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Using Instant Messaging for Internet-Based Interviews

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ABSTRACT

One method of data collection that has rarely been applied online is the one-on-one interview. Because of its widespread use, the Internet-based service instant messaging (IM) seems to be suitable to conduct scientific online interviews. A unique benefit of IM is the existence of public address books. These can be used both as a sampling frame and as a cross-reference to validate respondents' demographic data. The feasibility of IM interviews was examined in a WWW survey as well as in actual IM interviews that were combined with an experimental manipulation of the request for participation. On the basis of self-reports, respondent behavior, and data in the address books, the studies have demonstrated that the risk of receiving false data in IM interviews is small. Not only is the quality of the obtainable data satisfying but the contact rate, response rate, and retention rate as well. Moreover, the experimental test demonstrated that the response rate is influenced by the information provided in the chat request. On the basis of the study results, recommendations are given as to when and how IM interviews should be used as a data collection method.

INTRODUCTION

IN THE CURRENT AGE of the Internet, electronic counterparts for all traditional methods of data collection in the social sciences have been developed: paper-and-pencil questionnaires have become WWW- and e-mail-based, and experiments have successfully been transferred from the lab onto the Web.[1,2] However, one offline method that has rarely been applied online is the one-on-one interview. The hesitation to conduct online interviews might be due to the fact that one interviewer can simultaneously talk to only a few respondents. Moreover, online interviews cannot be fully automated. These and other reasons[3] account for the scarcity of methodological experience with online interviews to date.

Online interviews confer unique benefits to researchers. Compared to offline interviews, the researcher has potential access[3] to respondents from all over the world, including some difficult-to-reach populations. Another advantage is lower costs because the interviewer does not need to travel. Because collected data come in electronic form, time is saved and the risk of transcription errors is diminished. Compared to Web-based questionnaires, there are advantages due to the presence of human intelligence during the interview. In online interviews, complex and qualitative questions can be asked, and the interviewer can instantaneously respond to queries by the respondents or clarify questions. Moreover, because respondents interact with a real human, they might be more likely to respond to an interview request and stay until the end of the interview. Finally, conducting online interviews requires no programming skills and less equipment compared to WWW-based studies.

Instant messaging (IM) is an Internet-based service that lends itself to be used to conduct online interviews. IM supports the exchange of text messages, spoken language, and files.[4] A promising

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feature of IM for research is the possibility to view at a glance in a buddy-list the on- or offline status of respondents that are known by their IM names. Moreover, most IM programs offer a public address book in which one can look up certain profile data of each user. For researchers, this opens up the unique possibility to match the respondents' self-reported sociodemographic information collected during an interview with their profiles in the address book. Another benefit of the address book is the possibility of drawing random or other samples of IM users: The researcher can generate IM user names at random and ascertain their existence by means of the respective IM program's address book. Alternatively, one can use the address book as a sampling frame directly.

When using IM for scientific interviews, one needs to understand the characteristics of this medium: IM is widespread, especially among children, teenagers,[5] and deaf and hard of hearing persons.[6] Projections[7] are that there will be 1.4 billion IM accounts in 2007. Despite IM's popularity, IM users are not representative of the population of e-mail users or WWW users, let alone of the general population. This issue is part of a more general sampling problem; certain segments of the population tend to use a particular medium while others do not.[2] An inconvenience for researchers is the existence of different families of IM programs that cannot be used to talk to each other. To avoid a bias towards a certain IM program, researchers should use several IM programs when conducting interviews.

Compared to face-to-face interviews, IM takes place in a less informative social environment. The lion's share of IM communication is text-based. Therefore, contextual information such as non- and paraverbal information is unavailable to the communicating parties. This renders an IM interview more loosely structured than a face-to-face interview. Moreover, because conversational partners appear only by a nickname or number, both parties cannot be certain that a conversational partner is really whom he or she claims to be. This abets phenomena of miscommunication such as flaming, lurking, spamming, and the use of false identities.[4]

One example for the use of false identities is the notorious gender-switching—the false reporting of one's sex.[8,9] Besides misreporting, IM users might have borrowed their password from a friend. In a phone survey,[10] 22% of youngsters who use IM and e-mail reported to have shared their passwords with a friend. Moreover, 24% admitted to having pretended to be a different person online, and 33% to having faked information about themselves.

