Evaluating compliance with a computer assisted randomized response technique: a qualitative study into the origins of lying and cheating

Gerty J.L.M. Lensvelt-Mulders *, Hennie R. Boeije

Department of Methodology and Statistics, Utrecht University, P.O. Box 80140, 3505 TC Utrecht, The Netherlands

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Abstract

This paper presents the results of a phased qualitative study into the possibilities of a combination of computer assisted self-interviewing with the randomized response technique to decrease evasive answer bias when sensitive topics are studied. As a sensitive topic, compliance with rules concerning the right to receive welfare was studied. In total, 18 respondents (age 21–63, 12 females, 6 males) filled out the questionnaire and were interviewed afterwards. In the first phase, 11 respondents did not follow the randomized response instructions, but after the questionnaire was adapted, cheating (i.e., not operating according to randomized response rules) diminished to nil in the second phase. Most respondents trusted the research setting enough to give incriminating answers to sensitive questions, but lying (i.e., not giving an accurate answer to a question) could not be totally prohibited. Recommendations are formulated for researchers who want to set up their own computer assisted randomized response questionnaires.

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* Corresponding author. Tel.: +31 302 535 857; fax: +31 302 535 797.
E-mail address: g.lensvelt@fss.uu.nl (G.J.L.M. Lensvelt-Mulders).

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1. Introduction

Researchers in the social sciences are frequently confronted with research questions about socially sensitive or taboo topics, for instance when studying (deviant) sexual behavior, criminal behavior or the use of alcohol and drugs. The incorrect response to sensitive questions can be explained by social desirability theories (Sudman & Bradburn, 1982). Respondents wish to avoid social embarrassment and they try to project a positive self-image. Therefore, topics with a negative connotation, like abortion, child abuse, rape or use of hard drugs are often underreported (Finkelhor & Lewis, 1988; Soeken & Damrosch, 1986). Overestimation is found for behaviors with a positive connotation, like pro-environmental behavior or wearing seatbelts (Himmelfarb & Lickteig, 1982; Stem & Steinhorst, 1984). And some behaviors, like the use of cannabis and marijuana, are found to be overestimated in a population of teenagers and underestimated in an adult population (Zdep, Rhodes, Schwartz, & Kilkenny, 1979). When sensitive or incriminating topics are studied, researchers are therefore often confronted with high rates of non-response and incorrect answers, making the results less reliable and valid (Lee, 1993).

Currently, one of the mainstream solutions to the sensitive topic problem is the use of computer assisted self-interviewing (CASI), with audio-CASI as latest development. The use of computers to collect sensitive data has multiple advantages (De Leeuw, Hox, & Snijkers, 1998). One of the advantages is the increase in the respondent’s perception of privacy protection, which can lead to greater self-disclosure (Supple, Aquilino, & Wright, 1999). Previous studies have shown that the use of a computer does not per se have a consistent effect on (data) distortion, since the distortion seems to depend on moderating factors, such as whether the respondents were tested alone or with others (Richman, Kiesler, Weisband, & Drasgow, 1999). Lensvelt-Mulders, Hox, and Boeije (2002) argue that the use of the computer will slowly lose its magic because computers are becoming more and more common tools. In addition, negative publicity will probably contribute to a lower trust in computer assisted interviewing. More and more information is being collected and recorded in large databases, and in the media respondents are frequently confronted with negative news on the misuse of these databases, such as the selling of information to third parties and the merging of databases from different organizations.

Already in 1965, Warner developed a way to increase the reliability and validity of answers on sensitive topics: the randomized response technique (RRT).¹ The basic

