30 7 1 Identification with company
30 7 2 Optimizing chances
30 7 3 Career focus
30 7 4 Wage worker habitus
30 7 5 Personality development
30 7 6 Self-employment habitus
30 8 Parents' occupations/professions
30 8 1 Mother / 30 8 2 Father
30 8 1/2 1 Worker / 30 8 1/2 2 Skilled worker
30 8 1/2 3 Employee / 30 8 1/2 4 Executive
30 8 1/2 5 Civil servant / 30 8 1/2 6 Executive civil servant
30 8 1/2 7 Self-employed / 30 8 1/2 8 Homemaker
30 8 1/2 9 Missing skills
30 9 Number of identity
30 9 1 1 Willy
30 9 1 2 Conny

Figure 13: The text databank category system of biographical interviews of young adults (DABIE) [55]

3.3 Realization and organization of the coding process

Using the category system established by our project after these preparations, the time-consuming coding of all interviews was carried out in 1997 by several students with our assistance. Coding as an interpretative act requires that one is familiar (or acquainted) with the question of the project, in our case basic data about school and job careers and other context information. To help the students get into the subject, we at first let them and the person in charge double-code the same interview. Then the result was compared, divergences discussed and checked by consulting the text passages. In doing so, some definitions of the categories were revised by way of explanation. To us it was also of the greatest importance that the students involved learned to not extract the text sequences

on the basis of a too narrow view and out of context, but to choose the blocks during the category assignment in a way that the different text sequences remain understandable.

Example for the context-related coding of text passages:

1201 **Julian:**

1202 Yes, indeed, that was enough for the time being. That's

1203 why I believe that we are not worse off than others. We

1204 also have much more free time. Therefore, we

1205 actually decided to, well, he was a planned child, too.

1206

1207 **Interviewer:**

1208 He was planned in fact?

1209

1210 **Julian:**

1211 Yes, he was planned. She also had two miscarriages before him.

Julian C. says in this text passage that his child was planned. He puts this statement in a logical context with the extent of free time he has ("therefore"). This text passage is assigned to category 7/7/1 "Children/Family Formation/Past."

However, the meaning of the first two sentences remains unclear. First, what the word "that" refers to, is just as unclear as the statement in the end ("that's why") that the couple is not worse off than others.

Secondly, since the context of using the term "free time" and the logical relation to founding a family remain unclear, the preceding text passages were examined for contexts that might reveal details on unclear statements. The text sequence given below was then added to the text extracted above. This text passage does not explicitly deal with the family-founding of Julian. But despite of this it makes sense to assign it to the category "Children/Family Formation/Past" because it explains Julian's understanding of "much more free time" and makes Julian's stated connection of leisure options and the realization of a family clearer. Besides, this text passage is also assigned to code 9 ("Free time"). Such a double-coding is useful in the case of an evaluation of all text passages with explicit statements on leisure-time activities in connection with statements on family formation. (By means of a logical "and"-connection of the categories, all text passages assigned to both codes can be searched.)

1146 **Interviewer:**

1147 But if you work during semester vacation, don't you ever

1148 have a holiday? How do you do it, or don't you need it?

1149

1150 **Julian:**

1151 Oh yes, I need it, but no, not now, not at the moment, no.

1152 Actually, I usually start working right after the tests or

1153 sometimes even parallel to them.

1154

1155 **Interviewer:**

1156 I see.

1157

1158 **Julian:**

1159 I got to do that, right now, because of the little one.

1160

1161 **Interviewer:**

1162 So you don't feel like saying sometimes: I got to have a

1163 break now, I am totally

1164

1165 **Julian:**

1166 No. Mostly we go on day trips, to Sylt for instance. N.

1167 and J. just spent a week on the isle of Sylt, last week.

1168 Well, no vacation at all, that's not right. Last October

1169 we were in Morocco, oh yes, just thinking of it.

1170

1171 Interviewer:
1172 So you were in Morocco. How long?
1173
1174 Julian:
1175 Oh yes, we go on a holiday, but mostly not during summer
1176 vacation, but some time in between when I have lectures
1177 and when I cannot work because of a break in production or
1178 if I have to wait because I get three-months-contracts and
1179 when they run out I have to wait a week until I get another
1180 one. So it is always a bit last-minute. And if the account is
1181 okay, well, I mean that I can take some money off (laughs)
1182 without the bank complaining. That's how we did it in October
1183 too.
1184
1185 Interviewer:
1186 So how long were you away?
1187
1188 Julian:
1189 For two weeks
1190
1191 Interviewer:
1192 Two weeks, that was relaxing.

Figure 14: Example for the context-related coding of text passages [56]

This careful instruction of the students was initially very time consuming. However, it paid off by the result of an elaborate definition and documentation of the category system and raised the competencies of students for their subsequent independent coding job. In order to guarantee the reliability of the coding, the text assignments were discussed and reviewed in small groups. BORN, KRUEGER and LORENZ-MEYER (1996, p.56) named this procedure "disjunctive group technique." [57]

The coding was done by means of the printed and text-line-numbered interview transcripts. Those line numbers to be assigned to a certain category were at first listed on a separate "input form." After the coding of the entire interview, they were added to the user program NUD.IST which had already been fed to the database and the index system as a basis of the databank before the beginning of the coding.

