

## Chapter 6

# Critical Incident Technique: Analysis and Results

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The critical incident technique, developed by John C. Flanagan, has been used extensively in a variety of fields, including library science and communication.<sup>1</sup> This qualitative method puts forth a “flexible set of principles” that allow interview data to be sorted into patterns or relationships, and then summarized and described effectively. A *critical incident* is defined as “any observable human activity that is sufficiently complete in itself to permit inferences and predictions to be made about the persons performing the act.”<sup>2</sup> For an incident to be judged as critical, it:

must occur in a situation where the purpose or intent of the act seems fairly clear to the observer and where its consequences are sufficiently definite to leave little doubt concerning its effects.<sup>3</sup>

Establishing the aim or goal of the activity is thus necessary in using the critical incident technique. After the interview data are obtained, as described below, the collected incidents are sorted into categories and classified. This step is difficult, “inductive and relatively subjective,”<sup>4</sup> and has caused debate among researchers, as noted by Bengt-Erik Andersson and Stig-Goran Nilsson:

It is clear that different people may systematize incidents in different ways. But one can always refer to the source material. The

essential thing seems therefore to be that the category system chosen is an obvious one, and with as small a degree of arbitrariness and chance as possible.<sup>5</sup>

However, according to Flanagan:

Once a classification system has been developed for any given type of critical incidents, a fairly satisfactory degree of objectivity can be achieved in placing the incidents in the defined categories.<sup>6</sup>

### Use of the Critical Incident Technique

In the library reference setting, the critical incident technique involves asking librarians and users to describe successful and unsuccessful reference interactions and to give their reasons for categorizing them as such. This technique allowed analysis to focus precisely on research questions three and four:

- What aspects of the relational dimensions of communication are judged to be of critical importance by librarians and library users in reference encounters?
- Do those aspects of relational dimensions of communication judged of critical importance by users differ from those of librarians, if and, so, how?

During the interviews, following the procedures of critical incident technique, each informant was asked to recall and describe:<sup>7</sup>

- a previous successful reference interaction;
- a previous unsuccessful reference interaction;
- the factors that made the interaction successful or unsuccessful.

Librarians and library users were asked to give their definitions of successful and unsuccessful. Rather than imposing standard definitions of success or failure, the analysis sought to identify the criteria used by the participants themselves in determining positive or negative perceptions. This approach is an integral part of the critical incident technique, which allows for:

the emergence—rather than the imposition—of an evaluative schema, and focus on the events and dimensions of the . . . experi-

ence which are most salient, memorable, and most likely to be retold to others.<sup>8</sup>

The critical incident technique is used to gather and analyze the most memorable experiences, not necessarily the most recent. As an exploratory method used to generate descriptions of various domains of study, the technique has been shown to be both reliable and valid, and appropriate for the description of communication processes.<sup>9</sup>

The author carefully and repeatedly read the interview transcripts to determine whether the informants perceived the incidents as successful or unsuccessful. Then she determined whether the crux of the success or failure of the interaction was associated with relational dimensions, content dimensions, or a combination of the two. The author underlined words and phrases that gave indications of these aspects in the transcript excerpts.

In so classifying the incidents, the author carefully considered and noted the emphasis (as inferred from repeated phrases or greater length of description) of the informant. She paid particular attention to answers to the question: What, for you, made the interaction successful or unsuccessful? Many times the informant would discuss both content and relational dimensions but would describe one in more detail. The author classified incidents as combination only if they discussed both content and relational aspects as contributing equally to perceptions of the success/failure of the interaction. If an incident included a discussion of both relational and content dimensions but was primarily weighted in one direction, the author placed it in the more heavily weighted one.

After placing the incidents into the major categories of content, relational, or combination, the researcher again analyzed them, this time with the aim of identifying the underlying themes. She developed a simplified coding scheme for identifying and classifying the critical incidents that used the major themes from the outline of categories, described in chapter 5.<sup>10</sup> Further, she modified the critical incident coding scheme during the course of analysis as new categories were found to be present and old ones were eliminated, changed, or combined with others. The final coding scheme contained three major content-related themes and five major relational themes with several subcategories. This coding scheme was also used in the analysis of paired perceptions described in chapter 7.