While there is little known about people's reasons for using IM,[11] nothing at all is known about their reasons for taking part in scientific IM interviews. Lacking a study on people's reasons to take part in an IM interview, we resort to conclusions by Bosnjak[12] on people's motivation in taking part in e-mail and WWW-based studies: He identified curiosity, a desire to contribute to research, and feedback (Table 1) to be important motives for study participation.

Besides respondents' reasons for taking part in an IM interview, there remain many unresolved issues about IM, some of which the following two studies try to answer. The overall aim of the two studies is to evaluate the feasibility and the potential of using IM to conduct scientific online interviews. We examined how useful the address book is to validating respondents' self-reported demographics. We also wondered about participation and retention rates that can be achieved with IM interviews, and factors by which they are influenced. Finally, the studies evaluated how big the threats of misrepresentation and people who share their accounts are.

WWW SURVEY

Methods

First, we conducted a Web-based survey to find out more about people's habits of using IM and their reasons for participating in IM interviews. We also collected demographic data that were used for later validation. This survey was conducted as a WWW-based study because we were not only interested in people who have used IM but also in those who do not (yet) use IM. Moreover, the coverage error is smaller on the Web than with IM because more people use the WWW than use IM.

Participants were administered an English-language questionnaire consisting of 23 items on 11 pages. Some of the questions were posed only if a respondent indicated that he or she used IM. The items dealt with demographic information, likely reactions to a request to participate in an IM interview, the sharing of IM accounts, and the importance of several motives when deciding whether to participate in an IM interview. Participants were recruited on Web portals for online questionnaires, in newsgroups devoted to IM, through banners on general-interest websites, and through search engines. The field phase ended in January 2004 after 219 days. A total of 1046 datasets were collected. Using the method recommended by Reips,[13] we

TABLE 1. PARTICIPANTS' STATED IMPORTANCE OF MOTIVES WHEN DECIDING WHETHER TO PARTICIPATE IN A SCIENTIFIC IM INTERVIEW, ORDERED BY FREQUENCY, AND THE RANK OF THE SAME ANSWER IN BOSNJAK[12]

	n (%)	*Rank in Bosnjak*[12]
I should be told how the researcher got my IM name	421 (44.4)	1
Exact topic of study should be known in advance	409 (43.1)	3
My own curiosity	370 (39.0)	4
Feedback about the results	365 (38.5)	2
Full anonymity of my answers	343 (36.1)	6
Contribute to research	315 (33.2)	5
Possibility to learn something about myself	244 (25.7)	7
Monetary incentives	143 (15.1)	9
The researcher's appeal for help	107 (11.3)	8

discarded data from 77 participants who said they had already taken the questionnaire or who admitted to not seriously answering the questionnaire. Furthermore, 23 datasets of obviously low quality were discarded.

Results

After the data cleaning, there remained 946 datasets. Participants were on average 24.1 years old (SD = 9.0) and 58% indicated being female.

Motives when deciding to take part in an IM interview. A total of 726 people (76.7%) checked at least one option. The options were the same as used by Bosnjak[12] (Table 1). Compared to Bosnjak,[12] feedback on the study results is less important in IM interviews than in WWW- and e-mail-based studies. All other motives differ in importance by one rank at the most. This similarity is corroborated by a significant rank correlation: $r_s = 0.92$, $n = 9$, $p = 0.001$.

