7.4 Interviews

Interviews can be thought of as a "conversation with a purpose" (Kahn and Cannell, 1957). How like an ordinary conversation the interview can be depends on the type of interview method used. There are four main types of interviews: open-ended or unstructured, structured, semi-structured, and group interviews (Fontana and Frey, 1994). The first three types are named according to how much control the interviewer imposes on the conversation by following a predetermined set of questions. The fourth involves a small group guided by a facilitator.

The most appropriate approach to interviewing depends on the purpose of the interview, the questions to be addressed, and the stage in the lifecycle. For example, if the goal is to gain first impressions about how users react to a new design idea, such as an interactive sign, then an informal, open-ended interview is often the best approach. But if the goal is to get feedback about a particular design feature, such as the layout of a new web browser, then a structured interview or questionnaire is often better. This is because the goals and questions are more specific in the latter case.

7.4.1 Unstructured Interviews

Open-ended or unstructured interviews are at one end of a spectrum of how much control the interviewer has over the interview process. They are exploratory and are more like conversations around a particular topic; they often go into considerable depth. Questions posed by the interviewer are open, meaning that there is no particular expectation about the format or content of answers. Open questions are used when you want to explore the range of opinions. For example, "What are the advantages of using a PDA?" Here, the interviewee is free to answer as fully or as briefly as she wishes and both interviewer and interviewee can steer the interview.

It is always advisable to have a plan of the main topics to be covered. Going into an interview without an agenda should not be confused with being open to new information and ideas (see Section 7.4.5 on planning an interview). One of the skills necessary for conducting an unstructured interview is getting the balance right between making sure that answers to relevant questions are obtained, while at the same time being prepared to follow new lines of enquiry that were not anticipated.

A benefit of unstructured interviews is that they generate rich data, i.e. data that gives a deep understanding of the topic, and is often interrelated and complex. In addition, interviewees may mention issues that the interviewer has not considered. But this benefit often comes at a cost. A lot of unstructured data is generated, which can be very time-consuming to analyze. It is also impossible to replicate the process, since each interview takes on its own format. Typically in interaction design, there is no attempt to analyze every interview in detail. Instead, the interviewer makes notes or audio records the session and then goes back through the data afterwards to note the main issues of interest.

7.4.2 Structured Interviews

In structured interviews, the interviewer asks predetermined questions similar to those in a questionnaire (see Section 7.5). Structured interviews are useful when the goals are clearly understood and specific questions can be identified. To work best, the questions need to be short and clearly worded. Typically the questions are closed, which means that

they require an answer from a predetermined set of alternatives. Responses may involve selecting from a set of options that are read aloud or presented on paper. Closed questions work well for fast interviews when the range of answers is known, and where people tend to be in a rush. In a structured interview the same questions are used with each participant so the study is standardized. Example questions for a structured interview might be:

- Which of the following websites do you visit most frequently: amazon.com, barnes & noble.com, google.com, msn.com?
- How often do you visit this website: every day, once a week, once a month, less often than once a month?
- Have you ever purchased anything online?
- If so, how often do you purchase items online: every day, once a week, once a month, less often than once a month?

Questions in a structured interview should be worded exactly the same for each participant, and they should be asked in the same order.

7.4.3 Semi-Structured Interviews

Semi-structured interviews combine features of structured and unstructured interviews and use both closed and open questions. For consistency the interviewer has a basic script for guidance, so that the same topics are covered with each interviewee. The interviewer starts with preplanned questions and then probes the interviewee to say more until no new relevant information is forthcoming. For example:
Which music websites do you visit most frequently? <Answer mentions several but stresses that she prefers hottestmusic.com

Why? <Answer says that she likes the site layout>

Tell me more about the site layout <Silence, followed by an answer describing the site's navigation>

Anything else that you like about the site? <Answer describes the animations>

Thanks. Are there any other reasons for visiting this site so often that you haven't mentioned?