Input form—Case: Henry B. (third interview)	
5/2 Income	5/3 Company
535-542 2128-2136 2474-2501	2-162 544-825 911-2064 2986-2125 2235-2293 2347-2411

Figure 15: Example for an input form (excerpt) [58]

4. Exemplary Illustration of Options When Using the Text Databank

After having explained above principles and advantages of using a text databank during the evaluation process and after having presented the category system developed by us, we now want to illustrate by means of some examples of our project work the options which a user of our text databank can have. At this point, we first sum up the different evaluation data used by us as results and means of access when working with the databank (see Section 4.1). [59]

The following examples will illustrate the use of the text databank in the different phases of evaluation; the style of the evaluation method and, as a result, the method of using the text databank being dependent on the type and complexity of the objectives of different research projects.⁸

- Explorative start into a research field (see Section 4.2.1),
- analyzing a limited problem (see Section 4.2.2),
- complex analyses with the objective of developing a typology (see Section 4.2.3),
- sorting cases into an existing typology and validation of a typology (see Section 4.2.4). [60]

4.1 The technique of using the databank: evaluation data as results and means of access

Seen from the perspective of a databank user, the evaluation data on a whole are very important for the theory-guided category selection, subject to specific questions. Therefore, we place these evaluation data, which are to be understood as both results and means of access in using the databank, in a summary at the beginning of our illustration of the text databank's user options. [61]

In this context, we do not want to systematically illustrate the evaluation method following Grounded Theory, but limit ourselves to the role of the evaluation data as result and/or starting point for the use of the databank. By means of the inductive-deductive interplay of the theory-generating text-interpretation processes, the evaluation data "isolated case," "case comparison" and "ideas" are formed via the databank's retrieval function. These, in turn, are the starting point for a theory-guided searching with the help of the databank codes and will allow further analyses that will lead to a "saturation" of hitherto developed terms and categories. This interplay brings about new variations of evaluation data and also an extension, refinement and correction of the existing, empirically "saturated," theoretical concept. On all levels, validation processes will take place necessitating permanent re-analyses of text passages and with it a systematic access to the text databank.

8 For the general logic of evaluation, cf. WITZEL (1996).

The "technique" of using the text databank	
Category selection (retrievals)	<ul style="list-style-type: none"> • simple application or logical linkage • horizontal or vertical • temporal-biographical • subject-related • feature-related
Evaluation data as results and means of access when using the databank	<p>Summary files:</p> <ul style="list-style-type: none"> • biographical course outline • compressed retrievals • citations <p>Memo file:</p> <ul style="list-style-type: none"> • isolated case • case comparison • ideas • list of questions • thematic computer search • empirical groundwork/notes from previous evaluation phases (quantitative and qualitative)

Figure 16: Description of options of access to the text databank [62]

Summary files:

Summary "files" are formed by selected paraphrases and descriptions and create a clear data basis—reduced to the most necessary or concise information—for the following evaluation process documented in the memo file. [63]

Biographical course outlines (see Figure 7 in Section 3.2.1) summarize the course of careers. They are a central prerequisite for the use of the temporal-biographical codes of the text databank. [64]

Compressed retrievals are combinations of paraphrases or core statements assigned to different codes. They also comprise citations to the point. Compressed retrievals are provided with line numbers, ensuring for a deeper analysis or validation access to the original text of the databank (see Section 4.2.3). [65]

The citations file comprises subject-specifically ordered original text sequences (with reference to the databank source) that are considered of interest for further sentence-for-sentence analyses. [66]

Memo data:

Memos are, according to STRAUSS and CORBIN (1996, p.169), "[w]ritten minutes of analyses referring to the elaboration of the theory." Like in the case of the summaries, access to the original text of the databank is guaranteed. [67]

The isolated case file consists of specific summaries of central descriptive or analytical evaluation results. They may be arranged differently: at the beginning of the evaluation rather roughly, in the end summarizing the evaluations in different codes of the databank. [68]

The case-comparison file contains evaluation results of case contrasting. The result may be a typology. [69]

Isolated case analyses and case-comparison data correspond in the narrower sense to the "theoretical notes," i.e., they are "products of inductive and deductive thinking about real and possibly relevant categories, their characteristics, dimensions, relations, variations, processes and the matrix of cause" (STRAUSS & CORBIN, 1996, p.169). This work is subject to processes of communicative validation, i.e., the critical-constructive control particularly by other members of the research team. That means that new product variations arise again and again, "refuting, correcting, confirming, increasing and elucidating the former ones" (ibid, p.170). [70]

The suggestions file offers space for hypotheses, analytical ideas and open questions. And so, suggestions data accompany the evaluation process also as a way of expression for psychological and sociological imagination and creativity. Spontaneous, rough, theoretical ideas as well as associations, hypotheses, critical statements or doubts are collected here separately from the objective-summarizing, systematic-analytical presentation in isolated case analysis and in case comparison. Creativity may, for instance, also be a rather playful handling of different codes of the databank. STRAUSS and CORBIN (1996, p.12) emphasize the meaning of creativity as an indispensable element of Grounded Theory.

