# THE VIRTUAL INTERVIEWER

## Fred Bronner, Veldkamp/University of Amsterdam Costa Tchaoussoglou, NOM Raymond Ross, TNS NIPO

## SUMMARY

In 2002 a fundamental change of the Dutch National Readership Survey took place. Sample procedures, questions and method of data collection were all together changed at the same time.

Based on one-year experience with the new methods and several additional experiments we can outline the consequences of the chosen approach and unravel "which change causes what effect?"

We will concentrate on one main theme in our paper: the change from CATI (computer assisted telephone interviewing) to CASI (computer assisted self interviewing). CASI makes the interviewer obsolete and as a consequence 'response-effects' are strongly diminished. This last term refers to factors which influence or distort the responses such as socio-economic characteristics of the interviewer, the social desirability of the response alternatives and the way questions are formulated.

In social science many studies report very positive experiences with CASI. These results refer mainly to opinions about social issues, psychological testing and sensitive subjects like alcohol consumption and drug use. Because in the Dutch National Readership Survey we changed from CATI to CASI, we are able to show the effects of CASI in media research. Two modes are used: CASI-IP (Interviewer Present) and CASI-IA (Interviewer Absent). Because CASI-online seems to be the data collection method of the future we think it is important to sketch the consequences for measuring reading behaviour and tell something about our experiences. In other words: the implications of a virtual interviewer in particular for media research will be shown. CASI generates at least two effects:

(1) more openness which implies for example higher reach figures for 'skin' and gossip magazines,

(2) less sensitivity to social prestige bias which implies lower reach figures for prestige magazines.

#### 1. Why changes in the Dutch National Readership Survey?

In 2002 the SummoScanner was replaced by the NOM Print Monitor. The SummoScanner has been carried out from the mid eighties by CATI. In those years a methodological break-through, but around 2000 at the end of its life-cycle. Bassler and Tchaoussoglou (2001) described at the 10<sup>th</sup> Worldwide Readership Research Symposium in Venezia already some of the reasons to change from telephone interviewing to an alternative data collection method. We summarize the three main reasons briefly:

#### a) the increase of the number of titles

Any media survey has to adapt to the changing media scene and that implies an increasing number of titles. The SummoScanner reached its maximum value.

The acceptable interviewing time in CATI procedures is about 30 minutes at most and because this limit was already reached, no new titles could be added to the questionnaire. As van der Noort and Tchaoussoglou (1995, p115) say: 'you can't go on adding to the questionnaire without paying a price'. Fusion techniques provided a temporal solution (van der Noort & Tchaoussoglou, 1999). But there was a need for an instrument in which more titles could be incorporated.

#### b) title confusion

New magazines, especially in niche audiences, increase the problem of title confusion and in telephone interviewing no visual cues can be used. So there was a need for an instrument in which visual cues could be used.

#### c) increasing non-response

The Netherlands seems to be world champion non-response (de Heer, 1999, Stoop 2002). As Stoop says: 'non response rates are high in The Netherlands, higher than in similar countries and higher than in the past.' Response rates in telephone interviewing, contacting a 'fresh' sample, are diminishing in the course of the last ten years from about 60% to under 30%. This finding does not imply that people refuse to cooperate in all circumstances; they like to cooperate but at a self-chosen moment, with freedom to set their own pace. But we should not only focus on the unwillingness of chosen respondents to be interviewed, another reason for the raising rate of non-response is 'non-contactability' of potential respondents: busy life, phone line used for internet access, ownership of call-screening devices and the extent to which potential respondents use these devices to screen unwanted calls (Tuckel, O'Neill, 2002). So there was a need for instruments with better response rates.

In 2000 a series of tests and pilots were carried out to investigate which data collection method would be the best successor of the CATI approach. A new JIC was founded, called NOM and based on the insight into the do's and don'ts generated by the pilot studies a decision was made about the new Print Monitor.

## 2. The new research design

In scheme 1 the research design is visualized.



Scheme 1. Research design of the new Dutch National Readership Survey.

Four parts can be discerned in the research design. The screening phase has two functions: it serves as an instrument to find non-PC-owning households (about 20 - 25% of the Dutch population 13+) and it supplies information necessary for the weighing procedures.

The core of the design is the readership research. The total sample is 24,000. About 20,000 of them are selected from the access pool of TNS NIPO, and they can be considered to be representative for the PC-owning households. Additionally 4,000 respondents are interviewed face-to-face, they are representative for the non PC-owning households. Half of all respondents are involved in the Target Group Monitor (n=12,000).

