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Grounded Theory and Theoretical Coding

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BACKGROUND

Grounded theory (GT) is a research approach in which data collection and analysis take place simultaneously. Each part informs the other, in order to construct theories of the phenomenon under study. GT provides rigorous yet flexible guidelines that begin with openly exploring and analysing inductive data and leads to developing a theory grounded in data. Induction starts with 'study of a range of individual cases and extrapolates patterns from them to form a conceptual category' (Charmaz, 2006: 188). Nevertheless, instead of pure induction, the underlying logic of GT actually moves between induction and abduction. Abduction means selecting or constructing a hypothesis that explains a particular empirical case or set of data better than any other candidate hypotheses, as a provisional hypothesis and a worthy candidate for further investigation.

GT was originally developed by sociologists Barney Glaser and Anselm Strauss (1967), and has since then been further developed in different versions, such as Glaserian GT (e.g., Glaser, 1978; 1998; 2005), Straussian GT (Strauss, 1987; later developed in collaboration with and furthered by Corbin, see Corbin and Strauss, 2008; Strauss and Corbin, 1990; 1998), constructivist GT (Bryant, 2002; Charmaz, 2000; 2003; 2006; 2009; Thornberg, 2012; Thornberg and Charmaz, 2012), Clarke's (2003; 2005) postmodern version called situational analysis, and Multi-GT (Goldkuhl and Cronholm, 2010). This chapter emphasizes constructivist GT.

Glaser's intellectual background had focused on rigorous training in quantitative methodology and middle-range theories at Columbia University in New York. He also had studied literature for a year at the University of Paris, and became familiar with the literary analysis method called *explication de text* – a method of careful reading and line-by-line comparisons of text. After his academic training, Glaser continued working at Columbia University under the guidance of Paul F. Lazarsfeld and Robert

K. Merton. In contrast, Strauss studied at the University of Chicago (within the so-called 'Chicago School') where he continued his undergraduate interest in pragmatism and further developed his interests in symbolic interactionism, ethnographic field studies and comparative analysis. At Chicago, the works of John Dewey, Charles S. Peirce, Robert Park, Herbert Blumer and Everett Hughes influenced his thinking (for further reading on Glaser and Strauss's backgrounds, see Morse et al., 2009).

From the beginning, GT had mixed epistemological roots in positivism, pragmatism and symbolic interactionism. Although Glaser and Strauss's GT took a critical stance towards the positivistic mainstream social research of the 1960s, at the same time they incorporated a taken-for-granted vocabulary and discourse of positivism when arguing for the scientific legitimacy of GT. Hence, the original GT as well as Glaserian GT later on have both been challenged for their unproblematic and rather naive realist view of data, that data 'could speak for itself', and the possibility of obtaining objective data 'by looking at many cases on the same phenomenon, when joint collecting and coding data, to correct for bias and make the data objective' (Glaser, 2003: 173; for examples of the critical voices, see Bryant and Charmaz, 2007a; Charmaz, 2000; 2006; Clarke, 2005; Corbin and Strauss, 2008; Olesen, 2007; Thornberg, 2012).

In contrast, Charmaz (1995; 2000; 2003; 2006; 2009) and others (e.g. Bryant, 2002; Mills et al., 2006) have developed and argued for a constructivist version of GT, rooted in pragmatism and relativist epistemology. This position assumes that neither data nor theories are discovered, but researchers construct them as a result of their interactions with their participants and emerging analyses (Charmaz, 2006; 2009; Thornberg and Charmaz, 2012). Researchers and participants co-construct data, and the researchers' socio-cultural settings, academic training and personal worldviews inevitably influence these data (Charmaz, 2009; Mills et al., 2006). This position takes a middle ground between realist and postmodernist positions (Charmaz, 1995) by assuming an 'obdurate reality' while also assuming multiple realities and multiple perspectives on these realities (Bryant and Charmaz, 2007a; Charmaz, 1995; 2009). Social realities are mutually constructed through interaction and may be redefined, and, thus, are somewhat indeterminate.

AIMS OF DOING GT RESEARCH

When doing a GT study, researchers aim to investigate individual and collective actions and social and social psychological processes, such as everyday life in a particular social setting, organizational changes, establishing and maintaining workplace practices, identity transformations, problem-solving processes in social groups, and responding to and coping with life changes. In GT, researchers concentrate on what people do and the meanings they make of their actions and on the situations in which they are involved.

Numerous manuals provide different and more or less rigid guidelines for conducting GT research (e.g. Charmaz, 2003; 2006; Clarke, 2005; Corbin and Strauss, 2008; Glaser, 1978; 1998; Glaser and Strauss, 1967; Strauss and Corbin, 1990; 1998). As constructivist grounded theorists, we view our methodological strategies as flexible guidelines rather than rigid prescriptions (Charmaz, 2006; Thornberg and Charmaz, 2012). Over the decades GT has spawned several related versions and some differ a lot from the original. Bryant and Charmaz (2007b) view GT as a family of methods, in accordance with Ludwig Wittgenstein's concept of *family resemblances*. Thus they view various approaches to GT as including numerous resemblances and similarities between the 'members' of the family, as well as differences and disputes. Charmaz (2010: 11) clarifies the points of convergence between versions of GT as follows:

1. Conduct data collection and analysis simultaneously in an iterative process.
2. Analyse actions and processes rather than themes and structure.
3. Use comparative methods.
4. Draw on data (e.g. narratives and descriptions) in service of developing new conceptual categories.
5. Develop inductive categories through systematic data analysis.
6. Emphasize theory construction rather than description or application of current theories.
7. Engage in theoretical sampling.
8. Search for variation in the studied categories or process.
9. Pursue developing a category rather than covering a specific empirical topic.