## Critical Incident Coding Scheme and Explanation of Category Placement

### *Content Themes—Coding Scheme*

The author categorized the critical incidents as content (C) if the user or librarian *primarily* discussed one or more of the following as associated with his or her perception of the success/failure of the interaction:

1. Information
  - 1.1 Information delivery/retrieval (or lack of) (e.g., information handed to user, directions provided to user, librarian acts as intermediary)
  - 1.2 Information access (or lack of) (e.g., librarian arranged for user to gain entry to a restricted collection)
  - 1.3 Accuracy (or lack of) ability to find the “right answer”
  - 1.4 Product oriented (e.g., librarian or user concerned with finished product such as speech or paper, rather than with the process of research)
  - 1.5 Information technology
2. Knowledge base (or lack of knowledge base) (e.g., librarian provides specialized knowledge of library sources or systems)
  - 2.1 General knowledge
  - 2.2 Specialized knowledge
    - 2.21 Subject knowledge
    - 2.22 Knowledge of library science
    - 2.23 Knowledge about information need
    - 2.24 Knowledge of how to articulate need
    - 2.25 Knowledge of tools, information sources

### *Relational Themes—Coding Scheme*

The author categorized the critical incidents as relational (R) if the librarian or user *primarily* discussed one or more of the following as associated with his or her perception of the success/failure of the interaction:

1. Attitude
  - 1.1 Attitude toward librarian or user
    - 1.11 Positive (e.g., supportive, friendly, helpful)
    - 1.12 Negative (e.g., angry, impatient, resisting)
  - 1.2 Attitude toward task
    - 1.21 Positive (e.g., persistent)
    - 1.22 Negative (e.g., uninterested)

2. Relationship quality
  - 2.1 Quality of communication skills
  - 2.2 Orientation toward process (e.g., librarian or user concerned primarily with teaching/learning the research process)
3. Approachability of librarian
  - 3.1 Positive nonverbal behavior (e.g., smiling, nodding)
  - 3.2 Negative nonverbal behavior (e.g., frowning, staring)
4. Impact of technology on relationship

The author categorized the critical incidents as combination (C/R) only if librarians and users discussed both content and relational dimensions as contributing equally to their perceptions of success/failure of the interaction.

### Results of the Critical Incident Technique Analysis<sup>11</sup>

The informants contributed a total of forty-seven critical incidents, fourteen from the librarians and thirty-three from the users. Table 22 summarizes the type of critical incidents collected. Of the fourteen incidents collected from the librarians, six were about successful interactions and eight, unsuccessful.<sup>12</sup> Users reported nineteen positive and fourteen negative incidents.<sup>13</sup>

Relational and content dimensions were found to be associated with both unsuccessful and successful interactions for librarians and users. Thirty-five (74%) of the total of forty-seven incidents centered on issues of relationship rather than on those of content. Table 23 summarizes these findings.

Users reported incidents that were related to relational aspects with greater frequency than did librarians. As table 23 indicates, of the fourteen incidents reported by librarians, seven (50%) were content related and seven (50%) relational. In contrast, of the thirty-three incidents reported by users, five (15%) were content related and twenty-eight (85%) relational. Librar-

**Table 22**  
**Types of Critical Incidents**

|              | Librarians<br>(N=9)* | Users<br>(N=29)* | Librarians<br>and Users |
|--------------|----------------------|------------------|-------------------------|
| Successful   | 6 (43%)              | 19 (58%)         | 25 (53%)                |
| Unsuccessful | 8 (57%)              | 14 (42%)         | 22 (47%)                |
| Total        | 14                   | 33               | 47                      |

\*Includes main study participants only.

**Table 23**  
**Summary of Critical Incident Analysis**

|              | Librarians<br>(N=9)* | Users<br>(N=29)* | Librarians<br>and Users |
|--------------|----------------------|------------------|-------------------------|
| Successful   |                      |                  |                         |
| content      | 4 (67%)              | 3 (16%)          |                         |
| relational   | 2 (33%)              | 16 (84%)         |                         |
| total        | <u>6</u>             | <u>19</u>        |                         |
| Unsuccessful |                      |                  |                         |
| content      | 3 (37%)              | 2 (14%)          |                         |
| relational   | 5 (63%)              | 12 (86%)         |                         |
| total        | <u>8</u>             | <u>14</u>        |                         |
| Aggregate    |                      |                  |                         |
| content      | 7 (50%)              | 5 (15%)          | 12 (26%)                |
| relational   | 7 (50%)              | 28 (85%)         | 35 (74%)                |
| Total        | <u>14</u>            | <u>33</u>        | <u>47</u>               |

\*Includes main study participants only.

ians did, however, attribute a greater number of unsuccessful incidents, five (63%) to relational dimensions compared to three (37%) to content dimensions. For the librarians, relational dimensions were of greater importance in their reports of unsuccessful interactions.