CASI is applied in the Dutch National Readership Survey in two different ways. In households without a pc an interviewer hands over the computer to the respondent, plays a rather passive role, but remains available for instructions and assistance (CASI-IP, Interviewer Present). In PC-owning households the respondent is sent a questionnaire, which (s)he completes at a self chosen moment and then returns. All this is done via the Internet or a direct modem connection (CASI-IA, Interviewer Absent).

The changes in the Dutch National Readership Survey were not limited to the method of data collection. In scheme 2 an overview of all changes is presented. In the left column the characteristics of the old SummoScanner can be found, in the right column the characteristics of the new NOM Print Monitor.

	SummoScanner (old)	NOM Print Monitor (new)
Method	CATI, fresh sample	CASI, mixed mode
Title introduction	Individual	EML
Filter	Ever read	Past 12 months
Recency	Two qualifying categories for AIR	One qualifying category for AIR
Frequency	No. out of last 6	Verbal, 7 pnts
Visual prompts	no	yes

Scheme 2. Differences between old and new Dutch National Readership Survey.

Of course all these differences can have their effects on AIR estimates and cumulative readership. But in this paper we will try to separate CASI effects from other effects. And thus show the implications of a virtual interviewer. In particular for media research.

As stated the access pool plays a crucial role in our design. So let us give some more details. The pool encompasses Summer 2003 over 40,000 households and more than 100,000 individuals.

#### recruitment process:

• respondents are recruited in 'classical surveys' (CAPI, CATI) and not via Internet or web-sites. All members of a household, so also computer 'illiterates', can be involved in a study. Extra efforts to create volume in the category of respondents with low PC-ownership figures (e.g. elderly people).

#### frequency of participation:

• access controls are used to prevent respondents from too frequent participation.

sampling process:

• a large amount of data has been gathered already, so we can stratify the sample in advance according to population figures and also according to lifestyle profiling.

contact process:

• usually a pre-notification letter either by e-mail or conventional mail is sent. This letter clarifies for whom within the household and when a questionnaire will arrive (e.g. Friday evening for mrs. X).

#### completion process:

• the respondent can answer the questions off-line, so the telephone line is not occupied during the interview and the questionnaire can be completed at the time and in the pace desired.

#### return process:

• after the questionnaire has been filled out, the respondent establishes contact with the TNS NIPO server in Amsterdam and sends the data back. All this is done via the Internet or a direct modem connection.

incentive:

• amongst others air miles are used as a universally relevant currency, providing value to all segments of the population. Incentives are given to all who complete the survey.

#### response rates:

among those invited 85% to 90% complete the interview and the main reason for no completion is absence at home.

Dedicated user-friendly software is developed and all kinds of visual cues (in colour and/or moving) can be inserted, helpfunctions and help-screen are available. The software is so easy to use that the instructions are no problem even for older people or those with a lower level of education. But of course the respondents in the access pool can only be representative for PCowning households. So to get a picture of the total population additional face-to-face interviewing in non-PC-owning households is necessary. But because this is a hybrid approach and the data collected with two instruments are integrated we should optimise comparability. So we minimize the role of the interviewer. The face-to- face interviewers place the PC at the table and ask the respondent to fill in the questionnaire. The interviewer only gives technical help, assists only if necessary, and plays a passive role. So both methods of data collection can be characterized as CASI, but in two variants: CASI-Interviewer Absent and CASI-Interviewer Present.

The access pool being representative for PC-owning households and that there is no kind of panel bias was shown in a separate experiment in which a sample of fresh CAPI-IA respondents was compared at many characteristics with a sample from the existing access pool. No systematic differences could be detected, except willingness to cooperate, which was somewhat lower in the fresh sample.

#### 3. Permission research: a bright future

The transition from CATI or CAPI to CASI, and within CASI mainly to CASI-online is not a coincidence. The considerations about non-response and more respondent-friendly ways of interviewing not only influenced the National Readership Survey but also research in general. In Research World (January 2003) an article appeared about the Dutch market research industry and a main conclusion is: 'one of the Dutch market's noteworthy distinctions is its high incidence of online research'. Compared to other countries the Dutch seem to be ahead of others, so other countries may benefit from our experiences (Havermans, 2003). Also there is a general tendency to use a hybrid approach, like the one used in the National Readership Survey. Face-to-face and online research are often used as complementary approaches, as the Internet provides good access to young men, a group difficult to reach, while face-to-face still opens the door to older women, who tend to be under-represented on the Internet.