DATA GATHERING AND THEORETICAL SAMPLING

Whereas researchers from other traditions first collect all data and then analyse them, grounded theorists gather data and conduct analysis in parallel throughout the entire project (Charmaz, 2000; 2006; Glaser, 1978; 1998; Glaser and Strauss, 1967; Strauss and Corbin, 1990; 1998). GT is not limited to any particular method for gathering data but uses data collection methods that best fit the actual research problem and the ongoing analysis of the data. Thus GT remains open to a range of data collection methods, such as field observations (see Marvasti, Chapter 24, this volume), informal conversations (see Toerien, Chapter 22, this volume), qualitative interviews (see Roulston, Chapter 20, this volume), focus groups (see Barbour, Chapter 21, this volume), documents (see Coffey, Chapter 25, this volume), questionnaires and diaries. In addition to qualitative data, Glaser (1992; 1998; 2008) argues that even quantitative data can be used in GT. Although methods are just tools, the choices of methods have consequences: '*How* you collect data affect *which* phenomena you will see, *how, where,* and *when* you will view them, and *what* sense you will make of them' (Charmaz, 2006: 15). Hence, reflexivity (see May and Perry, Chapter 8, this volume), flexibility, focus and the openness for shifting, adding or combining methods during the research project comprise essential aspects of data gathering.

At the outset, the initial choice of method or a combination of methods of data collection depends on the research problem. If, for example, a research team aims to explore a particular social group of high school students' resistance to school rules, they might start with identifying, gaining access to and doing field observations in one or more schools in which disciplinary problems, vandalism and violence occur and students show disinterest in and resistance to school. Nevertheless, questions, clues and incomplete insights might emerge during the research that lead the researchers to choose or construct new data collection methods and to revise earlier ones. In the example above, researchers' analysis of their field notes might lead them to begin conducting qualitative interviews with a particular focus and with a particular subset of students. Thus, the analysis of data evokes insights, hunches, 'Aha!' experiences, or questions that might lead researchers to change or add a new data collection method. Once they have a tentative theoretical category to develop, they focus this interplay between data collection and analysis on obtaining the data to illuminate this category, fill out its properties and define its implications. This process, called *theoretical sampling*, has distinguished GT as an analytic approach in qualitative inquiry.

According to Glaser and Strauss's (1967: 45) original definition, theoretical sampling refers to 'the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyzes his data and decides what data to collect next and where to find them'. It keeps the researchers focused on checking and refining their constructed codes and categories, while simultaneously they avoid becoming overwhelmed and unfocused in data collection and analysis. Theoretical sampling should not be confused with sampling strategies used in other kinds of research, in which sampling decisions

occur at the planning phase about who, when, what and where to sample (see Rapley, Chapter 4, this volume). Even in a GT study, researchers have to make such initial sampling decisions (e.g. convenience sampling or purposeful sampling) during the planning phase. For example, if researchers aim to investigate the experiences of living with chronic pain, they might plan to interview about 30 patients with chronic pain. Nevertheless, once researchers begin collecting data, moving between data and analysis 'takes over'. Early leads and ideas from their nascent analyses direct them as to where to go, whom to ask or observe, and what kind of data to collect next. For example, theoretical sampling might lead researchers to revise or add new questions in their interview protocol after constructing a tentative theoretical category, to conduct more interviews with the same or new participants, asking participants to make diary notes, to investigate medical journals, or to conduct field observations in some participants' everyday life.

CODING

Coding is about 'naming segments of data with a label that simultaneously categorizes, summarizes, and accounts for each piece of data' (Charmaz, 2006: 43). Coding begins directly as researchers first gather data for a GT study. Throughout the research project, they engage in this interplay between data collection and coding. By coding, researchers scrutinize and interact with the data as well as ask analytical questions of the data. They create their codes by defining what the data are about. According to constructivist GT (Charmaz, 2000; 2003; 2006), coding consists of at least two phases: *initial coding* and *focused coding*. However, coding is not a linear process, but in order to be sensitive to theoretical possibilities, researchers move back and forth between the different phases of coding, although they do more initial coding at the beginning than at the end of the study.

Initial Coding

When researchers conduct initial coding (also known as *open coding*), they compare data with data; stay close to and remain open to exploring what they interpret is happening in the data; construct and keep their codes short, simple, precise and active; and move quickly but carefully through the data (Charmaz, 2006). To scrutinize and code the data, grounded theorists ask questions: 'What is this data a study of?', 'What category does this incident indicate?', 'What is actually happening in the data?' (Glaser, 1978: 57), 'What is the participant's main concern?' (Glaser, 1998: 140), 'What do the actions and statements in the data take for granted?', 'What process(es) is at issue here? How can I define it?', 'How does this process develop?', 'How does the research participant(s) act and profess to think and feel while involved in this process?', 'What might his or her observed behavior indicate?', 'When, why, and how does the process change and what are its consequences?' (Charmaz, 2006: 51). These analytical questions serve as flexible ways of seeing, not as mechanical applications to search for and define what is happening in the data and to look at the data critically and analytically.