It is important not to pre-empt an answer by phrasing a question to suggest that a particular answer is expected. For example, "You seemed to like this use of color…" assumes that this is the case and will probably encourage the interviewee to answer that this is true so as not to offend the interviewer. Children are particularly prone to behave in this way (see Box 7.2 for more on data gathering with children). The body language of the interviewer, for example, whether she is smiling, scowling, looking disapproving, etc., can have a strong influence on whether the interviewee will agree with a question.

Also, the interviewer needs to give the person time to speak and not move on too quickly. Probes are a device for getting more information, especially neutral probes such as, "Do you want to tell me anything else?" The person may also be prompted to help her along. For example, if the interviewee is talking about a computer interface but has forgotten the name of a key menu item, the interviewer might want to remind her so that the interview can proceed productively. Semi-structured interviews are intended to be broadly

replicable, so probing and prompting should aim to help the interview along without introducing bias.

Box 7.2: Working with children

Children think and react to situations differently from adults. Sitting a 4-year-old child down in a formal interview situation is unlikely to result in anything other than a wall of silence. If children are to be included in your data gathering sessions, then child-friendly methods are needed to make them feel at ease. For example, for very young children of pre-reading or early reading age, data gathering sessions need to rely on images and chat rather than written instructions or questionnaires. Read *et al*. (2002) have developed a set of 'smileys' for use with children in interviews (see Figure 7.1).

Figure 7.1: A smileyometer gauge for early readers

Recording children can also pose its problems. Children have a tendency to perform in front of a camera unless it is placed behind them, or they are given time to get used to it being there.

The appropriate techniques to involve children also depend on the goal of the data gathering session. For example, Guha *et al*. (2005) work with children as technology design partners. They focus on children between the ages of 7 and 11. They have found that unexpected innovations result when working as an inter-generational team, i.e. adults and children working together. The method they use is called cooperative inquiry (Druin, 2002) and is based on Scandinavian cooperative design practices, participatory design, and contextual inquiry. There are many techniques that can be used in cooperative inquiry, such as sketching ideas and brainstorming, and observational research which has been modified to accommodate children's preferred approaches. For example, the 'mixing ideas' approach (which also works with younger children, aged 5 to 6) involves three stages. In the first stage, each child generates ideas, working one-on-one with an adult. In the second stage, groups of adults and children mix together these ideas. Finally, all the ideas are mixed together to form 'the big idea' (see Figure 7.2). Guha *et al*. report that they are currently developing technology reflecting concepts that emerged from the big idea.

Figure 7.2: The cut up and remixed big idea

In contrast, the Equator project investigated the use of new technology to encourage children to record and analyse aspects of the environment themselves. For example, Rogers *et al*. (2005) report on the Ambient Wood project which investigates the use of ubiquitous computing and mobile technologies to support learning. In this work, a learning experience was designed that encourages children to explore habitats in a woodland area. Each child was given a PDA and a mobile probing tool (see Figure 7.3), which can collect data about their environment and send it to a central server. The data collected by the probe could be collated and displayed on the PDA in real time, thus giving immediate feedback to their investigations. The child's position was also monitored and location-specific data sent to their PDA, e.g. when they walked past a specific plant.

Figure 7.3: The probing tool in the Ambient Wood project being used to collect light and moisture readings