Validation of self-report by means of actual behavior. At the end of the questionnaire, people had the chance to request the results of this WWW survey by leaving their IM names. This allowed us to validate their answers to the earlier question of how important it is to receive the study's results (Table 1) by means of their actual behavior of leaving their IM names to receive the results ($n = 251 = 26.5\%$ of valid participants). The correlation between the earlier self-report and the subsequent behavior was $r = 0.22$, $n = 681$, $p < 0.001$. Taking into account that the correlation between attitudes and behavior is generally moderate,[14] we conclude that the respondents' self-report was valid.

Most likely reaction to a chat request to take part in a scientific IM interview. A total of 626 people (66.2%) answered this question. Of those, 15 clicked the option *decline to answer* and 17 *don't know what you mean*. Of the remaining 594 people, 271 (45.6%) said they would participate in the interview, 224 (37.7%) reported that they would request further information, 4 (0.7%) reported that they would take part but give wrong answers, and 95 (16.0%) reported that they would delete the chat request.

Sharing of IM account. A total of 727 people (76.8%) answered this dichotomous question. Of those, 17.6% ($n = 128$) indicated having lent their account to another person.

Pretended to be somebody else in an IM conversation. A total of 726 people (76.7%) answered this dichotomous question. Of those, 28.9% ($n = 210$) answered this question with *yes*.

Validation of self-reports by means of address book. We took a closer look at misrepresentation on the part of the respondents. We used the IM user names the respondents had left us to receive the study results ($n = 251$). By means of the IM names—where possible—we extracted each user's sex and age from the address book of the respective IM service. These profile data were compared with respondents' self-reported sex and age in the WWW survey. Unfortunately, with only the IM user name available, research proved impossible in the AOL Instant Messenger address book ($n = 109$). With regard to the remaining 142 IM user names from other IM programs, we found 85 (59.9%) matching profiles in the respective address books where either the respondent's age or sex, or both,

were reported. In 5.9% of the cases where sex was reported, there was a discrepancy between the self-reported sex and the sex extracted from the address book (Table 2). There was a discrepancy in 11.2% of the cases where age was reported. We tolerated a deviation of +6/−1 years of the self-reported age from age reported in the address book because in some address books only the (relative) age in years is indicated and not the (absolute) birth date.

Discussion

When deciding to participate in an IM interview, more than 40% of people find it important to be told whence the researcher obtained their IM user name and the topic of the study. These and other needs, when deciding to participate in a scientific study, were similarly prioritized in Bosnjak's survey,[12] which examined participation in WWW- and e-mail-based studies. In view of the 8 years between Bosnjak's study[12] and the present one, the different samples used, and the different online media concerned, this stability in respondents' priorities is remarkable. It suggests that people are moved by the same concerns whenever they decide to participate in any kind of scientific online study. It therefore can be assumed—but needs to be tested empirically—that the various response-enhancing techniques (e.g., pointing out the importance of the research, offering material incentives, asking respondents to contribute time to research and society) are as effective with IM interviews as with other types of online studies.

This study has demonstrated that the dangers of receiving false data in IM interviews—due to respondents deliberately misreporting their demographics, attitudes, or identity—are small. According to respondents' self-reports, less than 1% would take part in an interview, but then give wrong answers. Less than 20% of the respondents indicated having lent their IM account to another person and less than 30% said they have pretended to be someone else in an IM conversation at least once. The likelihood that the researcher hits upon one of those instances by chance is much smaller. Moreover, in the context of scientific interviews, respondents probably have fewer reasons to disguise their identity than with personal usage of IM.

As these data are self-reports and therefore might have been embellished by socially desirable answering, we validated some self-reports by means of both profile data in the address book and participants' subsequent behavior. In 6% of the cases there was a discrepancy between the sex reported in the questionnaire and the sex extracted from the address book. With regard to age, there was a discrepancy in 11% of the cases. Further evidence for the respondents' sincerity was the significant concordance of the self-reported importance of receiving study results in general and later behavior to request the results of this study.

IM INTERVIEW

The results of the WWW survey were put to test in actual IM interviews conducted one year after the end of the WWW survey. Thus we employed a longitudinal design, which allowed us to test the stability of respondents' answers.