The researcher reads and analyses the data word by word, line by line, paragraph by paragraph, or incident by incident, and might use more than one of these strategies. For example, in her study of suffering, Charmaz (1999) engaged in both line-by-line coding of interviews with her research participants and incident-by-incident coding of interview stories about obtaining medical help during crises. Every code the researcher generates has to fit the data (instead of forcing the data to fit the code), and hence should earn its way into the analysis (Glaser, 1978). Coding helps researchers to see the familiar in a new light; gain distance from their own as well as their participants' taken-for-granted assumptions; avoid forcing data into preconceptions; and to focus further data collection, including the potential of leading the researchers in unforeseen directions.

This careful reading and coding encourages grounded theorists to confirm and saturate their 'emerged' codes and minimize missing important codes or significant details in data (Glaser, 1978). Coding with gerunds (noun forms of verbs) helps the researchers to detect and remain focused on process and action (Charmaz, 2006). Hence, a good rule of thumb to use in a flexible and sensitive way is to seek to label codes with gerunds such as 'avoiding attention', 'becoming sad' and 'giving up future orientation'.

Table 11.1 illustrates an example of line-by-line coding (Thornberg et al., 2013). The excerpt is from an interview with a 17-year-old upper secondary school student who had experienced being bullied as a younger child in school. Note that the authors kept initial codes close to the relevant data and focused on process and action.

Table 11.1 Initial coding

Initial coding	Interview data	
	Interviewer:	How did the bullying affect you during this period?
Becoming insecure; self-doubting; loss of self-confidence; thinking bullying depends on wrongness with self; believing bullies' negative image of you; getting bad self-confidence from being bullied; becoming passive out of social fear	Eric:	I started to feel very insecure. In other words, I started to doubt myself more and more. I lost my self-confidence. I thought there has to be something wrong with me, because otherwise they wouldn't have picked me as a victim. I believed all the stupid things they said about me. So, I really got very bad self-confidence from all the bullying. I really didn't dare to do things I wanted to do when other people were nearby.
	Interviewer:	The bullying gave you bad self-confidence?
Believing of the wrongness with self as a result of being bullied; feeling self-worthlessness; being globally disliked	Eric:	Yes, and it made me believe there was something wrong with me, that I was stupid. I felt worthless, that no one would like to be with me.
	Interviewer:	You said before that you thought they bullied you because there was something wrong with you. Can you tell me more about that?
Being bullied because of being different	Eric:	Because I was a different or a bit odd, I wasn't like them.
	Interviewer:	You became bullied because you were different?
The constant message of being nerdish; a sense of not fitting in as a result of being bullied; inferring social deviance of self from the experiences of peer victimization; a lingering sense of being different	Eric:	Yeah, that was what I was told all the time, that I was a nerd, I wore ugly clothes and stuff like that. But it was only when the bullying started that I began to feel different, that I didn't fit in. I didn't think like that before. But when they started to tease me, push me around, and when I was frozen out all the time, I began to understand that I was different. I can still remember that feeling.
Avoiding bullying	Interviewer:	What did you do when you got bullied at school?
	Eric:	I tried to avoid it.
	Interviewer:	How?
Inhibiting the social presence of self; believing social invisibility prevents bullying; inaction protects self from embarrassment and teasing	Eric:	For example, by not putting my hand up during the lessons, being quiet and not standing out. I thought if I didn't stand out, if they wouldn't notice me, then they wouldn't bully me. If I didn't say or do things when other people were around, nothing embarrassing would happen, no one would tease me.
	Interviewer:	What do you mean?
Standing out leads to more bullying; becoming silent; avoiding attention	Eric:	Well, if I said something, if I tried to take some space, then they would just say, 'We have to put him down! We have to bully him even more!' So, the best thing was to be quiet and not be noticed.

As grounded theorists, we treat our constructed codes as provisional and open to modification and refinement to improve their fit with the data. While coding, we use the *constant comparative method*, which means that we compare data with data, data with code, and code with code, to find similarities and differences (Glaser and Strauss, 1967). Initial coding and constant comparative practices lead to sorting and clustering of initial codes. In turn, sorting and clustering codes might result in revising codes as well as constructions of new, more elaborated codes by merging or combining identical or similar initial codes.

Focused Coding

As a result of doing initial coding, the researcher will eventually 'discover' the most significant or frequent initial codes that make the most analytical sense. In focused coding (also known as *selective coding*), the researcher uses these codes, identified or constructed as focused codes, to sift through large amounts of data (Charmaz, 2000; 2003; 2006). According to Glaser (1978; 1998; 2005), the researcher has to look for, identify and select *one* core category, which refers to the most significant and frequent code that is also related to as many other codes as possible and more than other candidates for the core category. The identified and chosen core category guides further data gathering and coding.

However, seeking one core category can limit the analytic rendering of the data and the theoretical usefulness of the completed report. We have argued earlier that Charmaz (2003; 2006) offers a more sensitive and flexible approach in her guidelines for focused coding: 'The constructivist position of grounded theory is more flexible by being open for more than one significant or frequent initial code in order to conduct this further work. Such openness also means that the researcher continues to determine the adequacy of those codes during the focused coding' (Thornberg and Charmaz, 2012: 48). Researchers still remain sensitive and open to modifying their focused codes and to being surprised by the data.