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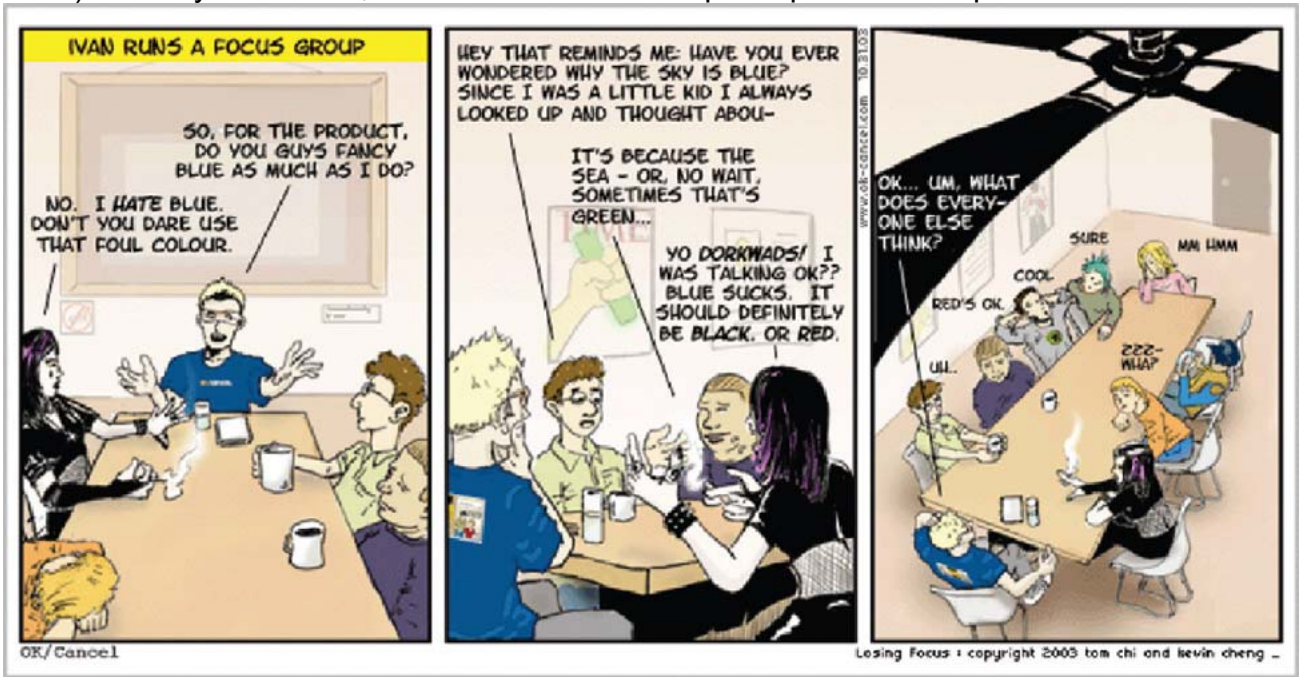
7.4.4 Focus Groups

Interviews are often conducted with one interviewer and one interviewee, but it is also common to interview people in groups. One form of group interview that is frequently used in marketing, political campaigning, and social sciences research is the focus group. Normally 3 to 10 people are involved, and the discussion is led by a trained facilitator. Participants are selected to provide a representative sample of the target population. For example, in an evaluation of a university website, a group of administrators, faculty, and students may form three separate focus groups because they use the web for different purposes. In requirements activities it is quite common to hold a focus group in order to identify conflicts in terminology or expectations from different sections within one department or organization.

The benefit of a focus group is that it allows diverse or sensitive issues to be raised that might otherwise be missed. The method assumes that individuals develop opinions within a social context by talking with others. Often questions posed to focus groups seem deceptively simple, but the idea is to enable people to put forward their own opinions in a supportive environment. A preset agenda is developed to guide the discussion, but there is sufficient flexibility for the facilitator to follow unanticipated issues as they are raised. The facilitator guides and prompts discussion and skillfully encourages quiet people to

participate and stops verbose ones from dominating the discussion. The discussion is usually recorded for later analysis and participants may be invited to explain their comments more fully.

Focus groups can be very relaxed affairs (for the participants that is), but in some product development methods, focus groups have become very formalized. For example, the workshops (as they are called) used in Joint Application Development (Wood and Silver, 1995) are very structured, and their contents and participants are all prescribed.



Dilemma: What they say and what they do

What users say isn't always what they do. When asked a question, people sometimes give the answers that they think show them in the best light, or they may just forget what happened or how long they spent on a particular activity. For example, in a study looking at the maintenance of telecommunications software, the developers stated that most of their job involved reading documentation, but when observed, it was found that searching and looking at source code was much more common than looking at documentation (Singer *et al.*, 1997).

So, can interviewers believe all the responses they get? Are the respondents giving ‘the truth’ or are they simply giving the answers that they think the interviewer wants to hear?

It isn't possible to avoid this behavior, but it is important to be aware of it and to reduce such biases by choosing questions carefully, getting a large number of participants or by using a combination of data gathering techniques.