Many people do have willingness to participate in research, but under certain conditions. Research in The Netherlands shows that 10 - 15% always cooperates and 10 - 15% never cooperates. The remaining 70% - 80% claim it is dependent upon several conditions. They want to know that it is genuine research, not a sales pitch. Also that the study is being conducted by a legitimate research agency. They would like to be pre-notified that they may be approached for research. And most importantly, they would like to decide themselves when they answer questions. That can be on Sunday morning, but also late in the evening.

Convenient moments at which face-to-face interviewers are not on their way. The new thinking is 'permission research'; that is giving respondents the choice of how they respond (to an interviewer) and being respectful of the respondents privacy. The growth of online panels and access pools shows this approach is working. Besides this permission research argument there is a cost saving argument.

As Havermans (2003, p.60) states the shift towards Internet surveys got an unintended push last year when the costs of face-to-face interviews rose by 30% due to new labour laws affecting interviewers. The considerable increase in costs, combined with the overall economic slowdown has caused many clients to look for alternatives to face-to-face surveys.

The transition from CATI or CAPI to CASI is carried out by TNS NIPO last years in several domains. More fundamental studies were done to get continuity in the benchmarks. And an important conclusion was that fresh CATI or CAPI samples are more biased to interest in the subject of the research than samples from the access pool. Potential respondents in a fresh sample want to know what the survey is about and their decision to cooperate is also based on their interest in the subject of the research. Participants in the accesspool cooperate and the response is not selective based upon the subject of the research probably because they think: 'this survey might be not so interesting, but probably the next will be'. We found for example that in research for the government, fresh ad hoc samples have a higher trust in the government than samples drawn from the access pool. In short: in a fresh sample there is more chance upon a subject related bias.

## 4. CASI: lessons from the social sciences

In CASI the computer has taken the role of the interviewer, respondents themselves read the questions on the screen and enter the answers. Theoretically, this combines the advantages of traditional self-administered questionnaires; such as more openness with sensitive questions, with the possibility of using complex question structures. Now we will present an overview of relevant findings in social science literature about CASI. From this overview we can deduce which effects can be expected concerning media behaviour by the transition from CATI to CASI.

The following themes will be elaborated:

- (1) respondents generally like CASI
- (2) they experience a higher degree of privacy and anonymity, which leads to less social desirability, more openness and less sensitivity to social prestige biases
- (3) there is less time pressure and there is evidence that the pressure to respond quickly reduces accuracy of recall behaviour. The respondent is locus of control and determines the pacing of the question-answer process (no rushing through by the interviewer). When answering open questions they can take the time to say exactly what stimulates them.
- (4) the impact of interviewer characteristics upon responses disappears in a CASI environment.

In the Netherlands Edith de Leeuw carried out several literature studies concerning methods of data collection (de Leeuw & Nicholls, 1996; de Leeuw, Hox & Snijkers, 1995; de Leeuw, Hox, Kef, van Hattum, 1997, 2000) and furthermore the research literature on mental health, risk behavior, drug use, delivers information about the influence of different methods of data collection.

### ad. 1. likeability

De Leeuw and Nicholls (1996) cite several studies concerning the likeability. And they conclude (p. 12): 'respondents generally like CASI; they find it interesting, easy to use and amusing'.

Beckenbach (1995) reports that more than 80% of the respondents has no problem at all using a computer and interviewing program and that few respondents complain about physical problems such as eye-strain.

### ad. 2. experience of privacy, more self-disclosure, less sensitive to social prestige bias.

Weisband and Kiesler (cited by de Leeuw) found strong support for the hypothesis that respondents experience a higher degree of privacy and anonymity, which would lead to more self-disclosure and less social desirability bias. They found that even when CASI was compared with self-administered paper-and-pencil questionnaires (PAPI) self-disclosure was significantly higher in the computer condition. The effect reported was even larger when more sensitive information was asked.