The study of upper secondary students and university students who had a previous history of being bullied in school (Thornberg et al., 2013) demonstrates this point. During the focused coding, the authors established a limited set of focused codes – codes that had previously been identified and elaborated by carefully comparing and sorting many initial codes. These codes subsequently guided their work. Charmaz (2006) states that focused codes are more directed, selective and conceptual than initial codes. The example in Table 11.2 illustrates a focused coding

Table 11.2 Focused coding

Focused coding	Interview data	
Self-inhibiting	Eric:	For example, by not putting my hand up during the lessons, being quiet and not standing out. I thought if I didn't stand out, if they wouldn't notice me, then they wouldn't bully me. If I didn't say or do things when other people were around, nothing embarrassing would happen, no one would tease me.
	Interviewer:	What do you mean?
	Eric:	Well, if I said something, if I tried to take some space, then they would just say, 'We have to put him down! We have to bully him even more!' So, the best thing was to be quiet and not be noticed.
Self-doubting	Ann:	I felt that there had to be something very wrong with me because everyone picked on me. I felt that I was worthless. I felt that I really must be a boring–, a very boring person because everyone avoided me and because they teased me and because of all things they did to me. I never thought that I didn't want to live anymore. I didn't think that way. I don't think I did. At least I can't recall I did. I just felt that I must be messed up in my head, and that I was much more inferior to the others.

of two interview transcription pieces – the first from the interview with Eric that was exemplified in Table 11.1 and the second from an interview with Ann, a 26-year-old university student.

As can be seen in Table 11.2, focused codes capture and synthesize the main themes in the students' statements. Thornberg et al. (2013) constructed the focused code 'self-inhibiting' through the constant comparison of initial codes like 'becoming passive out of social fear', 'inhibiting the social presence of self', 'believing social invisibility prevents bullying', 'becoming silent', and so on. The focused code 'self-doubting' was first selected among the initial codes as it captured many other initial codes, such as 'becoming insecure' and 'loss of self-confidence', and then merged with another focused code, 'developing self-worthlessness', which captured another set of initial codes, like 'feeling self-worthlessness' and 'getting bad self-confidence from being bullied'. The authors merged these two focused codes as a result of constantly comparing these two codes and the initial codes they captured. Subsequently Thornberg et al. chose the label 'self-doubting' over the label 'developing self-worthlessness', because it incorporated all the initial codes that constituted the new and more elaborated focused code.

When conducting focused coding, grounded theorists explore and decide which codes best capture what they see happening in the data, and raise these codes up to tentative conceptual *categories*. This process means giving these categories conceptual definitions and assessing relationships between them (Charmaz, 2003; 2006). For example, the authors later conceptualized the focused code 'self-inhibition' in Table 11.2 as a category defined as a self-protecting strategy in which bullied students held themselves back in social situations in order to avoid being noticed in hope of avoiding being picked on (Thornberg et al., 2013). To generate and refine categories, researchers have to make many constant comparisons such as: (1) comparing and grouping codes, and comparing codes with emerging categories; (2) comparing different incidents (e.g. social situations, actions, social processes, or interaction patterns); (3) comparing data from the same or similar phenomenon, action or process in different situations and contexts (Thornberg and Charmaz, 2012: 50); (4) comparing different people (their beliefs, situations, actions, accounts or experiences); (5) comparing data from the same individuals at different points in time; (6) comparing specific data with the criteria for the category; and (7) comparing categories in the analysis with other categories (Charmaz, 2003: 101).

Theoretical Coding

According to Glaser (1978), when employing *theoretical coding* researchers analyse how categories and codes constructed from data might relate to each other as hypotheses to be integrated into a theory. To achieve this integration, researchers have to inspect, choose and use *theoretical codes* as analytical tools to organize and conceptualize their own codes and categories with each other to develop a coherent GT (see Glaser, 1978; 1998; 2005). Holton (2007: 283) defines theoretical coding as 'the identification and use of appropriate theoretical codes to achieve an integrated theoretical framework for the overall grounded theory'. What are theoretical codes and how can these be distinguished from the codes and categories that the researchers generate during initial and focused coding?

Initial and focused coding generate data-driven and empirical codes and categories by building on constant comparisons of data, data and codes, and codes and codes. In contrast, theoretical codes consist of ideas and perspectives that researchers import to the research process as analytic tools and lenses from outside, from a range of theories. Theoretical codes refer to underlying logics that could be found in pre-existing theories. They include ideas, terms or abstract models that 'specify

Table 11.3 Examples of Glaser's coding families

Coding families	Theoretical codes
The 'Six C's'	Causes, contexts, contingencies, consequences, covariances and conditions
Process	Phases, progressions, passages, transitions, careers, trajectories, cycling, etc.
Basic family	Basic social process, basic social psychological process, basic social structural condition, etc.
Cultural family	Social norms, social values, social beliefs, etc.
Strategy family	Strategies, tactics, manipulation, dealing with, positioning, dominating, etc.
Degree family	Limit, range, grades, continuum, level, etc.
Type family	Type, kinds, styles, classes, genre, etc.
Dimension family	Dimensions, sector, segment, part, aspect, section, etc.
Identity-self family	Self-image, self-concept, self-worth, self-evaluation, identity, transformations of self, self-realization, etc.
Consensus family	Agreements, contracts, conformity, homogeneity–heterogeneity, conflict, discensus, etc.
Paired opposite family	Ingroup–outgroup, in–out, manifest–latent, explicit–implicit, overt–covert, informal–formal, etc.
Cutting point family	Boundary, cutting point, turning point, breaking point, deviance, etc.