7.4.5 Planning and Conducting an Interview

Planning an interview involves developing the set of questions or topics to be covered, collating any documentation to give to the interviewee (such as consent form or project description), checking that recording equipment works in advance and you know how to use it, working out the structure of the interview, and organizing a suitable time and place.

Developing Interview Questions
Questions for an interview may be open or closed. Open questions are best suited to interviews where the goal of the session is exploratory. Closed questions require a list of possible answers, and so they can only be used in a situation where you know the possible answers in advance. It is always possible to have an 'other' option, but the ideal is that this option is not used very often. So whether you choose to use open questions or closed questions depends on what is already known about the topic of investigation and the goal of the interview. An unstructured interview will usually consist entirely of open questions, while a structured interview will usually consist of closed questions. A semi-structured interview may use a combination of both types.

The following guidelines for developing interview questions are derived from Robson (2002):

- Compound sentences can be confusing, so split them into two separate questions. For example, instead of, "How do you like this cell phone compared with previous ones that you have owned?" Say, "How do you like this cell phone?" "Have you owned other cell phones?" If so, "How did you like it?" This is easier for the interviewee to respond to and easier for the interviewer to record.
- Interviewees may not understand jargon or complex language and might be too embarrassed to admit it, so explain them in layman's terms.
- Try to keep questions neutral, for example, if you ask "Why do you like this style of interaction?" this question assumes that the person does like it and will discourage some interviewees from stating their real feelings.

Activity 7.2

Cybelle (see Figure 7.4) is an intelligent agent that guides visitors to the website Agentland which contains information about intelligent agents. As Cybelle is an intelligent agent, it is not straightforward to interact with her, and she can be frustrating. However, she remembers your name between visits, which is friendly.

Figure 7.4: Cybelle the intelligent agent

Cybelle has a variety of facial expressions and although the answers to my questions were often strange, she has an interesting approach to life, and one might almost say that she has personality! To see Cybelle in action, go to the website (http://www.agentland.com/) and ask her some questions. You can ask any question you like, about intelligent agents, herself, or anything else. Alternatively, you can do this activity by just looking at the figure and thinking about the questions.

The developers of Cybelle want to find out whether this approach encourages interest in intelligent agents, or whether it turns people away. To this end, they have asked you to conduct some interviews for them.

1. What is the goal of your data gathering session?
2. Suggest ways of recording the interview data.
3. Suggest a set of questions that are suitable for use in an unstructured interview that seek opinions about whether Cybelle would encourage or discourage interest in intelligent agents.
4. Based on the results of the unstructured interviews, the developers of Cybelle have found that two important acceptance factors are whether she is amusing and whether she answers questions on intelligent agents accurately. Write a set of semi-structured interview questions to evaluate these two aspects. Show two of your peers the Cybelle website. Then ask them to comment on your questions. Refine the questions based on their comments.

Comment

1. The goal is to seek opinions about whether Cybelle would encourage or discourage interest in intelligent agents.
2. Taking notes might be cumbersome and distracting to the interviewee, and it would be easy to miss important points. An alternative is to audio record the session. Video recording is not needed as it isn't necessary to see the interviewee. However, it would be useful to have a camera at hand to take shots of the interface in case the interviewee wanted to refer to aspects of Cybelle.
3. Possible questions include: Do you find chatting with Cybelle helpful? Does Cybelle answer your questions on intelligent agents appropriately? In what way(s) does Cybelle affect your interest in intelligent agents?
4. Semi-structured interview questions may be open or closed. Some closed questions that you might ask include:
    - Have you seen Cybelle before?
    - Would you like to find out about intelligent agents from Cybelle?
    - In your opinion, is Cybelle amusing or irritating?

Some open questions, with follow-on probes, include:

- What do you like most about Cybelle? Why?
- What do you like least about Cybelle? Why?
- Please give me an example where Cybelle amused or irritated you.

It is helpful when collecting answers to list the possible responses together with boxes that can just be checked (i.e. ticked). Here's how we could convert some of the questions from Activity 7.2.