Epstein et al. (2001) report the results of a comparison between CASI and the classical interviewer-administered paper-andpencil interviews (an interviewer asked questions about mental health symptoms, the respondent replied and the interviewer marked the responses on the questionnaire). The authors conclude that respondents report more mental health symptoms when interviewed with CASI. They ascribe this finding to the respondent perception that CASI provides greater privacy. And they state (p. 543): 'similar results have been reported when comparing CASI to other forms of survey administration with regard to sensitive topics, such as male-male sex, injection drug use, drug use in general and number of sexual partners among females'. Besides the effect of more confidentiality because the interviewer does not hear the answers, the use of a computer itself may enhance the feeling of privacy (de Leeuw et al. 2000). After an answer is given, the answer disappears from the screen, while an answer that is written down remains on the paper for everyone to see.

De Leeuw et al. (1995) report studies in which CASI was compared with other methods of data collection and in which social desirability was studied. Using the Crowne-Marlowe social desirability scale, less social desirability was found in the CASI approach. Even the comparison between CASI and mail questionnaire led to the conclusion that fewer socially desirable answers were found in the electronic version.

De Leeuw et al. (1997) report the results of a study under about 6,000 children, aged 8 -12, at primary school. The questionnaire also contained a short test measuring the tendency to give socially desirable answers; a high score on this 9 itemtest indicates that a child has the tendency to give honest, socially undesirable answers. There was a significant difference between the CASI-condition and the paper-and-pencil (PAPI) condition. Children in the CASI-condition gave more undesirable answers than children in the PAPI-condition.

Regarding openness and self-disclosure de Leeuw et al. (1997) looked at the answers on both the bullying test and the victimization test. Children in the CASI-condition reported that they were actively involved in more bullying than children in the PAPI-condition. In the CASI-condition also more victimization was reported.

Gard (2000) shows that these results also apply to a specific segment: teenagers. Teenagers are more likely to admit to risky behavior when answering questions on a computer than when filling out a written survey. In the research was found that the males responding on the computers were two to five times more likely to admit to engaging in risky behavior than those using written questionnaires. Lessler et al. (2001) also conclude that CASI will yield significantly higher reports of drug use for youths.

Newman et al. (2002) analyzed data to access the differences between face-to-face interviewing and audio-CASI on self-reports of HIV risk behavior among injecting drug users attending syringe exchange programs in 4 US cities. They conclude significantly more reporting of stigmatized behaviors with CASI. And at a more general level more self-disclosure of potentially sensitive behaviors.

### ad. 3 less time pressure.

The freedom respondents is given, provides them with greater motivation. The quality of the data is high because respondents need not hurry to finish the interview. They can take their time, even temporarily break off the interview. A consistent finding in the literature is that item-non-response caused by respondent or interview errors, is virtually eliminated (Nicholls, Baker & Martin, 1997).

De Leeuw et al. (1997) conclude in their primary school study that a far higher percentage of missing values occurred in the PAPI-condition then in the CASI-condition. An interesting result in their study was that the corresponding standard deviations also differed strongly between the groups. In the PAPI-condition standard deviations were much higher and item non-response was higher. The authors give as an explanation (p.5): 'this can be attributed to the fact that with a paper questionnaire children who are not very concentrated or who are careless can easily skip a question or even a whole page by mistake. CASI forces children to be more precise'.

Less time pressure has also consequences for reporting readership behavior. This way of interviewing captures more casual reading, exactly the kind most likely to get passed over in a time-rushed interview (see also Lindner & Mallett, 1995).

### *ad. 4 less impact of interviewer characteristics.*

From the social science literature it becomes clear that there is a process of interaction between the interviewer and the respondent during the interview but even during the pre-stage of the interview. Concerning the pre-stage Pondman (1998) shows that refusal rates differ significantly between interviewers. During the interview interviewer's gender, age, experience, social skills, physical appearance and even voice characteristics influence the answers given (Dijkstra 1983, Couper & Groves, 1992, Smit, 1995). There are for example interaction effects between interviewer gender and responses to gender-related questions. This effect may have considerable consequences for answering questions about gender-related magazines (Kane & Macaulay, 1993).

## 5. Consequences of applying CASI in readership studies

## 5.1 Hypotheses

The results in the preceding paragraph show that one can expect changes in results if a transit from CATI to CASI is made. In other words: the transition from CATI to CASI will generate effects concerning media behavior that can be explained based on social science literature. Let us consider two effects derived from the social science findings.

(1) the openness effect

CASI generates as we saw in par. 4 more self-disclosure (remember for example the bullying test and victimization test we mentioned earlier). Transferred to media behavior we can expect that respondents are more open about 'sensitive media' like Playboy, Penthouse, gossip and also more men admit that they read women's magazines.