Source: Adapted from Glaser (1978; 1998)

possible relationships between categories you have developed in your focused coding … [and] may help you tell an analytic story that has coherence' (Charmaz, 2006: 63). Glaser (1998; 2005) argues that studying many theories across different disciplines enables researchers to identify theoretical codes embedded in them, and thus develop and enhance their knowledge base of theoretical codes: 'One reads theories in any field and tries to figure out the theoretical models being used. … It makes the researcher sensitive to many codes and how they are used' (Glaser, 1998: 164). According to Glaser (2005: 11), the more theoretical codes the researchers learn, the more they have 'the variability of seeing them emerge and fitting them to the theory'. As a guide for researchers, Glaser (1978: 72–82) compiled a list of theoretical codes organized in a typology of *coding families*, to which he then made some later additions (Glaser, 1998: 170–5; 2005: 21–30). In Table 11.3 we present a sample of his coding families.

Whereas Glaser includes many more coding families in his list (1978; 1998; 2005), he acknowledges that his list is not exhaustive. His set of coding families also reveals considerable overlapping (e.g. compare the process family with the basic family or the cutting point family). Furthermore, Charmaz (2006) points out that several coding families are absent from Glaser's list and other coding families appear rather arbitrary and vague. As we have argued elsewhere, instead of being hypnotized by Glaser's list of coding families, researchers should investigate all kinds of extant theories that they encounter in different research disciplines or domains to figure out for themselves their embedded theoretical codes (Thornberg and Charmaz, 2012). Glaser's depiction of theoretical coding amounts to importing theoretical codes consciously. Hence, adopting and applying theoretical codes poses similar risks of preconceiving the analysis that Glaser (1992) accused Strauss and Corbin (1990) of doing. We see the implications of Karen Henwood and

Nick Pidgeon's concept, 'theoretical agnosticism' (2003: 138), as an advance and antidote to applying theoretical codes. They argue that researchers must remain critical of applying theories throughout the research process.

Glaser (1978; 1998; 2005) warns researchers not to get blinded by one theoretical code or forcing a personally preferred theoretical code onto the analysis as an insensitive 'pet code'. A combination of many theoretical codes most often captures the relationships between categories and is therefore typically used when relating and organizing categories and integrating them into a GT. Glaser (1978) argues that theoretical codes must earn their way into the analysis by the work of careful and constant comparisons between theoretical codes, data, empirically generated codes and categories, and memos (see below). Theoretical codes must work, have relevance, and fit the data and generated and refined categories. In their study of former victims' experiences of school bullying, Thornberg et al. (2013) took advantage of many theoretical codes to develop their categories further and to investigate their relations to each other to integrate them into a GT of victimizing of school bullying. Examples of the theoretical codes that Thornberg et al. used during coding that preceded the findings were basic social psychological processes, phases, deviance, strategies, self-transformation and social norms (see also the later memo excerpt and our discussion below). Abduction supplies the main underlying logic in theoretical coding. Researchers explore their knowledge base of theoretical codes and compare them with their data and their own constructed codes and categories. Then they choose (or construct) and use the 'best' theoretical codes as analytical tools to relate categories to each other and integrate them into a GT. Hence, theoretical coding is about abduction, not deduction.

ABDUCTION IN GT

The American pragmatist philosopher Charles S. Peirce first introduced and further developed the concept of abduction (e.g. Peirce 1960; 1979). In order to differentiate between induction, deduction and abduction (see Reichertz, Chapter 9, this volume), Peirce (1960) gave illustrative examples of how to reason and make inferences using beans. We start with his examples of beans but also made some changes and elaborations in order to capture the complexity of abduction as it has been further developed by Peirce and others (e.g., Anderson, 1987; Reichertz, 2007; Schurz, 2008; Walton, 2004). Suppose we enter a backyard and find a sealed bag on the ground. It has a label that says, 'Beans'. As we approach the bag, we detect a very small tear on the left side. Curious about what kind of beans might be in the bag, we lift up the bag and begin to shake it. As a result, a white bean falls from the tear in the bag. Encouraged by this first outcome of our 'data collection', we continue shaking the bag. Every new bean falling out of the bag is white. After a while – 10 beans have now dropped out and all of them are white – we conclude that because every bean we find from the bag is white, it seems to be plausible that all the beans in the bag are white. This is a simple example of induction: from a series of empirical and individual cases, we identify a pattern from which we make a general statement, which of course is probable and provisional. Now, suppose we enter another backyard and find a bag with a label that says, 'Only White Beans'. We know that every bean in this bag is white. A woman suddenly arrives, puts her hand into the bag and then pulls it out without showing us what she is holding. She turns to us and says, 'I have three beans in my hand. As you saw, I took them from this bag. What color are these beans?' Although we cannot see the beans in her hand, we can easily conclude that the three beans are white. This conclusion is a simple example of deduction: we predict what will be or happen in a particular case by applying a general statement or rule.

