

## Some examples of qualitative content analysis

### *Chapter guide*

In this chapter, some studies where QCA was used will be presented in more detail. These examples come from different disciplines and illustrate the wide applicability of QCA. The first example is a classic; the other examples are all from recent studies, and you will already be familiar with many of them from the examples used in the book chapters to illustrate the process of conducting QCA. The following studies will be described in this chapter:

- An analysis of the American comic strip *Little Orphan Annie*;
- An analysis of the use of the term “social justice” in the accreditation documents of teacher education programs;
- An analysis of participants’ descriptions of peak experiences in wilderness settings;
- An interview study about the interdependence of structure and agency in German-Israeli youth exchange programs;
- A mixed methods study about the relationship between gender, text type, and reading experience;
- An interview study about priority setting in health care.

### *Little Orphan Annie*

Lyle Shannon’s analysis of the newspaper cartoon *Little Orphan Annie* is an early, classic study using QCA in communication studies for the analysis of visuals (1954). While *Little Orphan Annie* had originally been intended for children, it soon attracted as much of an adult as a child audience, setting it apart from other newspaper funnies at the time. Shannon was struck by the way in which the editors of the paper seemed to have turned the cartoon into a vehicle for transporting conservative, middle-class American, anti-Roosevelt sentiment and values. In an earlier pilot study, based on a close reading of the comic strip over one year, Shannon had already found some evidence of this. In the present study, she set out to do a more systematic content analysis of the values represented by the cartoon.

She did her analysis on a total of all 110 weekly appearances of the comic strip over a time period of two years (April 1948 through July 1950), minus six sections which were lost. She analysed these in terms of five questions which functioned as main categories:

- **Characters:** Which characters appear in a given section? These were further differentiated according to Annie’s friends and opponents, their occupation, and which of the opponents were killed or injured;
- **Goals:** Which goals in life do Annie and her friends approve of?
- **Means:** Which means are suggested by Annie and her friends for reaching these goals?
- **Positive symbols:** Which symbols do Annie and her friends approve of?

- *Negative symbols: Which symbols do Annie and her friends condemn?*

Two coders and Lyle Shannon answered these questions in writing. Shannon then summarized the answers; in this way she created subcategories for each main category. This corresponds to a so-called mixed strategy in creating a coding frame (see chapter 5). The questions Shannon asked about the comic strip function as concept-driven main categories; the subcategories were created in a data-driven way, using a summary strategy (see chapter 6). But Shannon does not in fact present these categories in detail. In particular, she does not provide category definitions. This shows how both QCA (and quantitative content analysis also) were still under development at the time when she was conducting her research.

The results show that Annie spends about 50% of her time engaged in conflict, most often with Russian foreign agents or with “a gang of young hoodlums working the protection racket” (p. 173). They are her most notorious enemies, and they are “polished off with a clock-like regularity which must certainly secure the admiration of both our own F.B.I. and the Pied Piper of yore” (p. 176; see table 1 for details). The other 50% of her time is spent helping the poor, for instance by attempting to set up a community for orphans (the scheme fails when the government tries to get hold of her treasure money until the legal situation has been settled and accidentally sets off a landslide in the process which effectively buries the cave where the money is hidden...). The very poor as well as the very rich are her most important friends, and she solicits the help of the rich in assisting her poor friends.

Table 1. Excerpt from table showing frequency and type of Annie’s opponents (Shannon 1954, pp. 175f.)

<i>Number of Appearances</i>	<i>Annie’s Opponents</i>	<i>Who they are</i>	<i>What happens to them</i>
9	Axel	head of foreign spy ring	sent away on ship by Kansk
3	Andrei	foreign spy with Axel	pushed into sewer by Annie
3	Little Monster and gang	in the protection racket	beat up and reformed by Big Monster
1	two tough guys	after treasure in cave	scared away by python of Gypsy Belle
3	Cap’n Krok	wifebeating husband of Lena, muscles in on barge business	falls into own trap and drowns in bay

The life goals mentioned in the cartoon are in line with the values suggested by these friends and enemies. They include making a great amount of money, being charitable, being a law-abiding citizen, making a good marriage and raising a large family. To get there, the cartoon suggests making a large amount of money (i.e. money features both as an end and a means), using force, and working hard. Not surprisingly, orphans, work, honest merchants, and smart businessmen are some of the symbols that are evaluated positively in the cartoon, whereas “lazy mean people who are unwilling to work” (p. 178), radicals, slave labour camps, the Soviet Union, Hitler are disapproved of. Shannon reports these findings mostly in a narrative format, providing both coding frequencies and examples.