¹ Further reading on randomized response techniques:
- Two dependent statements procedure (Warner, 1965).
- Unrelated question technique (with unknown population means for the innocuous questions) (Greenberg, Abdul-Ela, Simmons, & Horvitz, 1969).
- Unrelated question technique (with known population means for the innocuous questions) (Horvitz, Shah, & Simmons, 1967).
- Forced response technique (Boruch, 1971).
- Moors procedure (modification of the UQT) (Moors, 1971).
- Folsom’s modification of Moor’s Procedure (Folsom, Greenberg, Horvitz, & Abernathy, 1973).
- The improved two step procedure (Mangat, 1994).
- Kuk’s card method (Kuk, 1990).
- Item count paired-list technique (Miller, 1984).
- Greenberg’s RRT for quantitative measures (Greenberg, Kuebler, Abernathy, & Horvitz, 1971).
- RRT for the detection of cheating (Clark & Desharnais, 1998).
premise of all RRTs is that the data are deliberately contaminated with random error by introducing an element of chance. Using an RRT prevents against the possibility of disclosure to third parties and diminishes the need to give socially desirable answers by totally protecting the respondents' privacy (Fox & Tracy, 1986). In our study one type of RRT was used, the forced response method (Boruch, 1971). In this method, respondents are asked to throw two dice before answering a sensitive question. When the dice come up 2, 3 or 4, respondents are ‘forced’ to answer ‘yes’, regardless what their true answer would be. When the dice come up 11 or 12, the respondents are ‘forced’ to respond with ‘no’, again regardless what their true answer would be. Only when the dice come up 5–10, are respondents requested to answer the question truthfully. Neither the interviewers nor researchers or third parties know the outcome of the dice, so it can never be known whether an individual yes-response means “yes, I have thrown 2, 3 or 4” or “yes, I have the sensitive attribute”. This totally guarantees the respondent’s privacy.

Meta-analysis of the results of 42 RRT studies showed that RRT conditions provide more valid results than face-to-face interviews, telephone interviews, CASI and self-administered questionnaires (Lensvelt-Mulders, Hox, Van der Heijden, & Maas, 2005). But, though it was significant, this positive effect was small. It is possible that some respondents in previous studies did not understand and/or trust the RRT enough to give honest answers to all questions, especially when the answers would be incriminating, so they chose to give the safe answer, thus “lying” (Landsheer, Van der Heijden, & van Gils, 1999). A second explanation is that using an RRT to study a sensitive topic introduces an extra source of error, namely cheating. By cheating we mean that respondents deliberately do not follow randomized response instructions when the dice come up 2, 3, 4, 11 or 12 (Clark & Desharnais, 1998). Cheating can occur when respondents do not understand the RRT rules, and therefore make mistakes applying them. It can also occur when respondents do not trust the RRT enough to give random incriminating answers.

CASI and RRT agree in the assumption that greater privacy will lead to more honest self-disclosure. In turn this will diminish the need to give a socially desirable answer. In the end this should result in more valid population estimates for socially sensitive or incriminating behavior (Antonak & Livneh, 1995; Umesh & Peterson, 1991). The use of an RRT in a CASI environment has the potential of combining the advantages of both methods and of bringing forth even more valid results.

An experiment was performed to develop and improve the computer assisted randomized response (CARR) design, to make it suitable for use in Internet surveys. Three questions were examined:

- Were the CARR instructions formulated clearly enough to allow respondents to fill out the CARR questionnaire independently?
- Were the CARR instructions formulated so that they established the understanding and trust needed to follow the RRT rules i.e., to prevent respondents from cheating?
Was the CARR environment felt to be secure enough to allow the respondents to give honest answers to sensitive questions, even when these answers were incriminating?

Based on the results, we will formulate instructions to help researchers in socially and psychologically sensitive fields set up their own CARR research.

2. Methods

2.1. A qualitative research design

A qualitative approach was chosen since this methodology is better able to indicate whether respondents complied with the CARR instructions and for what reasons, something that would be difficult to capture using a quantitative approach (Kidd, 2002). To collect data, semi-structured interviews were used to investigate the cognitive aspects of CARR questionnaires, the way in which information pertaining to the CARR questionnaire is processed in the mind of the respondents. This type of interviews contributed to the understanding of the psychological processes that guided decision making in the question–answer process (see also Snijkers, 2001; Tourangeau & Rasinski, 1988; Tourangeau, Rips, & Rasinski, 2000). The qualitative approach helped provide insight into differences between the respondents’ perspectives on sensitive questions versus those of the researchers, as well as rectifying possible misunderstandings in the questionnaire (Bryman, 1992).