"Creativity becomes manifest in the researcher's ability to define categories appropriately, to let her/his mind wander, to form free associations that are necessary for asking stimulating questions and to draw comparisons that will lead to new findings. As we will see later, these comparisons will sensitize the examiner and enable him/her to identify possible categories and to realize relevant conditions and consequences when emerging in the data." [71]

Inquiry lists serve explorative analyses by means of the databank. They contain ideas about the arrangement of the search for suitable text passages in checking the usefulness of text passages assigned to chosen categories, from the perspective of a theoretically founded question (see Section 4.2.1). Insofar, inquiry lists partially represent what STRAUSS and CORBIN (1996, p.169) call "planning notes." [72]

Thematic search patterns combine open theoretical concepts—in the sense of "sensitizing concepts" (BLUMER, 1954, p.7)—with a systematized questioning of the empirical material. They make the examiner sensitive to realizing social meanings in specific fields of action. Udo KELLE accordingly speaks of "theoretical sensitivity" (GLASER, 1978), meaning "the availability of useful heuristic concepts, allowing identification of theoretically relevant categories of the data and the establishment of connections between these categories, i.e. hypotheses" (KELLE, 1994, p.312). In this sense, thematic search patterns follow the explorative evaluation, structuring the further course of research, especially with respect to using the text databank. [73]

During evaluation, one may fall back on empirical groundwork or notes of previous evaluation phases, where other questions were asked. By looking at results from another perspective, one may often actually realize for the first time the theoretical meaning of notes and ideas, putting them in other connections and assigning them to new categories. They may, for instance, form the starting point for further analyses with a correspondingly altered thematic search pattern. Previous quantitative results may also affect further qualitative analyses if they are used in the sense of a method combination and if they, for instance, form the starting point for a grouping of qualitative cases (see Section 4.2.2). [74]

4.2 The usage of the text databank depending on the objective's character and complexity

4.2.1 Explorative ways into a research field

We want to begin our presentation of using the text databank in different evaluation phases with the illustration of how to fall back on it, with the aim of a specific question, for explorative analyses regarding a new research topic. [75]

As an example, we refer to our evaluation of the influence of the hitherto in life-course research neglected category "region" in which the respondents live, to the status passages towards a career and further shaping of the biography (see SCHAEFER, KUEHN & WITZEL, 2001). The evaluation of the interviews referred at the same time to the subjective realization of and the individual analysis of occupational opportunity structures. We dealt with this problem against the backdrop of the difference of regional structures: Munich being a more promising labor-market region, Bremen being rather unfavorable. How are regional opportunities being seen? Are the respondents willing for geographical mobility? And does it depend on occupational opportunities in those two regions? Is there, on the contrary, a strong tie to the roots, aiming for a job close to home? And how is this tie expressed and explained? Do negative labor-market development, career demands and further education overcome this immobility? Which role do gender and the planning of a family play? [76]

If you look at these questions in view of the use of our text databank, a characteristic shows up: It is true that in the theoretical initial considerations, i.e. also in the interview guideline, "region" was considered an important context

variable—it shows up in the text databank's category system under "case characteristics" (30/2)—, but not a separate category of subjective orientations and actions. This means that the linking of different categories with the characteristic "region" does not necessarily bring to the surface explicit statements concerning region. Since the interviews lacked a corresponding coding of statements, opportunities of an appropriate use of the text databank had to be searched for as the first step. [77]

In a so-called explorative evaluation phase we intended to get a general idea of how much space "region" takes up in the interviews and in which connections. [78]

In a first attempt, we tested—as an alternative to the category system—the function "search text," which helps finding single words ("string search") or word connections ("pattern search"). For getting into the research topic, however, this search system is not suitable, as it takes for granted the concepts that—seen from the demands of a factual theory—only develop during the interpretative discourse. This means that the subjective relationship to region is not only or rarely expressed by the terms "home" or "Munich" respectively "Bremen" but in manifold linguistic variations like for instance, "here I am rooted," or "I grew up here," "I am anchored" to the surrounding people etc. [79]

Because of the unproductiveness of our word search, we again turned to the subject-related category system and tried to theoretically anticipate in which codes with thematic relevant statements were to be expected. In doing so, we did not aim at a rash restriction to a small number of categories but rather to a wide-scattered, thematic category selection by means of logical initial considerations, resulting from the guideline and the definition of categories. For these categories we worked out a questionnaire for region-specific problems, that fitted at least theoretically into the given thematic framework. We trusted that during the interview the subject searched for would be stimulated by the help of the interviewer's questions or by the respondents themselves. Using the questionnaire, it was a first step to make a choice of "productive" categories and cases. [80]

The structure of such a questionnaire is documented as an excerpt in the following example:

Dismissed and failed options (Category 3)	Are dismissed and failed options brought in connection with region-specific structures/chances? (general as well as individual decisions, options) Are region-specific obstacles in shaping a biography revealed?
Future career prospects (Category 4/3)	Which role do regional factors (place of residence, place of work etc.) play in the assessment of future outlooks? Are there region-specific patterns as to how future outlooks of the respondents change over time?