Shannon summarises part of her findings as follows: “Actually, Little Orphan Annie presents a picture of the world around us as many see it, one in which the hard-working captains of industry struggle against a vicious and uncompromising underground in order to protect capitalism, earn large profits and thus assume their social responsibilities, i.e. be charitable to the needy. A much fuller elaboration of this may be found in Max Weber, *The Protestant Ethic.*” (p. 177). Although she focuses on describing the characters and events in the comic strip, her conclusion (and already her research question) shows that she is also concerned with the relationship between her material, the values in society at large, and – although much more indirectly – with the effects this may have on the readers of the paper (see chapters 1 and 9 on the scope of conclusions based on QCA).

### *Social justice in teacher education*

This study about the role of social justice in the accreditation documents of college programs in teacher education exemplifies the use of QCA in educational research. At the same time, it is also an example of an Anglo-American study that explicitly makes reference to and sets out to implement QCA (Kapustka, Howell, Clayton & Thomas, 2009).

During recent years, social justice in teacher education has been of increasing concern in the US. At the same time, research about the actual role of social justice in teacher education programs has been inconclusive. It may therefore be the case that the conceptual concern with social justice does not translate onto the program level. The authors of the present study wanted to find out whether and in what way the term ‘social justice’ was used in documents issued by teacher education institutions and programs.

For their material, Kapustka et al. used the conceptual frameworks of institutions and programs for teacher education in the US that had been accredited by the National Council for Accreditation of Teacher Education (NCATE). They chose those institutions because NCATE is the largest accrediting body for teacher education in the US and because they require institutions to

submit a 'conceptual framework' as part of the accreditation process. These conceptual frameworks are publicly available; they are standardised (which helps a lot with QCA), covering a set number of points, among them diversity, which is closely linked to social justice concerns. The format therefore requires that the institutions discuss such concerns. And because NCATE is the largest accrediting agency for teacher education programs, it is to be expected that most institutions would apply there to be accredited. Because of this, it is likely that these institutions and their programs will be approximately representative of teacher education institutions and programs in the US. Note that Kapustka et al. want to say something about the role of social justice in teacher education programs in the US in general. Although this is comparatively rare in qualitative compared to quantitative research, the authors want to make inferences from their sample to the population of teacher education programs in the US.

To collect their data, the authors went to the NCATE website for a list of teacher education institutions that had been accredited by the organisation, identifying 602 such universities. In a next step, they retrieved the conceptual frameworks from the websites of the institutions. They then examined these documents for any mentions of the term "social justice". The document was included in the sample only if the term appeared in the conceptual framework. This was the case for 96 out of the total number of documents, and QCA proper was used only on these texts. This number is already an important finding in itself. If only approximately one out of six conceptual frameworks for teacher education programs explicitly features the term "social justice", the concerns of the authors underlying this study are clearly justified: 'Social justice' may be a buzz word in conceptual terms, but it only plays a role in a comparatively small part of teacher education programs.

For the subsequent QCA, the 96 texts were divided into two broad groups. A first group of 32 texts consisted of those conceptual frameworks that were built around social justice issues; the second group consisted of those 64 conceptual frameworks where social justice was also mentioned, but was not at the core of the framework. These 96 documents were analysed using a coding frame that consisted of four main categories (p. 495):

- **Context:** How is social justice connected to the context of teaching and learning? Subcategories were high and low contextual connection.
- **Rationale:** What is the rationale for social justice? Subcategories included a values-based rationale, one based on a structural critique of the system, and one based on the importance of multicultural diversity. The authors emphasise that these three subcategories are not mutually exclusive: Each conceptual framework can be based on several of these rationales.
- **Stance:** What is the stance taken towards social justice? This can be action-based in classrooms and school, action-based in the broader community, or knowledge-based.

- *Responsibility: Who is responsible for social justice?* Subcategories were: the candidates, the faculty, or candidates and faculty together.