## (2) the prestige effect

CASI implies less social desirable answers, so less sensitivity to social prestige bias. Transferred to media behavior we can expect lower reach figures for prestige magazines than in CATI.

We will compare the CATI and CASI results related to these two effects. Total reach and average reach will be considered.

## 5.2 First indications

In the first presentation of the NOM Print Monitor data in October 2002 we found first indications for the CASI effects we expected (see par. 5.1). Old and new AIR (Average Issue Readership) and old and new TR (Total Reach) were compared for different groups of titles.

indications for openness effect

- new AIR and TR figures are higher for
- gossip magazines (see figure 1)
  - men's monthlies, incl. 'skin magazines' (see figure 2)
- men's weeklies

indications for prestige effect

- new AIR and TR figures are lower for
  - news weeklies (see figure 3)
    - business magazines (see figure 4)

Of course this was not a definite proof, because as we showed in scheme 2 many changes were introduced all together. But these first results were in line with our hypotheses, formulated based on experiences with CASI in the social sciences.









## 5.3 A definite proof

In March 2003 a dedicated experiment was carried out to trace method effects in more detail. In the social sciences the usual approach to test for effects of methods is to select two matched samples and confront sample A with method X and matched sample B with method Y. But NOM and TNS NIPO decided to choose for a very strong procedure:

- about 500 respondents who participated in the CASI-IA approach were selected. They are part of the access pool and participated in the Dutch National Readership Survey in a 'normal' and 'regular' way.
- some weeks later they were approached again via CATI and under the name of the sister institute of NIPO called Veldkamp. They were invited to participate in a readership survey by telephone.
- the respondents were unaware of the relation between the NIPO measurement and the Veldkamp measurement and considered the surveys as two independent measurements.
- to be more precise we obtained for 491 respondents via two methods of data collection (CATI and CASI) in the same period readership data. And because the names of different research agencies were used, respondents were unaware of the fact that the answers could be compared for statistical reasons.
- the experiment was limited to national dailies, computer magazines, news weeklies, business magazines. For the proof of the prestige effect we can use the AIR/TR figures of news weeklies and business magazines.

### An extra validation

Besides the re-interviewing via CATI of a part of the NOM respondents, in the same week also a 'fresh' sample from the accesspool was interviewed via CATI (also about 500 respondents). The reach levels of the fresh sample and the re-interviewed sample did not differ significantly, so this is a validation that we are allowed to compare the CASI-IA and CATI figures within the re-interviewed NOM sample.

In table 1 the detailed results are presented.

	Total reach (%)		AIR (%)	
	CATI	CASI	CATI	CASI
news weeklies title • HP/ De Tijd • Vrij Nederland • Elsevier	23 16 32	15 13 23	6 3 7	2 2 6
• index (CASI/CATI: CATI = 100)	71 07	51	16 06	10 3
<ul> <li>business title</li> <li>Intermediair</li> <li>FEM Business</li> <li>Quote</li> <li>Ondernemen</li> <li>Management Scope</li> <li>Management Team</li> </ul>	19 4 12 3 2 9	14 3 7 1 * 5	6 1 3 2 * 4	4 1 2 * * 1
• index (CASI/CATI; CATI = 100)	49 06	30 51	16 05	8

Table 1.	differences between	CASI and	CATI for	prestige	sensitive ti	itles (same	respondents,	same period,	different
	agencies, $n = 491$ ),	* is below	0,5%.						

The tendency is clear. For prestige sensitive magazines like news weeklies and business magazines the CASI figures are lower than the CATI figures. The figures for dailies and computer magazines did not differ.

As an illustration we present the TR (Total Reach) comparison between CASI and CATI. We use the index score CASI/CATI, scores between 90 and 110 indicate that there is no significant difference between CASI and CATI reach figures (.05 significance level). Scores below 90 are an indication for significant lower reach scores in the CASI condition.

 index CASI/CATI TR national dailies	100
 index CASI/CATI TR computer magazines	93
 index CASI/CATI TR news weeklies	72 (table 1)
 index CASI/CATI TR business magazines	65 (table 1)

The interviewer will not say: 'say yes or I'll break your arm', but has evidently a strong influence on the answers of a respondent. To an interviewer the respondent wants to state that they read news weeklies and business magazines because that sounds more 'comme il faut'.