Figure 17: Example of a questionnaire [81]

Following the principle of the selective sampling in Grounded Theory (GLASER & STRAUSS, 1967), we started our evaluation with four cases each from the regions Bremen and Munich. With the help of NUD.IST, we set up retrievals for each case, i.e., we gathered a respondent's interview statements in these categories. These retrievals saved as reports onto a common word processing program (thus making them easily accessible also for validation of evaluation) were then evaluated by means of leading research questions. Central factors we reported case-specifically on rather sketchy isolated case memos. Because of the poorly structured search process, other additional instruments were created, reaching beyond isolated case analyses: a citations file, in which we composed particularly interesting text sequences to a sentence-for-sentence analysis, or a suggestions file, collecting notes regarding the whole subject, open questions, ideas about the kind of search for suitable text passages and other suggestions for further evaluation. They all serve an increasing "saturation" of hitherto developed terms and categories. The possibility to fall back on citations in their original wording is a fundamental condition for the result check carried out in a team discourse by two or three evaluators. So these data are, seen from the point of databank use, additional instruments to organize repeated access to the text databank on different levels of findings.

Excerpt from a suggestions file: "Melissa," hairdresser from Munich

Reason for spatial mobility:

Melissa F. would have moved to a place 170 km away (to cousin, parents will follow) because of a better income situation (I, 1471, 1491).

At the same time, there are reasons against spatial mobility:

1. working conditions despite improved income (exploitation due to family connections, II, 3578, III, 3928) and
2. mainly her boyfriend (I, 1524, II, 1136, 1266), who, on the one hand, did not want to interfere in her career plans, but who, on the other, was not willing to move as well—because of his own relatives (III, 3601, 3743, 3832)
3. With reference to her originally favorite profession (makeup artist): besides her objection against this job because of irregular working hours and night shifts, she

states the necessity of flexibility (travels) which would be harmful to her partnership (II, 2677).

However, there is also an *ambivalence* in the consideration of the pros and cons of spatial mobility: Looking back, it would, in her opinion, have meant a promotion of her independence (II, 2690), but she had lacked courage and now she is "tied ... to people," i.e., tied in emotional and social relations, here: house of the parents (II, 2708, III, 3903, 3928)

The following subjects attract attention and should be considered in the evaluation of other cases:

1. Subject "independence," i.e., standing on one's own two feet, in connection with leaving one's hometown;
2. Subject "sticking to familiar conditions" (in career and private life), i.e. refusal of spatial mobility because of "new" (unfamiliar) conditions;
3. Subject "ambivalence in weighing pros and cons of spatial mobility"

Figure 18: Example of a suggestions file [82]

4.2.2 Examination of a limited question

After explorative analyses, the next phase of research deals with the investigation of a limited question. [83]

Example: Realization of regional differences

During the next evaluation step, the question is narrowed down and specified. This specification is supported by a "thematic search pattern" guiding and structuring further case-comparison evaluations (see the following figure).

Thematic search pattern for realizing regional differences and for an individual analysis of regional contexts

1. Realizing regional differences

- Do individuals name the subject themselves, i.e., is the region factor brought up by themselves or by the interviewer?
- What are the topics of the differences? Labor market, work conditions, housing options or housing problems, region and people (idea of home)
- Where does the information come from? (Tips from the employment office, newspaper)

2. Results of individual attempts to come to terms with regional contexts on the basis of career and private interests

Basic or practical willingness for spatial mobility (divided into further distances like Bremen-Munich and smaller distances like sub regions Bremen-midtown and Bremen-uptown or Bremen and the adjacent "richer" area of Lower Saxony, i.e. commuters):
Under what conditions (explicitly or due to the situation) is there a readiness for mobility, i.e. what type of "pressure" are individuals subjected to? How do individuals relate private

and career aspects to each other? (For instance, do they accept private problems in favor of avoiding occupational complications?) Temporary change of location for education?

Refusal of spatial mobility (divided into further distances like Bremen-Munich and smaller distances like sub regions Bremen-midtown and Bremen-uptown or Bremen and the adjacent "richer" area of Lower Saxony, i.e. commuters): Is there a general uncertainty regarding new working and living conditions? Is there a fear of loss of friends and relatives, a clinging to staying nearby one's own family/partnership? Accommodation problems (two households, cheaper living with the family)? Travels and their side effects?

Figure 19: Example for a thematic search pattern [84]

In the subsequent evaluations, the thematic search pattern was limited to categories like "housing," "dismissed and failed options" and "future career prospects" that had turned out to be especially rich in information. [85]

Under consideration of the characteristics "gender," "profession" and "region," *further cases* were selectively included in our analyses. For further case comparison, depending on the state of knowledge, we selectively searched—following the "theoretical sampling" of Grounded Theory—for similar or different cases in the sampling. We found, how important it is to have, with the help of the *biographical course outlines*, at least a rough summary of a case's entirety, allowing an easily accessible overview.⁹ From the course outlines, one could see whether there had been a change of location in biographies of the respondents or whether there was no spatial mobility despite of phases of joblessness and less chances in the labor market. Case-specific summaries and general notes of extended case-contrasting analysis were put down in a *case-comparison memo* structured by the questions of the "subject-related search pattern." The *retrieval function* of the text databank, data connections in the *reports* and the collection of ideal-typical statements in the *citations file* allowed a repeated analysis of important text passages, until terms and concepts were empirically "saturated." [86]

The use of the text databank may—for this example of evaluation, the question of which was not directly covered by the given category system—be summed up as follows: Simple questions, related to individual categories and cases, served—in an initial evaluation—for a *specification of the question* and an *identification of rich "sites of discovery"* for the subject of research (see Section 4.2.1). [87]

In the second phase, we fell back on the groundwork made for explorative evaluation in bundling up analyses in a thematic search pattern with the purpose of structuring further evaluation. These instruments, the thematic search pattern, together with the *biographical course outlines*, enabled us to include in the analyses

9 For many cases, further elaboration from previous project phases were available, like "case presentations" and "biographical chronologies" (WITZEL, 1996, p.60) which we were able to refer to for interpretative integration of text sequences to be analyzed, into the overall context or into the form of the respective case.