Kapustka et al do not say how they arrived at these categories – whether in a concept- or a data-driven way (compare chapter 5). They also do not explicitly say whether they tried out their coding frame, nor what exactly they coded – entire conceptual frameworks, or passages from these; but the categories suggest that they probably coded entire frameworks. For a consistency check, all material was double coded. Agreement between coders was not quantified, and all differences between coders were resolved through discussion (see chapters 8-10).

Findings are presented separately for those institutions where social justice features as a key concept and those where the concept plays a less central role in the institutions' conceptual frameworks. In a first step, findings for each group are reported for each of the four main categories in the coding frame. In a second step, universities in this group are illustrated through a more detailed presentation of two cases that exemplify the type. In this way, variable- and case-oriented strategies of presenting the findings are combined (see chapter 11). The main findings are summarised in table 2.

Table 2. Social justice in NCATE conceptual frameworks

<i>Category</i>	<i>Social justice as a key category</i>	<i>Social justice as a marginal category</i>
<b>Context</b>	not clear	typically not mentioned
<b>Rationale</b>	approximately equal percentages of programs with a value-based, a multicultural, and a structural critique rationale	predominance of value-based rationales
<b>Stance</b>	general action-based language most frequent	not clear
<b>Responsibility</b>	rests with both candidates and faculty	rests with both candidates and faculty

The overview of findings in table 2 shows that the categories do not fit the material very well and do not sufficiently differentiate between program types (suggesting that these are probably concept-driven categories that were not adapted to the material at hand). Because of this, the authors move from a frequency-oriented approach of presenting their findings to examining co-occurrences between subcategories and looking for patterns. By doing so, they are able to identify smaller groups of programs which are characterised by such patterns. Among those programs that do not feature social justice as a key category, for instance, programs that are based on a structural critique rationale also tend to take an action-based stance.

### *The nature of peak experiences in wilderness*

In their study, McDonald, Wearing, and Ponting (2009) wanted to find out more about the characteristics of wilderness settings that are conducive to spiritual experiences. Like the above study by Kapustka et al, this is another example of an English-language study that makes explicit reference to the literature on QCA and sets out to implement QCA methodology. At the same time, it illustrates the application of the method in psychology.

Wilderness is something of an ambivalent concept. In the past, it used to denote an alien force that was seen as hostile to mankind. It is only recently, and especially so in environmental psychology, that nature and wilderness settings have come to be regarded as beneficial, even to the point of inducing spiritual experiences. Such positive, spiritual experiences have been conceptualised in psychology under the heading of 'peak experiences'. This term was introduced by Maslow in 1959 to describe short, intense experiences of spiritual insight and transcendence. Nature was one of the settings that Maslow identified as being conducive to such experiences, but so far it is little understood what it is about nature that induces this state of mind.

In conducting their study, McDonald et al. wanted to contribute to a better understanding of the ways in which nature induces peak experiences. To do so, the authors made use of the voluntary wilderness registration system run by the Victoria National Parks Service in Australia where visitors of National Parks can register with their name and address. All 165 participants who had registered with the system in May or June 1998 were contacted by mail.

Data collection took place by questionnaire. Potential participants were asked to describe in their own words "... the most wonderful experience you have had in a wilderness area, the happiest moment, an ecstatic moment, a moment of rapture, a natural high" (McDonald et al., 2009, p. 374). Out of the 165 questionnaires that had been sent out, 39 were returned. This low response rate may raise questions about the validity of the results, but this is not the issue here. QCA was carried out on the free responses of the participants. This is typical of the use of QCA in psychology: In a first step, data is collected about the impressions and experiences of the participants, and QCA is then used to analyse this data. The coding frame was fully data-driven: The researchers first created codes which were close to the data and then arranged these codes into categories. On this basis, seven core categories were developed, specifying the characteristics of peak experiences in wilderness settings. To check for the quality of the coding, all coded materials were handed to another expert researcher together with the coding frame, including the category definitions (see chapter 9).

Findings are presented in a variable-oriented manner, i.e. with a focus on the seven core categories (see chapter 11). To provide an overview, these are shown in a tabular format, including a brief description of each category, coding frequencies, and a characterisation of how the category relates to the literature on peak experiences. In addition, each theme is described in some detail and illustrated by quotes from the material. The following categories emerged from the free responses of the participants:

- *aesthetic qualities*: absorption of the focus of attention by aesthetic qualities of the wilderness setting;
- *being away*: escape from the pressures and distractions of the man-made world;
- *meaningful experience*: significance of the experience to the life of the individual;
- *number of peak experiences*: peak experience was only one out of several profound experiences in the wilderness setting;
- *oneness-connectedness*: feeling a sense of connectedness, often described in a mythical language;
- *overcoming limitations*: a sense of overcoming limitations and renewing one's energy resources;
- *heightened awareness*: deeper understanding of the self and/or the world shortly after the peak experience.