Methods

We tried to contact all respondents who left us their IM user name in the WWW survey to invite them to participate in an IM interview—without mentioning their earlier participation in the WWW survey. The 251 IM user names were integrated into the buddy-list of the respective IM program in order to see the on- and offline status of these users. If a user went online, he or she was sent a chat request to participate in an IM interview. Data were

TABLE 2. VALIDATION OF SELF-REPORTED AGE AND SEX IN WWW SURVEY AND LATER IM INTERVIEW MATCHED WITH THE PROFILE DATA FROM THE ADDRESS BOOKS

			Age			*Sex*		
	N	*n, profiles with sex or age*	*Concordant*	*Discrepant*	*No information*	*Concordant*	*Discrepant*	*No information*
WWW survey	142	85 (59.9%)	64 (88.8%)	6 (11.2%)	72	79 (94.1%)	4 (5.9%)	59
IM interview	20	16 (80.0%)	12 (92.3%)	1 (7.3%)	7	16 (100.0%)	0 (0.0%)	4

collected in a timeframe of 15 days in January and February of 2005, from 9:00 to 24:00 CET.

In the WWW survey, respondents had declared it important when deciding whether to participate in an IM interview to be informed about the topic of the study and whence the interviewer had obtained their IM user name. To find out about the actual importance of these two pieces of information, the request for participation in this IM interview was experimentally varied according to a 2 × 2 design: The topic of the interview ("science") and the source of the IM user name ("Your nickname was chosen randomly from the online address book at msn.com [icq.com, or other IM service]") were either mentioned or not.

The interview itself consisted of 10 questions. The first five were demographic items (age, sex, country, place you live, languages spoken). To justify the topic of the study, they were followed by four filler questions about the participant's attitudes towards science. At the end we asked, "How did you like this interview?"

Results

Participation behavior. Of the 251 IM user names, 33 (13.1%) no longer existed. Within the 15-day field period, 72 (33.0%) of the remaining 218 persons went online at least once and were sent a request for participation. Of the 72 contacts, two had to be discarded (poor English, postponed participation). Of the remaining 70 contacts, 32 (45.7%) took part in the interview. Of those, three people (9.4%) abandoned the interview prematurely. The 32 participants were, on average, 24.3 years old (SD = 7.9), and 61.3% self-reported as female.

Validation of self-report in the WWW survey by means of behavior in IM interview. In the WWW survey, we asked respondents how they would react to a chat request to participate in an IM interview. Their self-reported reactions were matched with their actual behavior upon the request for participation in this IM interview (Table 3). The concordance fell short of a conventional significance level: κappa = 0.10, $n = 69$, $p = 0.07$.

Validation of self-reports in the WWW survey by means of self-reports in IM interview. The self-reported age and sex in the WWW survey of all 32 *IM* respondents were identical to the age and sex they reported in the IM interview.

Validation of self-reports in IM interview by means of address book. Where possible, the self-reported age and sex in the IM interview were compared to the profile data in the address books. Again, the *AOL Instant Messenger* users ($n = 12$) had to be excluded. Of the remaining 20 users, there were 16 (80.0%) cases where either sex or age, or both, were reported. Of the cases where age was reported, there was one discrepancy, and of the cases where sex was reported, there were no discrepancies (Table 2).

Experimental variation of chat request. We analyzed whether revealing, in the chat request, information about the topic of the study and the way in which we obtained the IM user name, or the interaction between these two factors, influenced people's willingness to participate in the interview. On the basis of the WWW survey, it is expected that the highest response rate will be obtained if both the study topic and the origin of the IM user name are revealed, followed by conditions in which one of these pieces of information is given. In contrast, the lowest response rate is expected if no information is given.