—via the retrieval function of the text databank—a relatively large number of cases with rich text passages. [88]

Example: Individual ways of shaping and dealing with phases of discontinuity in work career

We want to show in the following, that an investigation of a limited question does not always require an explorative databank use, instead, case and category selection may also be founded theoretically, for it is based on empirical groundwork already done. [89]

The question of individual ways of shaping and dealing with phases of discontinuity in work career and different biographical motives and perspectives involved, results from the disputed theory of an increasing individualization of life courses and accompanying tendencies of growing differentiation, pluralization and de-standardization (cf. SCHAEFER, KUEHN & WITZEL, 2000). The quantitative part of the analysis focuses on the diversity and plurality of careers, on time and sequence of gainful employment, joblessness, education and family work. In qualitative analysis the actors are questioned about how they deal with the consequences of a possible disappearance of normal biographical orientation patterns and flexibility regarding the type and course of employment. What kind of orientations and action strategies do they develop in view of increasing options and constraints in biographical shaping? Is, for instance, discontinuity the manifestation of a "floundering" in obscure cyclical structures of the labor market and the educational system, thereby taking up precarious traits? Is it the result of strategic career planning or of the use of room for maneuver, allowing a correction of an unsatisfying entry in the labor market, a compensation of negative selection experienced in the educational system, or a correction of discrepancies between vocational reality and vocational demands? [90]

For data evaluation under the aspect of how discontinuities in the life stage investigated are being experienced, interpreted or shaped from the end of dual education until approx. eight years later, we included *empirical groundwork based on a quantitative level*. By means of different kinds of careers investigated in the quantitative interviews of our study (cf. SCHAEFER, 1999), we were able to form varied groups of respondents: cases with continuous careers, with shorter or longer phases of discontinuity, "university education" and "motherhood." Discontinuities were moreover subdivided into discontinuities because of change of vocation, change of company, or further education. Systematizing discontinuities in the life course on a quantitative level guarantees thereby a qualitative analysis of the entire scope of handling and shaping discontinuity. [91]

As a databank bridge from the case groups to identification of those cases with discontinuity serves the *biographical course outline*, listing career stations chronologically and by numbers (see Section 3.2.1). The codes help in using the *temporal-biographical* category system, in order to find relevant text passages referring to career stages. By searching for these text passages, the code will be specified according to aspiration, realization, balancing and information—

belonging to each passage; they can be displayed individually or as a whole. The following example of evaluation shows such a procedure.

Example: biographical course outline (excerpt) in the "case" of Frauke B., trained clerical worker, Munich

Stage 1: Apprenticeship "clerical worker" (graduation 1989)

Stage 2: Employed as trained clerical worker in training company (until July 1991)

Stage 3: 3 months "vacation," no gainful employment (until October 1991)

Stage 4: Employment with another company as trained clerical worker (until February 1992)

...

Evaluation by means of the text databank:

By dealing with a rather short phase of discontinuity during evaluation, we put the focus in this case on stage 3 when querying our databank, that has collected all statements involved (aspiration, realization, balancing).

To be able to analyze Frauke's discontinuity in connection with her change of company, we have to find out why she did not stay in her training company, why she waited three months before taking up a new job and how she managed to do so. Therefore, specific inquiries have to be made as to stages 2 and 4. In stage 2 we are looking for the person's assessments of the training and the firm in the category balancing. Here, we also investigate consequences of actions in connection with the question of remaining in the firm (potential hiring offer by the company). In stage 4, we are, under the category aspiration, looking for the reasons of the person for choosing a new company, and for the eventual effort made for the realization of this plan.

Figure 20: Example for making use of the temporal-biographical code logic in the evaluation process [92]

Case-specific evaluations were first bundled up in the form of *isolated-case memos*. They are the basis for case comparisons (collected in a separate *memo*) which enabled us to identify in our qualitative material five forms of shaping and dealing with discontinuity (for results referring, among other things, to this aspect of research, see SCHAEFER, KUEHN & WITZEL, 2000). Both steps allowed us, with the help of the databank program, to rely at any time on details in the original text or on the retrievals, inducing during these evaluations also an interplay of inductive and deductive steps. [93]

4.2.3 Complex thematic analyses aiming at developing a typology

The question of different form of anticipation of parenthood is much more complex compared to the preceding subject of research. Evaluations focus on the development of individual processes of planning and realizing a family over a period of approximately eight years. When do young adults start planning a partnership and a family? Are these short- or medium-term plans? Are these real

plans at all, or rather vague, abstract ideas? When are they to be realized? What are the reasons for postponing parenthood? [94]