Interchanging data collection and analysis is a well-known practice in qualitative research (Mason, 1996; Maxwell, 1996). This practice fit well with the applied nature of our study, since it offered the possibility of adjusting the questionnaire after the first phase and testing it again in the second one. The first phase, in December 2001, focused on how well respondents could understand and apply the RRT rules, because these are known to be more demanding for respondents than standard question–answer designs (Nathan & Sirken, 1988). Furthermore, attention was paid to two distinct validity threats known from earlier RRT studies, namely cheating and lying. The results of the first phase were used to improve the CARR questionnaire for the second phase of the study, which was completed in February 2002. The consequences of the adaptations in the CARR design were evaluated at this time.

2.2. Respondents

In total, 22 respondents were recruited from the files of the Department of Social Services of the city of Amsterdam, The Netherlands. Four respondents decided not to participate and did not show up at the appointment. Eleven respondents participated in the December study, and 7 respondents participated in the February study. The aim of the study was described to the respondents as an attempt to improve a research method (RRT) concerning information that people find difficult to reveal.
Respondents were between 21 and 63 years of age, with half the respondents over 45. Twelve females and six males co-operated. Sixteen respondents had the Dutch nationality, and two respondents came from the Dutch Antilles. All respondents had received welfare benefits for over one year, and half of them had been dependent on welfare for more than 10 years. It could, therefore, be assumed that they were acquainted with the regulations concerning the right to social security benefits. Although two respondents had a higher vocational education, as a group the respondents were less educated than the general Dutch population and generally had limited labor experience. This combination of factors reduces their chances on the job market, and increases their dependence on welfare. Respondents came to the NIPO (Dutch Institute for Marketing Research), Amsterdam, because the NIPO had the necessary computer facilities. Respondents were paid 35 Euro for their help.

2.3. Sensitive topic

The sensitive topic in these studies concerned the compliance of respondents with social welfare rules (Van der Heijden, van Gils, Bouts, & Hox, 1998, 2000). Respondents had to answer questions about their compliance with the regulations associated with social welfare. Revealing information about compliance with regulations is threatening in two ways. On a personal level it can have large negative consequences for one’s monthly income, and there is even the risk of legal prosecution and punishment. And on the level of the social group, even if an individual respondent has never made false claims or broken any regulations, a larger population estimate for non-compliance could lead to stricter policies, which would have negative personal consequences. This could include stricter enforcement with more frequent checks, as well as negative publicity about the social group in general. It is fair to conclude that the content of the questions was indeed socially sensitive.

2.4. The randomizer

In the December study, the respondents had to answer two blocks of six questions presented to them on a computer screen. In one block, two real dice were used as randomizer, whereas in the other block virtual dice were used. These two blocks were proposed to the respondents in random order. In the February study, the virtual dice were used to answer all 12 questions, since the alternation proved to be confusing
and the respondents definitely preferred the virtual dice to the real ones (Boeije & Lensvelt-Mulders, 2002).

2.5. Filling out the questionnaire

Before respondents started filling out the CARR questionnaire, the researcher described the method to the respondent. This description was intended to increase the respondents’ understanding of and trust in the method (Boeije & Lensvelt-Mulders, 2002; Landsheer et al., 1999). In the February study, this introduction was briefer, because it was assumed that individuals who would use CARR in an Internet setting would not be given an extensive oral introduction. However, for some respondents it was deemed necessary to explain the use of the three keys they had to use: 1 (=yes), 2 (=no) and enter (to continue and to manipulate the dice).

Before the respondents started to answer the survey questions, they were given three trial questions to practice with the method. The trial questions were: “Have you read a newspaper today?” “Did you drive through a red traffic light last week?” “Did you use public transportation without a valid ticket last month?”

When the introduction was finished, and after the researcher left the room, the respondent filled out the questionnaire. When consent was obtained, the sessions were video taped (all except two). The two researchers observed the respondents filling out the questionnaire by means of the video. A stopwatch was used to measure the time it took to answer each question and to complete the entire questionnaire. Notes were taken on the respondent’s behavior: in particular, sighing, reading aloud and how respondents dealt with the dice. These notes were used in the qualitative interview held afterwards to learn how the respondents interpreted the RRT and how they formulated their answers.