A logit analysis revealed that the saturated model, which contains both factors and their inter-

TABLE 3. VALIDATION OF SELF-REPORTED REACTION TO A REQUEST TO PARTICIPATE IN A SCIENTIFIC INTERVIEW BY MEANS OF ACTUAL BEHAVIOR UPON THE REQUEST TO PARTICIPATE IN AN IM INTERVIEW

	Actual behavior when asked to participate in IM interview			
	Delete/ignore chat request	*Request further information*	*Participate in the study*	*Total*
Self-report in WWW survey				
Delete/ignore chat request	1	0	1	2
Request further information	19	7	0	26
Participate in the study	16	11	14	41
Total	36	18	15	69

action, was the best fitting model (Table 4). This is indicated by the significant reduction in fit when removing the interaction from the saturated model: $\Delta L^2 = 8.46$, $df = 1$, $p = 0.004$. Revealing the study topic or the source of the *IM* user name per se, had no influence on participation: $z = 0.96$ and $z = -0.88$, respectively. However, the interaction between these two factors was significant: $z = -2.44$. Thus, telling interviewees both the study topic and from where their *IM* user name had been culled, or not telling them anything at all, resulted in a lower participation rate than did informing invitees about either the topic or the source of their user name.

DISCUSSION

One aim of this study was to test the feasibility of IM interviews. First, we established the rate by which people who had taken part in a study at least one year earlier could be successfully contacted. The contact rate within the 15-day field period was 33.0%. The smallness of the share of people who went online in the specified time frame might be due to (1) the time lag between interviewer and some IM users due to geographical longitude, (2) the fact that some users had switched to another IM account and their old account was dormant, and (3) some IM services might not have designated some invalid IM accounts to be nonexistent (i.e., not every IM service provides feedback on the existence of accounts).

Second, we ascertained the response and dropout rates in the ensuing IM interviews. Of the contacted persons, 45.7% took part in the interview, and of those, 9.4% abandoned the interview prematurely. This response rate to an IM interview request is larger than the average response rate of 39.6% that was established in a meta-analysis of 68 studies to which people were invited by e-mail.[15] One reason for the higher response rate in the IM interview is that people were solicited when they were online, whereas a person solicited via e-mail might not read the study invitation before closure of the study. Future studies need to find out if the response rate established in this IM interview holds with other IM interviews.

While there are reasons for the response rate being higher with IM than with e-mail, there are also reasons why the response rate was not considerably higher than 50%. One reason is the intrusiveness of chat requests: If an e-mail invitation arrives at an unsuitable moment, it might be considered later. With IM, however, the chat request is delivered instantaneously and regardless of what a user is doing at that moment. If the chat request is not answered soon, it is usually lost. Therefore, despite some users' possible interest in the study, a share of chat requests might be ignored because users have more urgent things to do at the moment. This was corroborated in this study by some IM users asking to be re-invited at a later stage because they did not have time at the moment. Moreover, with some IM programs users have the option to block particular requests from delivery (e.g., all requests by people who are not in one's buddy-list). Thereby, neither does the sender know that his or her chat request was not delivered nor does the recipient know that he or she was sent a chat request.

Besides the possibly higher response rates, a benefit of IM interviews is the possibility to fall back upon a public address book with most IM programs. The address book can be used for drawing samples as well as for validating demographic information. This study has shown that the searchability and completeness of the address books vary with the IM program used. We found 59.9 % matching profiles in the address books. Of those profiles, 97.6% contained information about the sex and 82.4% about the age of the user. In the IM interview, in 80.0% of the cases, there were matching profiles in the address book. Of those profiles, 100% contained information about the sex and 81.3% about the age of the user (Table 2).

Another goal of this study was to evaluate the truthfulness of interviewees' answers in the WWW survey. First, we validated self-reports in the WWW survey concerning how people would react to a chat request by means of their actual reaction to a later chat request. In general, self-reports were concordant with later behavior but not significantly so.