Considering, for instance, findings in women and family research (cf. GEISLER & OECHSLE, 1996; SCHNEEWIND et al., 1996), stating that women with career ambitions tend to postpone motherhood, it becomes clear that career orientations and experiences may affect biographical options. Therefore, the planning of a family and its realization must be viewed in connection with and the coordination of a career. Which role do education, perspectives and vocational status play for type and time of parenthood? [95]

We will show in the following, how we dealt with this complex research topic (results: c.f. KUEHN 2004, WITZEL & KUEHN 2001), relating to the databank in different stages. And we shall once again refer to the presentation of the explorative retrieval of the databank during the first phase of evaluation, in order to elucidate embedding of this first step in the entire evaluation process. [96]

A subject-related retrieval on the basis of text passages assigned to the databank category (7/7/3) "Children/Family Formation/Future" can serve as a *first way into* the data material, in order to find out how the respondents describe their ideas, thoughts and plans regarding the forming of a family. This very specific questioning and the straight applicability of the coding system by a category directly assigned to the subject, allows a first thematic overview of a manageable abundance of material, including in the analyses all of the data. [97]

The following example documents, in parts, the structure of a horizontal or subject-related retrieval to the code (7/7/3) "Children/Family Formation/Future," showing some main statements (the actual retrieval consists of 593 lines) made by a respondent in all three interview waves.

Example: Frauke B., trained clerical worker—Excerpt from the subject-related retrieval to the code (7/7/3) "Children/Family Formation/Future"

1st Interview (May 1990)

...

2381 Frauke:

2382 You never know what's going to crop up (laughs).

2383

2384 Interviewer:

2385 What do you mean?

2386

2387 Frauke:

2388 Who knows? If children are arriving or something, I mean, I am already 22.
Just thinking of it,

2389	in three years I will be 25, and by then, I want to have a child.
...	
2nd Interview (July 1992)	
...	
1501	Interviewer:
1502	I have already interviewed many (respondents), clerical workers of your age, many of them are already
1503	planning a family. How about you? Have you thought of something like this yet?
1504	
1505	Frauke:
1506	No. The boyfriend I had some time ago, it was a relationship of many years, well, I mean, he
1507	wanted to have children or something, I mean, and I said: no, thanks. I am still much too young
1508	for that, and I have not changed my opinion yet. I can take my time.
...	
3rd Interview (April 1995)	
...	
2867	Interviewer:
2868	How about a family now?
2868	
2870	Frauke:
2871	Well, I actually haven't got, it is not the question of, well, at the moment I wouldn't have—
2872	might sound silly, but I haven't got time for something like that. ...

Figure 21: Example for a subject-related horizontal retrieval [98]

These brief statements show, besides the relationship between founding a family and age, the interesting aspect that in May 1990, Frauke was planning motherhood for the year 1993 (three years later), then, however, refrained from doing so. In the second interview, she denies her boyfriend's wish to have a baby, and even in April '95 she still postpones motherhood. First characteristics of that kind are collected as case notes in an *isolated case memo*, just as it is done with the other evaluation examples. *Ideas* for central subjects, arising especially from case comparison, are following. [99]

Frauke's statements are at the same time showing that there is a series of connected questions that were not answered in the excerpt at issue: What were the reasons for postponing motherhood? (private reasons: separation from boyfriend; job-related reasons: "no time") The respondent's replies concerning family formation will, therefore, have to be investigated more closely. [100]

Answering the complex question of a compatibility of career and family, an analysis of the category 7/7/3 "Children/Family Formation/Future" will, therefore, not be sufficient. For the following analyses and the accompanying use of the databank, theoretical knowledge respectively specific theories and questions (rather deductive procedure or "axial coding," as defined by Grounded Theory, cf. STRAUSS & CORBIN, 1996), will be linked with the present explorative evaluation (rather inductive procedure) by systematically including in the data analysis i.e. category 4 "Future Career Perspectives" and 8/4 "Gender-specific Statements" by means of logical connections of the codes (we call them "complex" retrievals). [101]

In addition, access to the text databank's *temporary-biographical category system* is necessary in order to be able to integrate in the analysis the development of career plans. For an identification of individual life-course stages, the biographical course outlines (see Section 3.2.1) were indispensable. [102]

The complexity of the subject and the corresponding searching of the text databank are accompanied by a wealth of information that had to be reduced and compressed for detailed treatment and case comparison necessary for a subsequent forming of categories. Here, we made a data-reducing and descriptive intermediate step the establishment of, as we say, "*compressed retrievals*." They consist of compressed text parts assigned to those codes that were condensed by means of paraphrasing or central statements as well as short and individually predominant citations (see the following example).

Example: Excerpt from the compressed retrieval "Frauke" (first interview)

Partner (Code 7/2)

Frauke's boyfriend is an electrician and works for the same company (I, 576).

Partnership (Code 7/6)

Frauke does not want to live with her boyfriend; she prefers to "see each other once in a while" instead of knowing that "he'll come home every day" (I, 2895). She would rather have her "own independence" (I, 2883). Yet, she is not so sure, thinking sometimes of moving together.