2.6. The interviews

Informed consent was also asked and given for audio-recording of the interviews. The two researchers took turns interviewing the respondents, while the other one followed the interview on video-screen. To encourage people to talk about their experiences, the first question was loosely formulated as, “And, how did it go?” After eliciting respondents’ first impressions, a conversation guide was used with topics derived from the literature and the experience of our research group with previous RRT studies (see Appendix A) (Boeije & Lensvelt-Mulders, 2002; Landsheer et al., 1999). In general, respondents were eager to tell what they had thought when filling out the questionnaire. On average interviews took 30 min. In the February study, the focus of the interviews shifted. Some topics, like the use of the computer and the readability of the instructions, had been thoroughly covered, and did not need to be dealt with again. The focus in the second round was on the understanding and application of the method, and
therefore respondents were asked exactly what steps they had taken in the question–answer process, whether they saw a relationship between the use of this method and their privacy protection, and whether they had complied with the randomized response rules.

3. Analysis

The analysis of the interviews consisted of two activities that kept each other in equilibrium, namely fragmenting and connecting (Dey, 1993). In the first activity, the component parts of each interview were separated into categories and labeled with codes. This involved listening intensively to the tapes of the interviews. For brevity’s sake, the interviews were paraphrased and only relevant parts were transcribed. Categories such as “cheating” and “lying” were clearly defined by the theoretical framework, whereas “lucky hand” and “forced dishonesty” emerged from the data. Later on, the codes were placed into what appeared to be the major categories, namely “handling the computer” and “privacy and exposure”. One researcher [H.B.] conducted the first phase of open coding and both researchers discussed the final analysis, seeking to ensure that they made the same interpretations in order to enhance inter-rater reliability.

In the second activity in the analysis process, the parts were interpreted as a whole and the pieces of each case were connected together. An interpretive reading of the interviews was conducted, calling for our active involvement in inferring meaning from the data (Mason, 1996). The diverse sources of data, interviews, audio-tapes and video recordings, could be compared, which allowed for data triangulation (Seale, 1999). For example, respondents mentioned that “they were lucky” or “they had thrown well” and explained that this meant they were allowed to give their own answer. From this it was concluded that respondents who considered themselves to be persons who did not break the regulations were irritated when they were forced by the dice to present themselves as persons who committed unlawful behavior. A matrix was used as an analytical tool to connect their compliance with forced and “true” answers in our study.

4. Results

4.1. Using the computer independently

4.1.1. Handling the computer

Twelve respondents had little or no experience using computers, while the remainder was more familiar with them. All respondents found the RRT instructions on the screen clear and they were all able to finish the questionnaire without help. Nevertheless, one respondent interpreted the instructions incorrectly and gave forced affirmative answers when he threw anything between 2 and 10.
The views on computer assisted interviewing differed among our respondents. Some respondents thought that a computer would not encourage telling the truth, whereas a face to face interview would be more likely to evoke a truthful answer:

It’s machine language: it’s yes or no. When you talk to someone, you can elaborate. I’m not happy about the black and white, ’cause life isn’t black and white. (R9)

On the other hand, in both phases most respondents maintained that it felt more private to work with a computer and that it helped them to fill out the questionnaire honestly.

4.2. Cognitive aspects of CARR

For the respondents, the RRT is associated with doing two things at the same time. On average they needed between 1 and 3 min to finish a question, but when their own answer had to be changed as a consequence of the dice forcing them to give a different answer, they needed more time, up to 30 s. As one respondent explained:

Actually, you’re doing two things at the same time. You’re throwing dice and you’re busy with the questions. And they’re both equally important. And sometimes I forgot the question by doing so and then I had to read it again. (R1)

All respondents developed a strategy of reading the question first and then formulating an answer in their head. After doing this, they checked the results of the randomizer to see if this was the answer they had to give or whether a forced yes or no-answer was expected. As a consequence of the extra activity, RRT is more cognitively demanding than answering a standard direct question–answer questionnaire. Although some of the respondents were insecure as a consequence of their position, they were all able to follow the complicated RRT-rules:

At first I was afraid I couldn’t do those two things at the same time. I’m kind of chaotic you know, and then I panic and think I can’t do it, but hey, I managed and it wasn’t as difficult as I thought it would be. It was more like a game. (R18)

4.3. Did perceived privacy result in more exposure?

RRT assumes that privacy protection is an important precondition for respondents giving honest answers in a survey on sensitive topics. For respondents privacy was an important issue. In several cases, the first thing they asked when they entered the room was whether the results of the study were really confidential. When permis-
sion was asked to make video and audio recordings of their session, privacy was again an issue.