These categories provide a good fit with other literature on peak experiences, emphasising the restorative nature of wilderness settings and the transcendent dimension of the experience. In terms of validity and the scope of the inferences, the study is limited to summarising and conceptualising key themes in the responses of the participants; this is usually the case with qualitative research where QCA is used to analyse participants' free responses.

#### *Interdependence of structure and agency in German-Israeli youth exchange programs*

Proponents of constructivist theories in International Relations assume that structure and agency are interdependent, that the macro-level of the state and the micro-level of the individual are related. In her study about the experience and the long-term effects of German-Israeli youth exchange programs, Heil (2010) wanted to explore such interdependencies in both directions. One goal of her study was to examine how political events influence youth exchange programs and the experience of the participants (structure → agency). Her second goal was to explore the retroactive effects of participation in youth exchange programs on German-Israeli relations (agency → structure). This study exemplifies the use of QCA in political science, specifically in International Relations (IR).

To study the interdependence between German-Israeli relations and individual participation in youth exchange programs, Heil focused on two municipal programs with a long-standing

tradition: the youth exchange programs between Cologne and Tel Aviv and between Bremen and Haifa. To examine the ways in which events on the political level impact the individual experience of the participants, she selected four time frames when important political events had taken place:

- 1965-67: beginning of diplomatic relations between the two countries in 1965 and the Six Day War in 1967;
- 1972-73: attack on Israeli athletes during the Olympic games in Munich in 1972 and Willy Brandt's visit to Israel in 1973;
- 1989-91: end of the cold war, reunification of Germany, increased intake of immigrants from the former Soviet Union by Israel; Gulf war in 1991;
- 2000: first time a German president addressed the Knesset; year when the Second Intifada broke out.

For each of these timeframes, she located persons from different stakeholder groups both in Germany and in Israel who had been actively involved in the exchange at the time. These included former participants, teachers, experts in municipalities and organisations, politicians in general and politicians who had previously participated in one of the exchange programs. For data collection, she conducted semi-standardised interviews with a total of 130 persons around themes such as the ways in which the participants for the exchange were selected, what preparations were made, whether and how the youth exchange between Germany and Israel differed from youth-exchange programs between other countries, participants' reasons for wanting to take part in the youth exchange, and many more.

Out of the 130 interviews, 50 interviews with former participants, teachers, and politicians were included in the data analysis with QCA. In constructing the coding frame, the interview questions were used to generate concept-driven main categories. Subcategories were created in a data-driven way, by reading the participants' answers to a selected interview question and adding a new subcategory whenever a new aspect was mentioned. This is an example of generating subcategories by using the strategy of subsumption (see chapter 6). In this way, most of the main categories in Heil's coding frame are concept-driven, and most subcategories are data-driven. The entire coding frame consists of 80 main categories and 578 subcategories. To make sure that she was using the coding frame consistently, Heil tried it out on eight interviews, re-coding them after two weeks and achieving satisfactory measures of reliability (see chapter 8). She also made sure that her coding frame was valid by establishing that most units in her material could indeed be assigned to one of its categories.

The findings are presented with a focus on the subcategories of the coding frame. For each main category, Heil presents the coding frequencies for all subcategories, in total as well as



differentiated according to time frame, stakeholder group, and German or Israeli nationality of the participants. Moreover, all subcategories are illustrated by quotes from the interviews. A first key finding of the study is that political events did indeed have an impact on the youth exchange. In immediate terms, events like the outbreak of the Second Intifada in 2000 had the effect that participants were sent home early and that the exchange was interrupted for some time on the Israeli side. In more indirect terms, as the relations between the two countries changed, so did the character of the youth exchange. In the beginning, the exchange was driven largely by political motives. Participants were carefully selected, prepared, and instructed to act as ambassadors of their respective countries. During the later time frames, participants were no longer as carefully selected, were more likely to participate in the exchange because they wanted to have time off with friends in a different country.