TABLE 4. PARTICIPANTS AND NON-PARTICIPANTS IN IM INTERVIEW BROKEN DOWN BY EXPERIMENTAL CONDITION

Experimentally varied request for participation[a]	*Participated*	*Did not participate*
1 (T, S)	5 (29.4%)	12 (70.6%)
2 (T, —)	14 (70.0%)	6 (30.0%)
3 (—, S)	9 (47.4%)	10 (52.6%)
4 (—, —)	4 (28.6%)	10 (71.4%)
Total	32 (45.7%)	38 (54.3%)

[a]T denotes that the topic of the interview, and S denotes that the source of obtaining the IM user name was mentioned in the chat request.

The small agreement between intended and actual behaviour can in part be explained by a certain share of people who had not seen the chat request. Even if, according to the buddy-list, the status of a person is online, the person is not necessarily sitting attentively in front of the computer. When those users later return to their computers they might overlook the chat request, or they might answer the request only when it is night at the researcher's location. Moreover, users of some IM programs have the option of blocking requests from delivery without the researcher's awareness. Furthermore, in the time lapse of at least one year between the WWW survey and the IM interview, several respondents might have become more critical towards being sent unsolicited chat requests, due to SPAM.

Moreover, we validated respondents' self-reported age and sex in the WWW survey by means of their self-reports in the IM interview. We found no discrepancies. Finally, this study evaluated respondents' sincerity in the IM interview by means of the address book. With regard to age, there was one discrepancy, and with regard to sex, there were no discrepancies. All in all, the outcomes of the different validation procedures demonstrate that reliable data were collected both in the WWW survey and the actual IM interviews.

The final aim of this study was to take the first steps towards an optimization of a chat request to increase compliance. The chat requests were experimentally varied in mentioning the topic of the study and whence the interviewer had obtained the invitees' IM user name. Telling interviewees both the study topic and from where their IM user name had been culled or not telling them anything at all resulted in a lower participation rate than did giving one of the pieces of information. On the one hand, these results might be explained by the different lengths of the chat requests. Because IM users are used to exchanging short messages, it is harmful to the response rate to send a wordy chat request—as was done when both pieces of information were mentioned. On the other hand, the length of the chat request does not sufficiently account for the established pattern of response. If length were the only determinant of response, mentioning neither the topic nor the origin of the IM user name should have elicited the highest response rate, which was not the case. Therefore, besides the length of the chat request, we assume trust induction as an independent explanation. When we disclose the topic of the study or the source of obtaining their IM user name, people see that the message probably has nothing to do with spam. These speculations, however, need to be tested in further experiments or in in-depth-interviews about users' feelings and thoughts when receiving such chat requests. Moreover, the study of optimizing chat requests is beset by a confound. Each piece of information—be it the topic of the study or the origin of the IM user names—has a particular content. For example, by telling people that the topic is science, one does not only study the effect of mentioning a topic but also how interesting the particular topic science is. Therefore, the results of this experiment might not be generalizable in regards to mentioning other topics or other sources of the IM user name. Many more studies are needed to disentangle the general effects of mentioning some information from the effects of the contents of these pieces of information.

CONCLUSION

On the basis of self-reports, actual behavior, and external data in the address books, our two studies have demonstrated that IM interviews are feasible, and that in some aspects they are superior to other methods of data collection. The risk of receiving false data in IM interviews is small. Not only is the quality of the obtainable data satisfying but also the contact rate, response rate, and retention rate. Moreover, there is the useful address book that can be used both as a sampling frame and as a cross-reference to identify flippant participants. Also, there is the advantage of the presence of human intelligence during the interview. However, these benefits come at the cost of more time effort. Collecting the same number of datasets takes longer via IM than with a WWW survey.

Therefore, when deciding on how to collect data, researchers need to weigh whether the benefits of using IM outweigh the costs. When the choice is between face-to-face and IM interviews, the need to survey geographically scattered respondents is a weighty argument for using IM. When the choice is between a WWW survey and IM interviews, the use of IM is recommended if one or more of the following criteria apply: (1) the study is short, (2) complex and qualitative questions need to be asked, (3) a high response rate is required, and (4) a Web server and programming skills are not available.

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