Did respondents understand how RRT safeguarded their privacy, and did they trust the RRT enough to cooperate and give honest answers to sensitive questions? To check for understanding of the relationship between RRT and privacy protection, respondents were asked to explain the rules of the RRT in their own words. All of them could explain the forced response procedure in terms of dice thrown and decisions made to answer with a forced ‘yes’ or ‘no’ instead of sticking to the truth. One respondent put it this way:

Well, you have to read it very carefully. And, with several throws I could say yes or no, so I could answer honestly. What I know of two, three and four is that I had to say ‘yes’. With eleven and twelve respectively ‘no’, if I’m right. But I didn’t throw that. (R13)

Respondents had far more trouble explaining the rationale behind the way the RRT protects their privacy. Only eight people could explain how the forced response method safeguarded their privacy:

I trust it with the dice. I think it’s a good method. I think it will work, since this way they can never find out whether it’s a lie or real. I assume that my throws with the dice are not registered in the computer. Now, Social Services can phone me and accuse me of having a site caravan, but that’s not true because I was forced to say ‘yes’. They can’t get at the truth. (R16)

Understanding did not automatically lead to compliance since most of the respondents reported that they would have had more trouble complying if this study had been conducted by people from the Department of Social Services. This means that the respondents’ cooperation with our experiment was only partly based on trust in the RRT and that other guarantees were also important. For instance, respondents argued that the computer gave them a feeling of anonymity and/or that they felt anonymous because their name was concealed. This result confirmed our assumption that a combination of CASI and RRT could lead to more trust and therefore to less answering distortion.

4.4. Forced to be dishonest and cheating

The use of RRT introduces a new source of error, namely cheating, in this case the respondents’ refusal to follow the RRT rules. Respondents in our sample disliked giving a forced positive answer when their “own true” answer was negative:

(I) Did you have to give a forced answer?
(R) Yes, with the site caravan, whether I have a site caravan. Well, I would like to have one!
(I) How did it feel to give a forced “yes” answer?
(R) I know it’s part of the game. But no, of course it’s not funny, because I don’t own one. But the computer wants me to have one. OK, have it your way”. (R1)
The respondents introduced the term ‘forced to be dishonest’, by which they meant that giving forced answers to a question, in particular positive answers when they should have been negative, was felt to be dishonest and unpleasant.

A lucky throw or a ‘good’ hand was experienced when the dice hit between 5 and 10, because then the respondents could give their own answer. A bad throw was interpreted as a forced answer that did not correspond with the “true” one and conflicted with their conscience. Even when the dice determined their answer, all the respondents read the question anyway to see what they had to confirm or deny. This satisfied their curiosity, but emphasized the fact that they had to give a dishonest answer.

Being honest was important to the respondents, but that did not mean that they dodged the RRT rules. When asked whether they actually gave the forced answer, in the December study eight of the eleven respondents told us they did so because, as one of them commented: “It isn’t the truth, but everyone knows that it’s not. Those are the rules of the method”. One person did not have to give a single forced answer and could not imagine what it would feel like. One person said she did not comply with the instructions on purpose, and just gave her own answers (cheating). She explained as follows:

You have no power over the dice. When they fall on twelve, then you have to say no. Something is being forced on you. And then it’s just like eating, you have to eat spinach but you don’t like it. Well, then I won’t do it. That thing [the computer] is a dead thing. It obliges me to press a key I don’t want to. My answer belongs to me. (R8)

One respondent solved the problem by throwing twice to be enabled to give a different answer, and other respondents acknowledged that if you do not want to play fair, you do not have to bother throwing twice, but just give the ‘wrong’ answer.