A retroactive effect from the individual agents to the structural level could also be found, but was again restricted to the earlier time frames. Persons who had participated in the exchange during the early years continued to be highly motivated to further the relationships between the two countries. Some of them, like Edelgard Bulmahn, German Federal Minister of Education and Research from 1998-2005, did so on the political level. Participants during the later time frames were less likely to be passionate about continuing to build German-Israeli relationships and to go into politics.

#### *The relationship between gender, text type, and reading experience*

It is well-known that women like reading better than men do, especially when it comes to reading fiction, but little is known about men's and women's reading experience. To find out how gender, text type, and reading experience are related, Odag (2007) carried out an extensive mixed-methods study. Her research illustrates the use of QCA in literary studies, here the empirical study of literature.

Odag's study was experimental, with gender, text type (fiction / nonfiction), and text focus (inner / outer world of the narrative) as independent and reading experience as the dependent variable. To realise the combinations of the two textual variables, she selected four texts; and each text represented one of the four combinations of the independent variables (a fictional text with a focus on the inner world of the protagonists; a non-fictional text with a focus on the inner world of the protagonists; and so on). Some of Odag's hypotheses were:

- that texts which focus on the inner world of the protagonists evoke more emotions in the readers than do texts which focus on the outer world of the narrative;
- that women are more emotionally involved when reading fiction than men;
- that women are more emotionally involved when reading texts with a focus on the inner world of the protagonists compared to men.

A first way in which Odag made use of QCA was as a treatment check for the two textual independent variables. She created a coding frame with the following main categories and subcategories:

- *Text type*: fiction, non-fiction, mixed
- *Text focus*: inner world, outer world
- *Verisimilitude*: degree of (ir-)reality; degree of (im-)possibility
- *Formal characteristics*: narrative mode; perspective taken; position of the narrator.

The first two categories served as the treatment check; the remaining two categories helped to describe the texts in additional ways which were included for exploratory purposes. All these categories were concept-driven and derived from literary theory. Each of the four texts was classified by experts on these dimensions. In this way, Odag could show that the four texts indeed differed as intended in terms of text type and focus. Because of this, her subsequent analysis was not just based on her own subjective impression of the four texts, but on their description and evaluation by the experts.

The remaining independent variable, readers' gender, was realised through recruiting a sample of participants which consisted of approximately half women (50 participants) and half men (49 participants). Each participant was randomly assigned one text to read.

To collect data on their reading experience, Odag used both a quantitative questionnaire with closed-ended questions for assessing 14 different facets of the reading experience, and a qualitative method, the personal reminding method. The idea behind this method is to allow researchers to collect information about the reading experience without interrupting the reading flow. Participants are requested to place a mark in the margin of the text whenever a thought or a memory goes through their mind or whenever they experience an emotion. Once they have finished reading, they are asked to go back to their marks and to briefly describe in writing what had been going through their minds at the time.

On the resulting 99 reading protocols Odag carried out another QCA. The main categories of her coding frame resulted from her more specific research questions and hypotheses and were therefore again concept-driven. Subcategories were part concept-driven, part data-driven. In creating the data-driven subcategories, Odag used the strategy of subsumption, i.e. she added a new subcategory whenever she came across a new aspect in her material (see chapter 6). This resulted in an extensive coding frame which includes nine main categories (such as the overall quality of the reading experience; point of reference; emotions experienced while reading) and more than 100 subcategories. The coding frame was pre-tested through double coding,

interrater-agreement was calculated, and the coding frame was modified accordingly (see chapters 8 and 9).

Her data analysis included the following steps:

- description of coding frequencies for all categories in her coding frame across all reading protocols and texts;
- analysis of variance with gender, text type and focus as independent variables and reading experience collected through questionnaire data as the dependent variable;
- chi-square analyses with gender, text type and focus as independent variables and reading experience collected through reading protocols and analysed using QCA as the dependent variable;
- integrating the results for the quantitative and the qualitative data on the dependent variable.

In line with the quantitative design of her study, Odag's use of her data and the results of QCA are also predominantly quantitative; the presentation of the coding frequencies is followed by additional inference-statistical analysis, with the coding frequencies as data. Concerning the above hypotheses, analysis of variance with the quantitative reading data shows that texts which focus on the inner world of the protagonists do indeed evoke a more intense reading experience; and women in particular are more emotionally involved when reading such texts. But contrary to expectations, overall and across all texts men become more emotionally involved during reading than women.