Representative content-oriented and relational-oriented statements from both librarians and users are given in tables 24 and 25.

### Librarians' Critical Incident Themes

Four themes emerged from the librarians' fourteen critical incidents, two related primarily to content—information and knowledge base—and two—attitude and relationship quality—related to the relational dimension.<sup>14</sup> Table 26 summarizes these four themes.

Table 26 shows that the number one ranked theme for librarians was relational in nature, indicating that this dimension was important to librarians. However, overall, both dimensions were represented equally, with the emergence of seven relational themes (six attitude and one relationship quality) and seven content themes (four information and three knowledge

**Table 24**  
**Representative Content-Oriented Statements**

Librarians about Users

“He goes, ‘Yeah, I’m going to use *Applied Science and Technology*.’” (L06)

“This student came in this afternoon for the census tract.” (L05)

“So I said, ‘Well, I didn’t know, but I would look it up.’” (L09)

Users about Librarians

“To tell me exactly what kind of subjects to look under.” (U04)

“[He] directed me to the law books.” (U07)

“I was looking, trying to get specific information.” (U08)

**Table 25**  
**Representative Relational-Oriented Statements**

Librarians about Users

“He was angry, he was angry when he started.” (L01)

“A lot of it was his attitude.” (L06)

“She kept interrupting each time.” (L08)

“It was also exciting because she was very excited about the whole thing.”  
(L06)

Users about Librarians

“She was very nice and helpful and pleasant. . . She felt comfortable.”  
(U08)

“She went out of her way.” (U16)

“She treated me like she wanted to be treated herself, you know, with respect.” (U19)

base). The discussion below describes these four themes with representative librarians' statements.

*Attitude*

User attitude was an important dimension for librarians. Attitude was the largest theme, relational in nature and evident in six (43%) out of fourteen incidents. Five out of the six incidents classified as relational were perceived as unsuccessful and attributed to users' poor attitude toward the librarian or toward the task. These centered on users who were perceived as:

- closed-minded;
- angry;
- arrogant;
- obnoxious;
- impatient.

Two quotes illustrate:

He already had in his mind what he wanted me to produce, and I had a lot of trouble getting from him enough information to even look for what he wanted because he had a closed mind. (LU1)<sup>15</sup>

And, you know, he kept saying, "Well, you . . . we've got to find this information" and I just couldn't produce it and he was very angry. He was angry when he started, he got angrier at me because I didn't seem to understand what it was he was trying to say, and I *did* understand what it was, it was just that I couldn't produce the information. (LU2)

**Table 26**  
**Themes of Librarians' Critical Incidents**

| Theme                | Responses  | Percent | Rank  |
|----------------------|------------|---------|-------|
| Attitude             | 6 (5U,1S)  | 43      | 1 (R) |
| Information          | 4 (3U,1S)  | 29      | 2 (C) |
| Knowledge base       | 3 (3S)     | 21      | 3 (C) |
| Relationship quality | 1 (S)      | 7       | 4 (R) |
| Total                | 14 (6S,8U) | 100     |       |

U= Unsuccessful    C= Content    S= Successful    R= Relational

Another incident involved a positive user attitude and openness. When asked what made this incident successful, the librarian replied: "I think her attitude. She was willing to explain those things [when] I asked her questions." (LS5)

### *Information*

The second highest-ranked theme for librarians was information, with four (29%) of fourteen incidents.