In the February study, the respondents’ feelings about being dishonest were acknowledged by the insertion of an extra instruction text after the trial questions as follows:

You have just filled out three trial questions. Maybe it has happened to you that you threw 2, 3 or 4, and had to press “yes”, when your true answer to the question should have been “no”. Or maybe you threw 11 or 12 and had to answer “no”, when your true answer should have been “yes”. From earlier research we know that some people find this strange, and think their answers false and their behavior dishonest. But you do not have to worry about that. This ‘dishonesty’ is part of the dice method. Here different rules apply and you are honest when you answer according to the dice. It is like a game: when you play it by the rules, you play it honestly.

The purpose of this adjustment was to change the respondent’s understanding of the question–answer processes and to encourage them to answer all questions
according to the RRT rules. This manipulation seemed helpful. Respondents better understood that being honest in a randomized response questionnaire such as this meant following the randomized response rules. In the February study, only one respondent was not prepared to give forced positive answers and still cheated on the RRT rules.

4.5. Lying: the meaning of honesty

When the respondents threw 5–10, they had to answer truthfully. Fourteen respondents told us they answered truthfully whenever they had to. These 14 respondents could be categorized into two categories. The first category gave straightforward honest answers, even when the answer put them in a negative light. They were willing to answer the randomized response questions truthfully when asked. For instance, one respondent told us in the interview that, when she was asked whether she had had any other income than her allowance, she answered yes, because she had shortly before sold a self-made piece of art for 500 Euros.

The second category was more ambivalent towards the topic of rule breaking. They were willing to answer according to the Department of Social Services’ regulations when throwing 5–10, but they were not convinced they had done anything wrong according to their own rules. They explained to us that there was a large grey area where their own conscience was their measure and not the Department of Social Services. One respondent told us that she had answered affirmative when asked whether she had refused a job that was considered “suitable” by the Department of Social Services. She rationalized this behavior by telling us that at the time she felt that the job was not suitable for her because there was the possibility of entering aggressive situations. As a single mother, she had not considered such a job at all suitable. This respondent knew she had broken the regulations of the Department of Social Services (i.e., she had refused a suitable job), but considered this acceptable conduct from her own point of view. The group of respondents who felt ambivalent about the questions only answered according to the truth of the Department of Social Services because of the research environment. If the Department had asked the same questions, they would not have answered honestly.

Lying was found in the group of respondents who knew that they had broken the regulations, but were not willing to admit this in the survey. These respondents also used rationalizations to explain why they found their conduct totally acceptable:

Well, here I can tell you, but not in a survey for the Department of Social Services. I have had a friend for five years and I visit her every weekend and what’s it to them? They cut your benefits right away. And I don’t live with her, I still live on my own and for me a relationship is when you live together. And then you have to lie about that, because they cut your benefits and they do it way too fast, if you ask me. So they cut your benefits a hundred Euro and then my
friend says it’s over, what kind of problems do I have? Then you’re forced to stick to the girl because of the money. (R2)

There were certainly also respondents who held back information. An indication of this was that one person did not want to be videotaped, while another only provided additional information after he had himself ascertained that the tape recorder was off.

5. Discussion and recommendations

The results of this study of CARR depend on a small sample of a very specific group of 18 respondents, which is sometimes a cause for criticism in qualitative research (Kidd, 2002). List sampling and availability sampling (Lee, 1993) were used as selection principles in order to include a range of participants who differed on relevant characteristics, such as sex, age, time on social welfare, employment history, etc. Despite the restrictions of the rather small sample and the recruitment in one part of the Netherlands, our findings provide understanding about similar settings since they suggest explanations for the way respondents deal with CARR. In order to find out whether CARR is a useful data collection method in settings where other sensitive issues are at stake, it would be necessary to test the transferability of our main results and conclusions to these other settings, e.g. theoretical generalization (Seale, 1999).

Our results reveal that the CARR instructions were clear enough to warrant the use of a computer assisted personal interviewing approach in this special population of individuals who had little or no experience with computers and a lower educational level than the general population. With one exception, all the respondents could understand the rules of the randomized response procedure well enough to finish the questionnaire by themselves in limited time.