1. Have you seen Cybelle before? (Explore previous knowledge)

   Interviewer checks box □ *Yes* □ *No* ▱ *Don't remember/know*
2. Would you like to find out about intelligent agents from Cybelle? (Explore initial reaction, then explore the response)

   Interviewer checks box □ *Yes* □ No □ *Don't know*
3. Why?

   If response is "Yes" or "No," interviewer says, "Which of the following statements represents your feelings best?"

   For "Yes," Interviewer checks the box
   - *I don't like typing*
   - *This is fun/cool*
   - *It's going to be the way of the future*
   - *Another reason (Interviewer notes the reason)*

   For 'No,' Interviewer checks the box
   - *I don't like systems that pretend to be people*
   - *She doesn't answer my questions clearly*
   - *I don't like her 'personality'*
   - *Another reason (Interviewer notes the reason)*
4. In your opinion, is Cybelle amusing or irritating? *Interviewer checks box*
   - *Amusing*
   - *Irritating*
   - *Neither*

Running the Interview

Before starting, make sure that the aims of the interview have been communicated to and understood by the interviewees, and they feel comfortable. Some simple techniques can help here, such as finding out about their world before the interview so that you can dress, act, and speak in a manner that will be familiar. This is particularly important when working with disadvantaged groups such as disabled people, children, or seriously ill patients.

During the interview, it is better to listen more than to talk, to respond with sympathy but without bias, and even to enjoy the interview (Robson, 2002). Robson suggests the following steps for an interview:

1. An *introduction* in which the interviewer introduces himself and explains why he is doing the interview, reassures interviewees regarding any ethical issues, and asks if they mind being recorded, if appropriate. This should be exactly the same for each interviewee.
2. A *warm-up* session where easy, non-threatening questions come first. These may include questions about demographic information, such as "What area of the country do you live in?"
3. A *main* session in which the questions are presented in a logical sequence, with the more probing ones at the end. In a semi-structured interview the order of questions may vary between participants, depending on the course of the conversation and what seems more natural.

4. A *cool-off period* consisting of a few easy questions (to defuse tension if it has arisen).
5. A *closing* session in which the interviewer thanks the interviewee and switches off the recorder or puts her notebook away, signaling that the interview has ended.

7.4.6 Other Forms of Interview

Telephone interviews are a good way of interviewing people with whom you cannot meet. You cannot see their body language, but apart from this telephone interviews have much in common with face-to-face interviews.

Online interviews, using either asynchronous communication such as email or synchronous communication such as instant messaging, can also be used. For interviews that involve sensitive issues, answering questions anonymously may be preferable to meeting face-to-face. If, however, face-to-face meetings are desirable but impossible because of geographical distance, video-conferencing systems can be used. Feedback about a product or a process can also be obtained from customer help lines, consumer groups, and online customer communities that provide help and support, e.g. see Box 9.2 on user involvement at Microsoft.

At various stages of design, it is useful to get quick feedback from a few users through short interviews, which are often more like conversations, in which users are asked their opinions.

Retrospective interviews, i.e. interviews which reflect on an activity that was performed in the recent past, are often conducted to check with participants that the interviewer has correctly understood what was happening.

7.4.7 Enriching the Interview Experience

Interviews often take place in a neutral environment, e.g. a meeting room away from the interviewee's normal desk, and the interview situation provides an artificial context, i.e. separate from normal tasks. In these circumstances it can be difficult for interviewees to give full answers to the questions posed. To help combat this, interviews can be enriched by using props such as prototypes or work artifacts that the interviewee or interviewer brings along, or descriptions of common tasks (examples of these kinds of props are scenarios and prototypes, which are covered in Chapters 10 and 11). These props can be used to provide context for the interviewees and help to ground the data in a real setting. Figure 7.5 illustrates the use of prototypes in a focus group setting.

Figure 7.5: Enriching a focus group with prototypes. Here prototype screens are displayed on the wall for all participants to see

For example, Jones *et al.* (2004) used diaries as a basis for interviews. They performed a study to probe the extent to which certain places are associated with particular activities and information needs. Each participant was asked to keep a diary in which they entered information about where they were and what they were doing at 30 minute intervals. The interview questions were then based around their diary entries.