Chi-square analyses with these same independent variables and the QCA coding frequencies for the reading protocols as data on the dependent variable show a more differentiated picture. Texts focusing on the inner world of the protagonists cause the readers (of both sexes) to identify more with the texts and the protagonists; also, these texts give rise to ambivalent evaluations characterised by emotions such as sadness, pity, fascination, sympathy, and affection for the protagonists.

Comparisons between men and women show that female readers identify more with the texts and especially the protagonists. Female readers are also more likely to relate what they read to their everyday lives, whereas men are more likely to feel transported into the world of the narrative and the chain of events, without relating what they read to their everyday lives. In terms of emotions, women are more likely to experience negative emotions such as fear or shame, while men are more likely to experience suspense.

When it comes to the interaction between gender and textual focus, men and women do not (and this is contrary to Odag's hypotheses) differ in terms of how close they feel to the textual world or the extent to which they feel transported into the textual world. The analyses also show that the above gender difference in emotions experienced during reading are for the large part limited to texts which focus on the inner world of the protagonists. It is when reading such texts that men are more likely to experience suspense and women are more likely to feel fear or shame.

Overall, Odag concludes that the results for her two types of data complement each other. The reading protocols clearly capture aspects of the reading experience which are not covered by the questionnaire, such as the reference points of the reading experience or the extent to which textual content is related to the readers' everyday lives. The study illustrates how qualitative data and a qualitative method like QCA can be used alongside quantitative data and methods for data analysis.

#### *Priority setting in health care*

In Western industrialised nations, the demographic structure of the population has been undergoing marked changes during the recent years, as more and more people reach old age. At the same time, medical research has produced an increasing number of health technologies and treatment options which often come at a high price. With a growing demand for more - and more expensive - medical treatment, public health insurance can no longer cover all treatment costs. One solution to this situation is to set priorities, i.e. to rank order all treatment options and to begin by financing those that are considered to be of highest importance.

Many countries such as the UK and Sweden have already begun to develop criteria to guide priority setting in health care and to implement guidelines, and many have included the general public in the development process. In Germany, however, the necessity to set priorities has not yet been publicly acknowledged, even though prioritising does already take place on a regular basis. Moreover, the general public have hardly been involved in pertinent discussions, and little is known about how prioritising preferences and underlying criteria of the general public relate to the preferences and underlying criteria of other stakeholder groups, especially those involved in the health care system. To find out more about the preferences of various stakeholder groups and underlying criteria, we carried out a two-phase study (Diederich & Schreier, 2009). During the first phase, semi-standardised interviews were conducted and analysed using QCA. During a second phase, the most important among these criteria were used to construct a questionnaire, and a representative survey of the German population was carried out. I will come back to the qualitative part of this study repeatedly throughout this book to illustrate the various phases and steps in using QCA.

The aim of the study was to describe a broad range of criteria underlying priority setting decisions in health care. Because of this, it was important to have a heterogeneous sample. To ensure this, sampling was carried out on two levels. On the first level, six different stakeholder groups were included: healthy members of the general population, patients, physicians, members of the nursing personnel, politicians, and representatives of public health insurance companies. On the second level, a qualitative sampling guide was constructed for each stakeholder group. In this way we made sure that the members of each group participating in the study would also be heterogeneous. Across all stakeholder groups, 45 persons participated in the study.

For data collection, semi-standardised interviews were conducted. The interview guide was concept-based, drawing on previous research and covering the following four broad topics (Winkelhage et al., 2007):

- Individual experience of priority setting in health care today and in the past;
- Future development of the health care system;
- Priority setting concerning patient groups;
- Priority setting concerning treatments.