This study countered the assumption that respondents would cheat if they did not understand the RRT rules well enough. This was not the case. During the interviews it became clear that respondents cheated because the rules of the RRT did not coincide with their understanding of how to cope with a questionnaire. According to the literature, individuals who agree to participate in a self-report study will cooperate with the interviewer and follow the rules that are known (Cialdini, 1993). The respondents expected that being cooperative meant that they should give honest answers to the questions. This expectation brought them into conflict with the randomized response rules every time they were forced to reply contrary to their own true answer. After acknowledging their interpretations of ‘being honest’ in the CARR instructions and emphasizing that ‘being honest’ meant following the RRT rules, respondents became more comfortable giving forced responses, and cheating decreased significantly.

Furthermore, it was found that respondents were tempted to cheat because of the answering strategy that they developed. Respondents went through the whole question–answer process from reading and interpreting the question, via retrieval of the answer from memory to judging the appropriateness of the answer, before they
decided which RRT rule had to be applied. This information processing process agrees with the question–answer model developed by Tourangeau and Rasinski (1988). This made it hard for them to give a forced answer of an incriminating nature.

Some of the respondents lied when asked to answer the sensitive question according to their true status. During the interviews these respondents made it very clear that their individual interest, protecting their welfare allowance, could overrule all other arguments even when the respondents understood the rationale behind the RRT. This behavior is in line with Fox and Tracy (1986, page 39), who predicted that some respondents will be motivated to cheat and lie on the RRT, because ‘no’ is always the safest reply. Lying is also predicted on the basis of the rational choice theory. In the case of individuals who are dependent on welfare for their living and who risk having their benefits cut, it only seems rational to give the least risky reply and transgress the rules of the randomized response method (Mellers, Schwartz, & Cooke, 1998).

During the interviews, respondents put forward a number of rationalizations for violating the social benefit rules. Most of these rationalizations took the form of neutralizations (i.e., misconduct is redefined in neutral terms and made acceptable), which can be an indication for the existence of a subculture with its own standards and norms (Coleman & Ramos, 1998). The most common rationalizations were that ‘the Department of Social Services is so full of red tape that it is better to let sleeping dogs lie’, and that ‘the rules are unfair and unreasonable’. These kinds of neutralizations are also described in the literature as a potential source of insurance fraud (Clarke, 1989) and academic cheating (Lersch, 1999). Neutralizations lead to the definition of new standards within a subculture and result in persistent toleration of misconduct by its members. When new standards are strong enough negative answering when an affirmative answer is appropriate is no longer perceived as lying. The persistent ‘liars’ seemed to belong to a subgroup that thought that a lot was permitted as long as it was not discovered by the Department of Social Services.

There was a larger group of respondents that gave a false ‘true’ answer according to standards of the Department of Social Security, although this does not seem to be the rational choice. For those respondents there were two important reasons for answering the questions honestly. First, they were convinced of the importance of the study and that the results of the study could also benefit them. For instance, they reasoned that if only those who are entitled to welfare get welfare, enforcement of the rules could become less harsh and their monthly income might even be raised. Second, respondents who gave honest answers trusted the CARR environment enough to answer according to the standards of the Department of Social Security, even when this meant that they had to give an incriminating answer. These respondents admitted that they would not have answered according to the standards of the Department of Social Security if the questions had been asked in a less secure environment. It is for this group of respondents that a combination of the randomized response technique with a computer assisted environment will be most profitable.
5.1. Recommendations

To decrease the chance that respondents cheat on the randomized response rules, the following should be taken into account:

1. To avoid cheating in a forced response questionnaire, it is necessary to acknowledge the fact that being forced to answer contrary to one's own truth is difficult and sometimes even painful. Redefining the construct of ‘being honest’ in the RRT instructions dramatically decreased cheating in our study.
2. To prevent respondents from reading and answering the sensitive question before applying the randomized response rules, we changed the lay-out from ‘question followed by instructions’:

   3. Did you go on holidays abroad for over three weeks without notifying the Department of Social Security? If you threw 2, 3 or 4, please push ‘1 = yes’. If you threw 11 or 12, please push ‘2 = no’. If you threw 5, 6, 7, 8, 9 or 10, please answer the question honestly (‘1 = yes’, ‘2 = no’). to ‘instructions followed by question’: If you threw 2, 3 or 4, please push ‘1 = yes’. If you threw 11 or 12, please push ‘2 = no’. If you threw 5, 6, 7, 8, 9 or 10, please answer the following question honestly: Did you go on holidays abroad for over three weeks without notifying the Department of Social Security?’ (‘1 = yes’, ‘2 = no’).