In order to understand the complexity of abduction, suppose we enter a third backyard. Here we find five bags in a line next to a wall. Bag A only contains white beans, Bag B only

contains green beans, Bag C only contains red beans, Bag D only contains brown beans, and Bag E only contains black beans. Four metres in front of the line of bags, we discover three white beans on the ground. Based on these data and our accessible knowledge of Bag A, Bag B, Bag C, Bag D, and Bag E, we infer at once as a probability, or as a fair guess, that the three beans on the ground come from Bag A. On further investigation we discover footsteps on the ground parallel to the lines of bags but four metres in front them. The three white beans are just a few centimetres next to one of these footsteps. In addition, from our further investigations we see that there are no footsteps near the bags, and all the five bags are sealed. Thus, we come up with a new, more plausible hypothesis: the three white beans come from a person who has passed by and accidently or deliberately dropped the three beans. Fortunately, we know that there are three people in the neighbourhood who happen to love white beans, usually have some in their pocket and eat them like candy. Two of them are children – an 8-year-old girl, and a 10-year-old boy. The third is a very old man, and he happens to have the very same shoe size that you have. We therefore investigate the shoeprints closer, and you put your foot next to one of the shoeprints. It is the same size! We can therefore dismiss the two children and choose the very old man as a reasonable hypothesis: as he was passing by, three white beans happened to fall out of his pocket when he pulled his hand from his pocket during his bean snack. But then we detect a 'surprising fact'. There are no imprints from a stick at the side of the footsteps. This is very puzzling because we know that the old man has a severe knee injury on the left side and always walks with a stick. In the light if this new surprising data, we no longer hold the old-man-who-loves-white-beans hypothesis as plausible (well, if we do not consider the possibility that he recently had undergone a new miracle treatment with an extremely fast-healing process). It is more reasonable that another person (perhaps someone we do not know) passed by and dropped the three white beans. We decide to follow the footsteps in a search for more data.

All these lines of reasoning in order to gain a better understanding of why there are three white beans on the ground are examples of abduction, and, as the example clearly illustrates, their outcomes are always provisional, open for revision in the light of new data as well as better hypotheses or explanations. Abduction means selecting or inventing a hypothesis that explains a particular empirical case or set of data better than any other candidate hypotheses, as a provisional hypothesis and a worthy candidate for further investigation. According to Atkinson et al. (2003: 149), abduction is 'a way of capturing the dialectical shuttling between the domain of observations and the domains of ideas'. Like the fictional detective Sherlock Holmes, a researcher who uses abductive reasoning constantly moves back and forth between data and pre-existing as well as developing knowledge or theories, and makes comparisons and interpretations in the search for patterns and the best possible explanations (Thornberg, 2012):

> Different from the situation of induction, in abduction problems we are confronted with thousands of possible explanatory conjectures (or conclusions) – everyone in the village might be the murderer. The essential function of abduction is their role as *search* strategies which tell us which explanatory conjecture we would set out *first* to further inquiry … through the explosive *search space* of possible explanatory reasons. (Schurz, 2008: 203–4)

Furthermore, constructivist grounded theorists admit and use the analytical power of the constant interplay between induction (in which they are never *tabula rasa*) and abduction during the whole research process. In contrast to Glaserian GT (Glaser, 1978; 1998) which argues for delaying the literature review in the substantive area of the actual GT study until the analysis is nearly completed, constructivist grounded theorists (e.g. Charmaz, 2006; Thornberg, 2012) as well as many other grounded theorists (e.g. Clarke, 2005; Corbin and Strauss, 2008; Dunne, 2011; Goldkuhl and Cronholm, 2010; Kelle,

2005) take advantage of knowing and using the literature, not for forcing the research into preconceived categories but as multiple possible lenses. As Dey (1993: 63) puts it, 'There is a difference between an open mind and empty head.' Ignoring established theories and research findings in the substantive area implies a loss of knowledge. Instead of running the risk of reinventing the wheel, missing well-known aspects, and coming up with trivial products or repeating others' mistakes, researchers should take advantage of the pre-existing body of related literature to see further (Thornberg, 2012), as 'a dwarf standing on the shoulders of a giant may see further than the giant himself' (Burton, [1638] 2007: 27). The ability to draw good abductive inferences is dependent on the researchers' previous knowledge, rejection of dogmatic beliefs and development of open-mindedness (Kelle, 1995; for a discussion on how to use literature in a non-forcing and data-sensitive way, see Thornberg, 2012).

MEMO WRITING AND SORTING

During their gathering, coding or analysing of data, researchers will raise new questions for which they seek answers as well as having ideas and thoughts about their codes and relationships between codes. Researchers write down these questions and ideas to remember them. Such analytic, conceptual or theoretical notes are called *memos*. According to Glaser (1978: 83), memos are 'the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding'. Other definitions of memos are: 'the narrated records of a theorist's analytical conversations with him/herself about the research data' (Lempert, 2007: 247); and 'documentation of the researcher's thinking process and theorizing from data' (Thornberg, 2012: 254). By *memo writing*, grounded theorists step back and ask, 'What is going on here?' and 'How can I make sense of it?'