Children/Family Formation/Future (Code 7/7/3)

Frauke wants to have a baby in three years from now (I, 2391), but it might even be sooner than that. Her boyfriend wants to have children right away but she feels too young (I, 2451). Frauke would like to have two children. She would not go back to work until the children are ready for kindergarten (I, 2559).

Future Career Perspectives (Code 4)

Frauke is interested in further education (I, 1886). Either she will attend evening classes and look for another job afterwards or she will change to a company offering further education to its employees (I, 1976). Frauke wants to either become an accountant or have a job in the personnel department (I, 2056f.). In order to be eligible for courses of that kind, she needs another year of vocational experience (I, 1895).

...

Figure 22: Example of a compressed retrieval [103]

This intermediate step of establishing compressed retrievals serves for constructing case analyses in which information from compressed retrievals is again reduced and compared with and related to each other, in order to summarize the course of career and family biography. A look back at results of the first work phase or at original texts collected in the databank was always possible. Such a feedback proved to be necessary again and again, since new questions arose during ongoing evaluation for which the loss of information due to data reduction and compression was very high. [104]

Since case treatments of that sort involve considerable effort of evaluation, we first proceeded selectively and established a total of 30 case analyses. Selection of the cases included in these analyses was, on the first hand, made on the basis of subject-related retrievals established in a first evaluation step. In doing so, we took into account the scope of orientations that had already become apparent and the part that this subject occupied in the respective interviews. On the other hand, the selection was made under consideration of social-structural factors like gender, age, qualified job, and region. [105]

The case analyses formed the basis for a *case comparison* from which the typology of plans for establishing a family were deduced. In order to elaborate

central terms and typology dimensions, a *case-comparison memo* was drawn up containing case-comparing analyses. Here the central question was how, during the first years after the end of education, decision processes regarding family formation develop, in connection with a career, and how the latter is influenced by the anticipation of family formation. As a result of the case comparison carried out by the project team seven types were identified (cf. KUEHN, 1999; SCHAEPER & KUEHN, 2000). [106]

Looking at the role of the text databank in this evaluation, we can, in summary, attach the following meaning to it: The restriction to a subject-related code at the beginning allows a quick overview of the range of orientations and an analysis of their development during the course of longitudinal study. In order to be able to take into consideration interdependencies of plans for founding a family and career orientations, the inclusion of a larger range of subject-related codes is necessary. The databank's extensive text material has to be labor-intensively compressed for a multi-dimensional and complex case comparison. The possibility of relying on subject-related and temporal-biographical retrievals and the systematized access to individual original text passages not only facilitates the different evaluation steps but also the handling of large case numbers. [107]

4.2.4 Case assignment to an existing typology and its validation

In contrast to the previous examples, we have also used the text databank for analysis of a relatively large amount of interviews (over three waves of survey) and their assignment to an already existing typology. The longitudinal typology of the "modes of biographical agency" (BGM) (WITZEL & KUEHN, 1999, 2000) describes different orientations and action strategies of actors who developed such an account of their education and career experiences and consequences over a period of eight years. These types give an answer to the question which patterns of orientation and action are used by young adults to shape their vocational status passages and career episodes and whether or not they take responsibility for their development. On the basis of the dimensions work contents, career, income, qualification and company, we distinguish six types of biographical agency. [108]

The typology was developed—on the basis of case analyses and systematical case contrasting of a partial sample of about 50 cases (of a total of n=91 over all three interview waves)—in our project and validated by frequent re-analyses at a time when we were still unable to fall back on a databank system. So we were left with the problem of assigning the remaining 41 cases to the respective types. The extension of the database to the entire sample with the main sample characteristics "qualified job," "gender," and "region" allowed a maximization of case contrasting and, on the basis of systematical consideration of different structural contexts in the transition to employment, a final step of validation as well. [109]

First, we were able to use the database in the evaluation of those *subject-related codes* that were identical with the following categories: "work contents,"

"company," "career," "income" and "qualification." So for these categories *horizontal* or *subject-related retrieval* were first established for each case and over all three waves. Then, the material was compressed and integrated in an *isolated case memo*. This summary was the basis for the analysis of the respective BGM-type, involving—despite the availability of the text databank—a great amount of work due to the rich material. A final type-categorization of the cases was often possible only after long team discussions and sometimes thorough frequent reanalyses which were in turn, however, facilitated by the retrieval function of the data administration program. As explained in the previous examples, the databank method allowed at any time a validation of individual evaluation steps by going back to original text passages. [110]

Second, in order to be able to analyze the specific and contextual connection between similar or differing statements, we combined the *subject-related codes* with the *temporal-biographical codes*. By doing so, we selectively picked out the ways in question of dealing with different life-course passages over all three interview waves of the longitudinal study. By assessing orientations and actions within the scope of the BGM-analysis, we tried to find the central thread "biography-shaping" throughout all passages. Due to the BGM-concept's action-theoretical orientation, another central thread was to be found between the individual orientations and agency. Actually, one was able to jump to and from between the individual stages by means of the text databank and the administration program along with it, in order to see if or to what extent, for instance, an intended further education was realized or not. [111]

4.2.5 Summary of the different types of usage for our text databank

The following table illustrates the use of the text databank in connection with different research projects. As a preliminary heuristic analysis of varying exemplary evaluation strategies it allows an overview of the possibilities to use the text databank in different phases of research with the extreme poles "Getting into a research field" and "Dimensional analysis by means of an already existing typology."