   This new ordering guides the respondents through the randomized response process and prevents them from reading the sensitive question first.

   To decrease respondents’ tendency to lie in an RRT questionnaire, the following recommendations could be taken into account:

1. To prevent lying it is important to make it very clear how respondents’ privacy is protected and that the data can not be disclosed to other parties.
2. Try to rephrase questions in such way that it assumes the truthfulness of the respondent. “Have you ever refused a suitable job that was offered to you by the Department of Social Services?” Can be rephrased as: “Have you ever refused a job that was offered to you by the Department of Social Services because you thought it was unsuitable?” This means that a thorough knowledge of the standards and mores of the sub-population is necessary.
3. When it is possible, add questions about the third party, in this case the Department of Social Services. This will give the respondents the opportunity to blow off some steam, it will prevent the respondent from feeling like the guilty party, and the answers can help the third party to improve their service towards their clients. In our study we added questions about the way the Department of Social Services handled respondent’s cases. For instance:

   Have you always been treated respectfully by your branch of the Department of Social Services?

4. It is also important to rephrase some questions so that the ‘yes’ answer is not always incriminating. This forces the respondent to stay alert and a real
mix of yes and no answers will become the expected answer pattern. For instance:

Have you ever provided incomplete or incorrect information to the Department of Social Services about additional income that you received? (yes is incriminating)

could be rephrased as:

Have you always provided complete and correct information to the Department of Social Services about additional income that you received? (no is incriminating).

Of course it is important to remember that when you rephrase the questions, double negatives should be avoided at all times.

Appendix A. Topic list open interviews: How did it go?

A.1. The computer

• What did you think of operating the computer? (the keys)
• Was it clear to you what you had to do according to the instructions? Did you follow the instructions?
• Can you describe what steps you took in answering each question?
• Was it difficult for you to find out what you had to answer? Did you make any mistakes that you know of?

A.2. The randomized response method

• How did you feel about throwing the dice?
  – Were you tempted not to count them correctly? when?
  – Did you ever throw more than once? when?
  – Did you intend not doing what was on the instructions? when?
• Did you have to answer “yes” because of the dice while your answer was no?
  – How did that feel? why? how did you deal with that?
• Did you have to answer “no” because of the dice while your answer was yes?
  – How did that feel? is it different from a forced “yes”?
• Did you give a true answer when you had to? why (not)? Any examples?

A.3. Knowledge of the method

• How was it dealing with questions in this way?
• In a real study, would you prefer this method or the common questionnaire?
• Do you trust this method to guarantee your privacy?
• If this method with the dice was used in a real study, would you:
  – answer ‘yes’ or ‘no’ when the dice tell you? when? why?
  – give a true answer when asked? when? why?
• Do you think that people will be more inclined to answer truthfully when this method is used than when the common questionnaire without the dice is used?
• Do you see any ways to make this method more attractive?

A.4. The questions

• What did you think of the questions? Are you familiar with them?
• Did you have any specific worries when answering these kinds of questions concerning your social security benefits?
• Do you think they are sensitive? Can you say something more about that? Are there questions that you particularly think of in this respect?

Do you have anything to add?
Thank you for your cooperation.

References


**Gerty J. L. M. Lensvelt-Mulders**, PhD is an Assistant Professor of Methods and Statistics in the Faculty of Social Sciences at Utrecht University, The Netherlands. Her research focuses on research methods for socially sensitive topics, in surveys as well as experimental settings, and on doing meta-analysis for policy making.

**H.R. Boeije**, PhD is an Assistant Professor in the Department of Methodology and Statistics of the Faculty of Social Sciences at Utrecht University. She specializes in research and education in the field of qualitative methods.