Two unsuccessful incidents focused on the librarian's inability to get access to information that the user was seeking. For example:

A lot of times, we don't have what they want. Like this student came in this afternoon for the census tract for, I think it was one town near Philadelphia and one town in Maryland, and we don't have it. Things like that are unsuccessful just because we didn't have what they wanted. (LU4)

The third unsuccessful incident in the information theme centered on lack of accuracy, the librarian's perceived failure to find the right answer, in this case, while the user was still present. Although the librarian eventually did find the answer, it was not until after the user had left the library:

So I hopped onto the catalog, typed in the *Japanese Encyclopedia* and it wasn't there, and I was so unnerved by everything that was going on around me, I said, "We don't have that." And then about twenty minutes later, and she went away, everything calmed down, and I said, "Oh, this is ridiculous" that I didn't try different things and I went back on and truncated and immediately I found the *Japan Encyclopedia* and, I was sure that was the one that she wanted. (LU8)

One positive incident dealt with information retrieval systems:

Using those three terms, we got over two hundred articles on *Psychlit* and I explained that she needs to check our holdings to make sure that [site] has the article she wants to get it here and just to browse

through. And sometimes that's basically how we start off exposing them to the realm of the literature and then trying to focus in a little bit but like letting them make the choices. (LS2)

### *Knowledge Base*

Besides the one content-related successful incident focused on information, three centered on knowledge base.<sup>16</sup> To illustrate:

And she wasn't quite sure how to access some of the secondary literature. There are a couple of bibliographies she hadn't worked with, so going from "I need something of Alflecks" to these are the bibliographies that you should be using and these are the kinds of materials that are available, we were able to really expand on what she wanted and she walked away with much more than she had originally asked for. (LS4)

### *Relationship Quality*

One of the librarians' incidents dealt with relationship quality. This theme is defined as the interpersonal dynamics of the interaction, such as perceptions of the other's communication skills and involvement in the reference process (i.e., willingness to invest time). One example follows:

I think it was because it took us a while before we really got to the point of what he really needed to know and then, I think, probably above and beyond the interview was the fact that I saw a kid's light bulb go on, and he really responded and you just knew that instead of this being a drudge now was, the paper, was gonna be fun and that was great to see . . . finally we got to what he really needed to know and then it was like it grew and it was almost like a flower, kind of. (LS1)

### **Users' Critical Incident Themes**

The twenty-nine users reported thirty-three critical incidents. The author sorted these into the same four themes as the librarians' incidents, plus one additional theme—approachability (see table 27). A notable finding can be observed by comparing table 27 with table 26. Table 27 indicates that the theme ranked first for users was relational and in-

volved positive or negative attitude. This was also the case for librarians as reported in table 26.

### *Attitude*

Users reported a total of fourteen unsuccessful incidents. Twelve were classified as primarily relational. Six of these, similar to the librarians', were attributed to users' perceptions of negative librarian attitude described as:

- having no time;
- unhelpful;
- uncaring;
- sour;
- abrupt;
- impatient.

As an illustration, one user stated: "Yeah, well, some librarians are really sour and they're like 'Well, why don't you do your own research?' That kind of thing." (UU6) Another user commented: "And they're not very patient, they're, you know, 'Oh well, go to the computer.'" (UU9)

The users also reported nineteen successful interactions, sixteen primarily relational. Thirteen of these focused on attitude, more specifically on positive librarian attitude toward the user. Two representative excerpts follow:

It's her normal job to help you get books, interlibrary loan, but there's no reason for her to have to stay late to do it and she didn't give me a hard time about it. She was interested more in helping me than in getting home. (US14)

**Table 27**  
**Themes of Users' Critical Incidents**

| Theme                                                  | Responses    | Percent | Rank  |
|--------------------------------------------------------|--------------|---------|-------|
| Attitude                                               | 19 (6U,13S)  | 58      | 1 (R) |
| Relationship quality                                   | 7 (4U,3S)    | 21      | 2 (R) |
| Information                                            | 3 (S)        | 9       | 3 (C) |
| Approachability                                        | 2 (U)        | 6       | 4 (R) |
| Knowledge base                                         | 2 (U)        | 6       | 4 (C) |
| Total                                                  | 33 (19S,14U) | 100     |       |
| U= Unsuccessful C= Content S= Successful R= Relational |              |         |       |

What stands out, I guess, for me is just, you know, getting involved, showing that, not that you're wholly enthused, but at least that you care, you're not just there. And I mean, there's some librarians, I guess, that don't want to be librarians and . . . they're cold with you . . . but like some that I've experienced, basically, they show that they're interested to help, not just feel that they have to. (US19)