Writing successive memos throughout the research process helps researchers to investigate their codes and categories as well as possible relationships between them, to gain an analytic distance from data and generated codes, to increase the level of abstraction of their ideas, and to build up and maintain 'a storehouse of analytical ideas that can be sorted, ordered and reordered' (Corbin and Strauss, 2008: 120). Memo writing means putting things down on paper, which makes codes, categories, thoughts, reflections and ideas manageable and stimulates further theorizing. It leads the researchers to explore and scrutinize their codes, categories and emerging GT. Thus, memo writing is a prerequisite for theoretical sampling. Memos are about creating an intellectual workplace for the researcher and therefore must be written with complete freedom without worrying about language and grammar. The important thing is 'to record ideas, *get them out*, and the analyst should do so in any kind of language – good, bad or indifferent' (Glaser, 1978: 85). According to Pidgeon and Henwood (1997), the contents of memos are not constrained in any way. Memos can for example include:

- working definitions of codes or categories;
- comparisons between data and between codes and categories;
- identified gaps or vagueness in categories;
- hunches, questions, or conjectures to be checked out and further investigated in the empirical research;
- fresh ideas and newly created concepts;
- comparisons between categories and a range of theoretical codes, and the use of theoretical codes to suggest and investigate possible relations between categories and how categories might be integrated into a modifiable GT;
- comparisons with and links to relevant literature.

As with codes and categories, grounded theorists treats each memo as partial, preliminary and modifiable, open for correction and revision (Charmaz, 2006). Because grounded theorists work with data collection and analysis in parallel, they write memos from the beginning of the research process. Their early memos are often shorter, less conceptualized

and filled with analytical questions and hunches. Box 11.1 illustrates an early memo from Thornberg et al.'s (2013) study on former victims' bullying experiences.

Box 11.1 Early Memo Example

Internal Victimizing

There are lots of initial codes from the first interview transcriptions that seem to indicate what could be labelled as *internal victimizing*. As a response to the bullying situation, the targeting students appeared to incorporate the victim-image produced by their classmates in conversations and behaviour directed towards them, and they started to think, feel and act upon this negative image. Examples of initial codes:

- believing bullies' negative image of you;
- feeling self-worthlessness;
- becoming insecure;
- loss of self-confidence;
- blaming oneself for being bullied;
- avoiding attention;
- becoming silent;
- avoiding others;
- inhibiting the social presence of self.

In order to gain a deeper understanding of bullying as a social psychological process as well as the victims' main concerns in these processes, we have to investigate this more complex code, internal victimizing, and the growing set of initial codes that could be associated with internal victimizing:

- What is going on in internal victimizing?
- How can internal victimizing be defined? What are its properties?
- How can internal victimizing be related to bullying and other social situations?
- How can the initial codes that seem to be indicators of initial victimizing be sorted and clustered? Similarities and differences? What is the variation or dimension of internal victimizing?
- What are the victims' main concerns in internal victimizing?
- What are the consequences?

We have to explore this further and search for more examples of internal victimizing by adding more questions about it in the interview guide as well as focusing on it when continuing coding.

As can be seen in Box 11.1, Thornberg et al. took an active, open and critical stance by constructing analytic questions about internal victimizing that they identified in many data segments in the first interview transcriptions. All the questions in the memo above were expressions of the basic question in initial coding: 'What is happening or actually going on here?' By asking these questions, Thornberg et al. formulated hunches and strategies for further data gathering and coding.

Because these codes appeared frequently and significantly in their coding of interview transcriptions, Thornberg et al. identified

and constructed internal victimizing and a limited set of clustered and elaborated initial codes (e.g. a sense of not fitting in, self-protecting and self-blaming) from which internal victimizing 'emerged' as focused codes. Thus, the memo above as well as other memos helped Thornberg et al. to shift from initial coding to focused coding. Later on in the GT analytic process, memos become longer, more conceptualized, and more and more like written findings. Box 11.2 is one of the memos that Thornberg et al. (2013) wrote towards the end of their study. The memo begins with a title, 'Self-Protecting', which is the tentative name of the main category in the memo, and provides a definition of this category. Moreover, in the memo the category is explored by relating it to subcategories, represented with their tentative names as subheadings as well as working definitions. Thornberg et al. also conceptualize how self-protecting is an integrated part of internal victimizing and related to the basic social process of victimizing, which consists of an interplay or cycling process between external victimizing and internal victimizing.

During focused coding, researchers use memos to raise focused codes into tentative conceptual categories. They begin a memo with a title, usually the tentative name of the category. Then they devise a working definition for it by comparing this category with data, codes, subcategories and other categories, and by comparing the memo with other memos. During theoretical coding, researchers further compare, sort and integrate their memos. Through *memo sorting*, they explore, create and refine theoretical relationships. They compare categories, search for relationships between categories, and consider how their sorting of memos and integrating of categories into a GT reflect the studied phenomenon. Hence, memo sorting is the key to constructing a GT and writing drafts of papers.