To explore whether the participants would give preferential treatment to some patient groups compared to others and according to which criteria (Should children be treated first, for instance? Should persons with a risky lifestyle contribute to their treatment costs?), vignettes were constructed, contrasting two patients who differed on selected criteria. Participants were asked which of the two patients should receive treatment and why. Similarly, vignettes were constructed to illustrate treatment options and common dilemmas in medical care, and participants were asked for their opinions and the underlying reasons. One such vignette was about the case of Terri Schiavo, a patient who had been in a vigil coma for 15 years when intravenous feeding was discontinued. The text of the vignette was as follows:

*“In 2005, the case of Terri Schiavo, a patient from the US who was in a vigil coma, caused a heavy debate in the media. Terri Schiavo suffered from an eating disorder. This caused a kalium deficit in her body on February 25, 1990, which caused her heart to temporarily stop beating. While her heart had stopped, not enough oxygen reached her brain. Severe brain damage followed, and she fell into a vigil coma. 15 years later intravenous feeding was discontinued, and Terri Schiavo died several days later. What is your opinion about the decision to discontinue intravenous feeding after 15 years?” [translation M.Sch.]*

In QCA, the interview guide was used to create an initial set of concept-based main categories (Winkelhage et al., 2008a, b). Subcategories and some further main categories were added in a data-driven procedure, using the strategy of subsumption (see chapter 6). Because we wanted

to use the same set of categories in analysing the responses of all six stakeholder groups, we developed the coding frame by going through the responses of one stakeholder group after another, adding more data-driven categories whenever additional aspects were mentioned. The final coding frame across all stakeholder groups and all interview questions consisted of 89 main categories and 435 subcategories. For analysing participants' opinions about the case of Terri Schiavo, the following main categories were created:

- final opinion;
- decision process;
- criteria in favour of terminating intravenous feeding;
- criteria against terminating intravenous feeding;
- additional important criteria in making a decision;
- criteria that should not affect the decision;
- miscellaneous.

To check for coding consistency, part of the material was double-coded using a first version of the coding frame, and a coefficient of intercoder agreement was calculated. Following the pilot phase, the coding frame was modified, resulting in the above number of categories.

The findings are presented using both a quantitative and a qualitative style. For the quantitative presentation, the coding frame itself, especially the subcategories, constitute the main findings: The subcategories specify the criteria on which the participants base their decisions about priority setting in health care. In a first step, these are presented across all stakeholder groups, including coding frequencies, and they are illustrated by interview quotes (Heil et al., 2010). For instance, participants mention the following considerations why they believe that it was justified to turn off the intravenous feeding of Terri Schiavo:

- that to continue the intravenous feeding would have been an unnecessary prolongation of her suffering (n=20);
- the high costs involved (n=17)
- the long duration of her comatose state (n=14);
- because they believe that her state is unlikely to improve (n=11);
- because the relatives had agreed (n=11);
- because Terri Schiavo's quality of life would most likely be low if she ever regained consciousness (n=8);
- the burden on her relatives (n=8);
- because everyone has the right to die (n=6);
- because the patient would already have died if it were not for high-tech medicine (n=2);
- because other patients can be helped by organ donations from Terri Schiavo (n=2).

In a second quantitative step, coding frequencies were compared across stakeholder groups (Heil et al., 2010). Members of the general population, for instance, were more likely to consider it justified – or in fact more than justified – that intravenous feeding was discontinued than members of the other stakeholder groups. Physicians mentioned the high costs involved more often than members of the other stakeholder groups, and members of the nursing personnel emphasised that everyone has the right to die.

In a subsequent qualitative step, findings within each stakeholder group are explored in more detail; this has already been done for the politicians (Schreier, 2010). This involves drawing up a profile for each participant in the stakeholder group, focusing on patterns that emerge across the answers to all interview questions. Among the politicians, the representative of “The Left” party, for instance, is altogether very critical of the premise that financial means in the health care sector are no longer sufficient. She is also very critical of taking the cost of health care into account when making decisions about medical treatment. In line with this general attitude, she stresses that the costs caused by Terri Schiavo’s comatose state must not enter into the decision about discontinuing intravenous feeding.

The study illustrates the use of QCA in empirical research on health and health care, and it shows how different strategies for presenting the results of QCA can be combined.

**Summary:**

The research examples in this chapter illustrate the wide applicability of QCA across different social science disciplines and different kinds of material. They also illustrate the flexibility of the method: Coding frames can be data-based, concept-based, or mixed; findings can be presented using a quantitative or a qualitative strategy; and QCA can be used as the only method, it can be combined with others in the same study, or QCA can be part of a mixed methods-study.

*Frequently asked questions*

**Are these the only disciplines where QCA can be used?**

No, definitely not. These are just a few examples to illustrate the applicability of QCA. QCA can be used whenever you are dealing with symbolic material which you want to describe in a systematic way. It does not matter what your disciplinary background is or the background of your study.