Within the category national dailies we see the same phenomenon if we isolate the Dutch Financial Times (index CASI/CATI TR 085), a newspaper also sensitive to the prestige effect.

### 6. Conclusion

Media research has come under fire. There is dissatisfaction with methodologies and results. Time is ripe to go for new approaches. CASI in the way described in this paper is a promising new tool that will make interviewers obsolete. The era of the virtual interviewer has arrived. Moving media research online will open new perspectives for researchers, media owners and advertisers. The growing computer penetration in households will accelerate this move.

References

Bassler, A. & Tchaoussoglou, C. (2001). Searching for best CASI practices: experiments for a new data collection method. 10<sup>th</sup> Worldwide Readership Research Symposium, Venice, 255-264.

Beckenbach, A. (1995). Computer assisted questioning: the new survey methods in the perception of the respondent. BMS, 48, 82-100.

Couper, M.P. & Groves, R.M. (1992). The role of the interviewer in survey participation. Survey Methodology, 18, 2, 263-278.

Dijkstra, W. (1983). Beïnvloeding van antwoorden in survey-interviews. (Influencing answers in survey interviews) Dissertation Free University, Amsterdam

Epstein, J., Barker, P. & Kroutil, L. (2001). Mode effects in self-reported mental health data. Public Opinion Quarterly, 65, 529-549.

Gard, C. (2000). Pros and cons of telling your troubles to a computer. Current Health, 26, 5, 30-33.

Havermans, J. (2003). The strength is in online research. ESOMAR Research World, 1, 4-6.

Heer, W. de (1999). International response trends: results of an international survey. Journal of Official Statistics, 15, (2), 129-142.

Kane, E.W. & Macaulay, L.J. (1993). Interviewer gender and gender attitudes. Public Opinion Quarterly, 57, 1, 1-28.

Leeuw, E. de, Hox, J., Kef, S. & Hattum, M. van (1997). Overcoming the problems of special interviews on sensitive topics: computer assisted self-interviewing tailored for young children and adolescents. Sawtooth Software Conference Proceedings.

Leeuw, E. de, Hox, J., Kef, S. & Hattum, M. van (2000). Computer assisted self-interviewing tailored for special populations: a guide on how to overcome the problems of special interviews and sensitive topics. Proceedings of the fifth international conference on logic and methodology, Cologne.

Leeuw, E. de, Hox, J. & Snijkers, G. (1995). The effect of computer-assisted interviewing on data quality: a review. Journal of the Market Research Society, 37,(4), 325-344.

Leeuw, E. de & Nicholls, W. (1996). Technological innovations in data collection: acceptance, data quality and costs. Sociological Research Online, 1, 4, <u>www.socresonline.org.uk</u>.

Lessler, J., Caspar, R., Penne, M. & Barker, P. (2000). Developing computer assisted interviewing (CAI) for the national household survey on drug abuse. Journal of Drug Issues, 30, (1), 9-34.

Lindner, G. & Mallett, D. (1995). The interviewer effect on readership levels. 7<sup>th</sup> Wordwide Readership Research Symposium, Berlin, 209-217.

Newman, J., Des Jarlais, D., Turner, C., Gribble, J., Cooley, P. & Paone, D. (2002). The differential effects of face-to-face and computer interview modes. American Journal of Public Health, 92, (2), 294-297.

Nicholls, W.L., Baker, R. & Martin, J. (1997). The effect of new data collection technologies on survey data quality. In: L. Lyberg et al (Eds), Survey measurement and process quality. New York: Wiley.

Noort, W. van der & Tchaoussoglou, C. (1995). The importance of being constant. 7<sup>th</sup> Worldwide Readership Research Symposium, Berlin, 111-116.

Noort, W. van der & Tchaoussoglou, C. (1999). Divide and unite: splitting the SummoScanner and data fusion. 9<sup>th</sup> Worldwide Readership Research Symposium, Florence, 325-331.

Pondman, L.M. (1998). The influence of the interviewer on the refusal rate in telephone surveys. Dissertation Free University, Amsterdam.

Smit, J.H. (1995). Suggestive vragen in survey-interviews. (Suggestive questions in survey interviews) Dissertation Free University, Amsterdam.

Stoop, I. (2002). Nonresponse in household surveys: care and cure. SCP, internal publication.

Tuckel, P. & O'Neill, H. (2002). The vanishing respondent in telephone surveys. Journal of Advertising Research, sept/oct, 26-30.