Box 11.2 Example of Memo in the Later Stages of the Research Process

Self-Protecting

Whereas there is a set of subprocesses of internal victimizing that express thinking and feeling responses of bullying (e.g. a sense of not fitting in, self-doubting and self-blaming), there is also an action component of internal victimizing, which is about attempts to protect oneself from bullying or its harmful effects. Even if they could be seen as coping strategies, these self-protecting strategies have to be defined as a component of the internal victimizing because these strategies most often – and in contrast to the victims' intentions or hopes – supported the bullies' agenda and confirmed the socially constructed victim-image of them. These strategies became a part of the social psychological process that manifested and maintained the victims in the victim role. Five different self-protecting strategies were identified in the coding and analysis of the former victims' narratives of their prior bullying experiences.

Self-isolating

The victims actively began to isolate themselves by socially withdrawing and avoiding others in the hope of creating a zone where they were left alone, felt safe and avoided harassment (e.g. 'You were like a loner … you kind of isolated yourself from the rest of the world … to avoid meeting the people who bullied you. It was like a safe zone', My, 18 years old). Nevertheless,

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this strategy socially confirmed and co-constructed a low-status loner and deviant position and hindered the opportunities of making and maintaining friendship alliances.

Introverting

The victims passed their time wrapped up in their own thoughts and lived in their own inner world, as a way of dealing with and protecting themselves from the suffering of the loneliness and alienation created by social exclusion (other classmates began to avoid and ignore them as a result of bullying) and their own self-isolating strategy (e.g. 'I lived very much in a sort of fantasy world that I had created, not necessarily by choice but more because I had a need, a need for relationships. If I didn't have any relationships outwardly, I had to create an inner world that I could relate to', Daniel, 28 years old).

Social shielding

The victims tried to appear emotionally unconcerned or unaffected in front of the bullies and other peers in order to hide how hurt, sad or upset they had actually become by the bullying (e.g. 'I became cold and hard on the outside, because if you don't show the bullies that you were in fact sad and upset, then they didn't think it was fun anymore, but you were actually terribly sad', John, 21 years old). Nevertheless, social shielding made the harming consequences more or less diffuse or invisible for others, which in turn made it easier for the bullying process to continue.

Turning off emotions

The victims tried to turn off their emotions or feelings in bullying situations ('Every time someone hurt me with their words, I somehow turned myself off. I kind of made myself faraway. I wasn't there. I can't really describe how that feels because I never felt it so much since I turned off those feelings', Daniel, 28 years old). Turning off emotions was a way of protecting self from hurting and negative feelings, but at the same time, it socially diffused the harming consequences of bullying, and hence made it easier for the bullies to continue, in the same way as in the case of social shielding.

Self-inhibiting

The victims held themselves back in social situations. They tried not to stand out or be detected by their peers in social situations in the classroom as well as in other school settings (e.g. 'It was better to be quiet and withdraw than to say or do something wrong so that others might laugh at me', Maria, 26 years old). The main idea behind self-inhibiting was the attempt to be more socially invisible, which they assumed reduced the risk of bullying. At the same time, this strategy made them look like weak, insecure and 'odd' students, and hence confirmed their social role as easy targets of bullying.

These self-protecting strategies of internal victimizing played a significant role in the interplay or cycling process between external victimizing (bullying) and internal victimizing. The findings of self-protecting deepen our understanding of what the interaction patterns of bullying might look like, and about the victims' main concerns in bullying. The presence of self-protecting indicates that victims are not passive receivers but active agents who try to cope with the bullying events as well as the harming effects and negative feelings these evoke.

QUALITY IN GT RESEARCH

A significant question to ask is when to stop collecting and analysing data. The answer is when the study has reached *theoretical saturation*, meaning that gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of the generated GT and its categories or concepts. Questions to ask in order to evaluate theoretical saturation might for example be: Are there any gaps in the GT or in its categories? Are there any vague or underdeveloped definitions? Are we missing some data? Are the findings coherent? Glaser (2001: 191) talks about 'conceptual density' and 'theoretical completeness'. At the same time, a constructed GT is never a fixed endpoint nor an exact portrayal of the reality, but always remains provisional and open to later modification.

To judge the quality (see Barbour, Chapter 34, this volume) of a GT study, researchers as well as readers might use Glaser's (1998: 17) four criteria (workability, relevance, fit and modifiability) and his questions in relation to them: (1) Does the theory *work* to explain relevant behaviour in the substantive area of the research? (2) Does it have *relevance* to the people in the substantive field? (3) Does the theory *fit* the substantive area? (4) Is it readily *modifiable* as new data emerge? In addition, Corbin (Corbin and Strauss, 2008: 305–7) recently added questions to Glaser's criteria that we summarize as: (1) How *applicable/useful* are the findings for policy and practice? (2) Do the findings inform *concepts* or themes rather than remain uninterpreted? (3) Are concepts situated in their *contexts* and thus allow the reader to understand and evaluate them? (4) Does the analysis demonstrate a *logical* flow of ideas or does it contain gaps? (5) Are the concepts given *depth* and *complexity* and show *variation* in findings through providing rich descriptive details and specifying the links between these concepts? (6) Does the study offer a *creative* contribution? (7) Have the researchers shown *sensitivity* towards their participants and data? (8) Have their *memos* successively gained depth and greater abstraction as the research proceeded? Charmaz's (2006) criteria further condense the above questions. Does the completed analysis fulfil the criteria of credibility, originality, resonance, and usefulness?

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