### *Relationship Quality*

Seven of the users' critical incidents were categorized as pertaining to relationship quality. Four of these were unsuccessful, as illustrated:

My first semester here, like it was my first time in the library, I asked for help. She says, "Oh, are you a freshman?" like that was expected, you know, that I needed her whatever, so she showed me where some things were, and then I came back and she goes "Well, didn't I just show you where it was?" And I was like "Yeah," I said, "but I think you just left me there, what was I supposed to do?" So I just, I think maybe that first time, like in a new library, very, not very nice. (UU8)

Three successful incidents also dealt with the relationship quality, as this example of a user essentially concerned with the teaching/learning process illustrates:

She really took the time to show me. She went out of her way then to show me so that maybe next time I could be more independent. (US11)

### *Information*

Three of the users' successful incidents were primarily content related, concerned with information as represented by this passage:

I think it was giving me the book, opening it up and telling me this is what you want, this is what you need, and to tell me exactly what kind of subject to look under and not something vague [but] something really specific . . . and that's what made it so successful. (US2)

*Approachability*

Approachability emerged for two users but was not present among the librarian themes. It dealt with users' perceptions of the librarian's nonverbal behaviors. Because the users were faced with the responsibility to approach the librarian, it was reasonable that they would be concerned with these perceptions. For example, this user commented on a librarian's lack of approachability:

When they are not getting up from their desk or, you know, you can see that they are not happy to look for something for you really.  
(UU10)

*Knowledge Base*

The author classified two of the users' unsuccessful incidents as primarily content oriented, centering on perceptions that librarians lacked specialized knowledge. For example, one user asserted: "If the librarian doesn't know about it, then she can't really help you with it." (UU3)

**Comparison of Librarian and User Themes**

Table 28 summarizes the findings of user and librarian critical incidents. This analysis demonstrates the importance of the relational dimensions of communication, especially to users. When user and librarian responses are combined, the top two ranked themes are relational in nature, dealing with issues of attitude and relationship quality.

Table 29 presents the same information as table 28 but compares relational and content themes. This table shows that when librarians' and users' results were taken separately, attitude, a relational category, remains

| Theme                                                           | Responses     | Percent | Rank  |
|-----------------------------------------------------------------|---------------|---------|-------|
| Attitude                                                        | 25 (19U, 6L)  | 53      | 1 (R) |
| Relationship quality                                            | 8 (7U, 1L)    | 17      | 2 (R) |
| Information                                                     | 7 (3U, 4L)    | 15      | 3 (C) |
| Knowledge base                                                  | 5 (2U, 3L)    | 11      | 4 (C) |
| Approachability                                                 | 2 (2U)        | 4       | 5 (R) |
| Total                                                           | 47 (33U, 14L) | 100     |       |
| U= Unsuccessful    C= Content    S= Successful    R= Relational |               |         |       |

**Table 29**  
**Comparison of Librarians' and Users' Relational and**  
**Content Critical Incident Themes**

| Theme                | Librarians |    |      | Users    |    |      |
|----------------------|------------|----|------|----------|----|------|
|                      | No.        | %  | Rank | No.      | %  | Rank |
| <u>Relational</u>    |            |    |      |          |    |      |
| Attitude             | 6          | 43 | 1    | 19       | 58 | 1    |
| Relationship quality | 1          | 7  | 4    | 7        | 21 | 2    |
| Approachability      | 0          |    |      | 2        | 6  | 4    |
| <u>Content</u>       |            |    |      |          |    |      |
| Information          | 4          | 29 | 2    | 3        | 9  | 3    |
| Knowledge base       | <u>3</u>   | 21 | 3    | <u>2</u> | 6  | 4    |
| Total                | 14         |    |      | 33       |    |      |

the number one-ranked theme for both users and librarians. However, relationship quality, ranked second for users, is ranked fourth for librarians. The content categories of information and knowledge base ranked higher for librarians.