<p>Getting into a research field</p>	<ul style="list-style-type: none"> • <i>Selection of rich categories</i> in the first explorative phase: a rather wide-spread thematic category selection with help of logical initial considerations resulting from the guideline and the definition of categories. Objective: Specification of the problem and identification of rich codes, drawing up of a <i>questionnaire</i> for the evaluation of the coding of the selected categories regarding their thematic richness <p>or</p> <ul style="list-style-type: none"> • Selection of one single category, evaluation of all statements in order to determine their scope, identify cross connections to other categories and to develop affiliated questions <p><i>Evaluation data:</i></p> <ul style="list-style-type: none"> • <i>Isolated case memos</i>, with rather rough case-related analyses • <i>Ideas</i>, with conceptions and proposals for evaluation • <i>Citations</i>, with original text passages that seem to be of interest
<p>Examining a limited problem</p>	<ul style="list-style-type: none"> • <i>Case and category selection</i> with help of the codes viewed in the explorative stage and the theoretical previous knowledge (i.e., grouping for analysis) • when limiting the matter of investigation to a specific life stage, one can preferably fall back on the temporal-biographical system • due to the specific problem and herewith connected limited material, all or most of the respondents can be included • <i>thematic search pattern</i> with specific problems and evaluation perspectives for case selection and case-comparing evaluation
<p>Complex analyses with the objective of developing a typology</p>	<ul style="list-style-type: none"> • <i>Case and category selection</i> with help of the codes viewed in the explorative stage and the theoretical previous knowledge (i.e., grouping for analysis) • when selecting cases, one must not only take into account the extent of the data material but also consider the incorporation of unusual cases and social-structural characteristics <p><i>Different evaluation steps:</i></p> <ul style="list-style-type: none"> • <i>Compressed retrievals</i> of the rich data material stemming from complex retrievals • Construction of category-comprehensive, detailed <i>isolated case analyses</i> as a basis for case comparison • a case-comprehensive <i>memo</i> can serve as case comparison and type categorization
<p>Evaluation serves the typological case analysis and typology validation</p>	<p><i>Dimensions and definitions</i> of a typology developed already with help of a smaller sample are the basis for a <i>selection</i> of subject-related and temporal-biographical categories</p> <p><i>Case selection:</i> All respondents</p> <p><i>Evaluation:</i> For each case the drawing up of an isolated case <i>memo</i> in which central points of view are compressed and analyzed according to categories</p>

Figure 23: Use of the text databank in the different evaluation phases, depending on type and complexity of the objective [112]

5. Summary: Using the Text Databank in Qualitative Evaluation

A databank along with text-analysis software can be of great help in administrating and structuring text material necessary for qualitative social research. [113]

Access to text sequences of qualitative interviews that have not been taken in the sense of a "guideline bureaucracy" (HOPF, 1978), i.e. showing no strict flow pattern of questions, is—particularly in the case of larger samples, longer interviews and more complex questions—hard to accomplish by means of the usual "cut-and-paste" strategy. The databank as a kind of over dimensional card-index box allows—with its categories and codes—a reduction of data necessary for evaluation by the option of a limited and fast access to relevant text passages. A steady reflection of original text passages is not only necessary because of the inductive-deductive interplay in the evaluation process. A databank disposing of

such a variety of retrieval functions will also facilitate the discursive validation of results on different interpretative levels of abstraction as well as the reanalysis due to different foci of evaluation, and last but not least the carrying out of secondary analyses. [114]

Our categories or codes developed as a classifying databank system concern relatively broad terms poor in theory. Therefore, these codes are not to be understood as "core categories" that emerge, in the sense of Grounded Theory, at the end of an evaluation process, rather they are thematic "containers," offered during every evaluation support and material for further analyses and herewith connected to theoretical forming of concepts. [115]

According to our experience in applying the databank (see the overview outline regarding its use in Section 4.2.5), further instruments supporting the search for rich "sites of discovery" and the maintenance of a general idea of extensive text amounts and interpretation results must be developed as to the complexity of the problems that may arise during the individual evaluation phases. In order not to lose the context relation of text passages, it takes the counter balance of a summarizing review of the total of cases. For some specific problems a rough overview of course data is sufficient, as, for example, in the form of the biographical course outline. However, regarding more complex research projects—i.e. the construction or use of a typology—this will not be enough. In addition to the category-related questions and evaluations, procedures that are also applicable in the databank must be used, with the help of which the text material is compressed, comprehensively analyzed by different categories and summed up. [116]

The construction of our databank required a considerable amount of time from a lot of people. For an analytical handling of a rather rare load of material of more than 300 problem-centered biographical interviews, there was, as to our experience, no alternative to a computer-aided data administration. The costs and time involved are much higher if one considers the extensive production of the databank's text basis—the painstaking interview transcriptions, not to speak of the time and costs involved for the rides to the different places and regions to do interviews lasting an hour or more. In planning research projects, it should therefore be examined if, instead of producing new statistics, the already existing databanks can be considered a possibility for the carrying out of secondary analyses. [117]

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