### Reliability Test

After the critical incidents were sorted into categories, twenty-four (51%) were sent to two additional judges for reliability tests. The author gave the judges verbatim transcripts, two model incidents with explanation as to how the categories were determined, the coding scheme, and instructions to follow in assigning categories. In one case, both judges disagreed with the author, who then changed her overall categorization of the incident and coding scheme assignment. After this, on the sort of incidents into relational, content, or combination categories, the judges had an average of 87 percent agreement with the author. Regarding the coding scheme themes, the judges had an average of 81 percent agreement with the author. The author believes that these levels of agreement are adequate.<sup>17</sup>

### Discussion

The critical incident analysis shows that relational dimensions are important to users' and librarians' perceptions of the quality of reference interactions. Users reported incidents centering on relational aspects with greater fre-

quency than did librarians. On the other hand, librarians gave more weight to content dimensions, but they also perceived relationship qualities to be important. In fact, librarians attributed more unsuccessful incidents to relational dimensions than to content dimensions. Librarians tended to recall unsuccessful incidents in which the users were perceived as displaying negative relational messages, such as being nasty or obnoxious, rather than those in which the information exchange was incomplete or inaccurate. The emphasis on transfer of content in the literature on the reference interaction leads one to expect that librarians would attribute failure to unsuccessful information transfer. However, the critical incidents analysis shows that relational dimensions are also important. Additional discussion of these findings is provided in chapter 8.

### Notes

1. John C. Flanagan, "The Critical Incident Technique," *Psychological Bulletin* 51 (July 1954): 327–58; see also Grace Fivars, *The Critical Incident Technique: A Bibliography* 2nd ed. (Palo Alto, Calif.: American Institutes for Research in the Behavioral Sciences, 1980).ERIC Document 195 681; Brent D. Ruben, "The Health Caregiver–Patient Relationship: Pathology, Etiology, Treatment," in *Communication and Health: Systems Perspective*, ed. Eileen B. Ray and Lewis Donohew (Hillsdale, N.J.: L. Erlbaum Associates, 1990), 51–68, Brent D. Ruben. *Communicating with Patients* (Dubuque, Ia.: Kendall-Hunt, 1992); ———, "What Patients Remember: A Content Analysis of Critical Incidents in Health Care," *Health Communication* 5 (1993): 1–16.
2. Flanagan, "The Critical Incident Technique," 327.
3. *Ibid.*, 327.
4. *Ibid.*, 335.
5. Bengt-Erik Andersson and Stig-Goran Nilsson, "Studies in the Reliability and Validity of the Critical Incident Technique," *Journal of Applied Psychology* 48 (1964): 400.
6. Flanagan, "The Critical Incident Technique," 335.
7. See appendix F. It should also be noted that the critical incidents elicited from users and librarians were, with the exception of two cases, unrelated to the observed interactions. The two exceptions, when asked to describe a successful interaction, spoke about the one that had just taken place.
8. Ruben, "What Patients Remember," 3.
9. See Andersson and Nilsson, "Studies in the Reliability and Validity of the Critical Incident Technique." and Lorette K. Woolsey, "The Critical Incident Technique: An Innovative Qualitative Method of Research," *Canadian Journal of Counseling* 20 (Oct. 1986): 242–54.
10. See appendix G.

11. Parts of this chapter were published in Marie L. Radford, "Communication Theory Applied to the Reference Encounter: An Analysis of Critical Incidents," *Library Quarterly* 66 (Apr. 1996): 123-37, and are reproduced here with permission.

12. Three librarians were unable to recall usable successful or unsuccessful incidents; one could not recall a successful incident. One librarian was able to recall two successful and two unsuccessful incidents, and another was able to recall two unsuccessful incidents, which were deemed usable.

13. Two users were unable to recall usable successful or unsuccessful incidents, five were unable to recall usable successful incidents, and ten were unable to recall unsuccessful incidents. Due to time pressure, one user was unable to complete the interview and therefore did not report critical incidents.

14. See chapter 5 for definitions of *attitude*, *information*, and *knowledge base*.

15. The notation "LU1" stands for librarian, unsuccessful, critical incident number 1. "LS1" would stand for librarian, successful, critical incident number 1. Likewise, "UU" would stand for user, unsuccessful, critical incident number 1 and "US1" for user, successful, critical incident number 1.

16. See chapter 5 for a definition of *knowledge base*.

17. For a more detailed description of the reliability test, see Marie L. Radford, "Relational Aspects of Reference Interactions: A Qualitative Investigation of the Perceptions of Users and Librarians in the Academic Library" (Ph.D. diss., Rutgers—State Univ. of New Jersey, 1993), 157-59.