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How sensitive are self-reports of offending?: the impact of recall periods on question sensitivity

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ABSTRACT

Although research on sensitive topics has produced a large body of knowledge on how to improve the quality of self-reported data, little is known regarding the sensitivity of offending questions, and much less is known regarding how topic sensitivity is affected by recall periods. In this study, we developed a multi-dimensional assessment of item sensitivity in order to assess and rank the sensitivity of offending and drug use items. Second, to explore the impact of recall period on respondents' perceptions of question sensitivity, we have experimentally compared questions with different time frames (i.e. lifetime, past-year, and past-month). Our results provided a ranking of sensitivity of offending and drug use questions. Furthermore, the experimental manipulation showed that questions about recent time frames were rated as more sensitive than questions covering a longer period of time. The present findings allow future methodological research on offending behavior to control for question sensitivity. Also, this study shows that recall periods impact respondents' perceptions of question sensitivity.

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The study of criminal and deviant behavior is heavily reliant on the self-report methodology (Gomes et al., 2018; Thornberry & Krohn, 2000). However, despite widely shared concerns about the validity of offending data provided by self-reported methods, experimental research trying to assess and improve the quality of self-reports of offending (SRO) is very scarce. Gomes et al. (2019), for example, systematically reviewed methodological experiments using SRO and found only three experiments that compared results obtained using face-to-face interviews and self-administered surveys. Contrary to the sensitive topics literature, these studies found no evidence that SRO are affected by self-administration. This led researchers to the conclusion that sensitivity is not an important factor in self-report methods and that the disclosure of one's own delinquent behavior is not particularly threatening (Hindelang et al., 1981). As a result, methodological research on how to ask questions about offending behavior decreased significantly (Jolliffe & Farrington, 2014).

Survey methodologists, on the other hand, have long shown how multiple factors (e.g. question wording, response format, etc.) affect respondents' answers (e.g. Schwarz, 1999), especially in regards to sensitive topics (e.g. Tourangeau et al., 2000). Unfortunately, survey methodologists only very rarely include offending items in their experiments. Offending is a socially undesirable behavior that may involve feelings of guilt, shame, and concern about incriminating consequences from self-reporting. Therefore, there is reason to consider the disclosure of offending behavior as a highly sensitive topic, which makes SRO subject to multiple types of measurement error. Therefore, in our

study, we have developed a measure of item sensitivity in order to estimate how sensitive are SRO and drug use. Furthermore, since offending questions are usually asked in reference to lifetime, past-year, and/or past-month prevalence, we have experimentally manipulated the recall period of each item in order to test the impact of time frame on participants' evaluations of item sensitivity.

Self-reports of sensitive questions

When responding to self-report questions about behavior, participants have to understand the question, remember, add, average, and/or combine the information in order to provide a valid response (Tourangeau et al., 2000). All these comprehension, memory, and response processes create multiple opportunities for measurement error (see, Schwarz, 1999). Adding to these generic self-report issues, researchers who are interested in studying sensitive topics have to deal with the fact that, when reporting undesirable behaviors, participants may tend to deliberately distort and edit their answers in order to avoid disclosing potentially embarrassing or incriminating information (Tourangeau & Yan, 2007).

Evidence supporting the motivated misreporting hypothesis is well established in the literature (see, Tourangeau & Yan, 2007). First, multiple research has shown how participants tend to systematically underreport socially undesirable behavior, such as food intake (e.g. Wehling & Lusher, 2019), drug use (e.g. Palamar et al., 2021), and many other sensitive topics (for a review see, Krumpal, 2013). Second, measurement procedures that increase respondents' motivation to report the truth (e.g. bogus pipeline), as well as procedures that reduce motivation to misreport (e.g. indirect measurement or self-administration), impact participants' reports of sensitive behavior but show little to no effects on less sensitive topics (Tourangeau & Yan, 2007).

For example, experiments on modes of administration show that participants tend to report a higher prevalence of sensitive behaviors (such as illegal drug use or risky sexual behavior) in self-administered conditions compared to face-to-face interviews, but show no mode effects on low sensitivity topics (e.g. questions on job satisfaction and personality scales; Gnambs & Kaspar, 2015; Richman et al., 1999). The benefits of self-administration are usually explained by the respondents' increased sense of privacy and confidentiality in self-administered settings, compared to personal interview conditions where respondents have to report their behavior to a third person. On the other hand, responses on non-sensitive information are less affected by self-administration because there is no motivation to conceal (Tourangeau et al., 2000). These findings suggest that mode of administration effects result from a motivated process of respondents' editing their answers in a socially desirable way, mostly when they report their answers to a third person.

Further, several studies noted that the benefits of self-administration in the reporting of sensitive behaviors tend to be larger for more recent time frames than for more distant ones (Tourangeau & McNealey, 2003; Tourangeau et al., 2000; Tourangeau & Yan, *in press*). For example, in the studies carried out by Turner et al. (1992) and by Schober et al. (1992), the benefits of self-administration in the respondents' disclosure of drug use (i.e. higher reports of drug use in self-administered conditions) are lowest for lifetime, higher for past-year, and highest for past-month prevalence. In light of the previous argument, these findings suggest that asking someone to report recent socially undesirable behaviors is a more sensitive question than asking someone to report the same behavior over a longer period of time. Respondents may feel less threatened or embarrassed to report sensitive behavior in the distant past, than disclosing these practices over a recent time frame. However, the impact of recent time frames on question sensitivity has not yet been demonstrated.

Definition of sensitive questions

Tourangeau and colleagues (Tourangeau et al., 2000; Tourangeau & Yan, 2007) described three aspects that make a sensitive topic (i.e. intrusiveness, threat of disclosure, and social desirability). Intrusiveness refers to questions on inappropriate, out-of-bounds (i.e. 'taboo') topics. In this

sense, the question itself is intrusive, and people may see it as an invasion of privacy, regardless of what the socially acceptable answer might be. Second, threat of disclosure refers to participants' concerns about the potential consequences of their answers being disclosed to a third party. Third, social desirability refers to the extent to which a question requires socially unacceptable or undesirable answers (Tourangeau & Yan, 2007). Some previous studies attempted to assess item sensitivity (e.g. Bradburn et al., 1979; Fortier et al., 2020; Holbrook et al., 2003; Sudman & Bradburn, 1974). However, these evaluations of topic sensitivity usually focus on only one aspect of sensitivity and lack an assessment of the main dimensions of topic sensitivity, namely, Intrusiveness, Threat of disclosure, and Social desirability (Tourangeau & Yan, 2007).

Present study

This study has two main objectives. First, we intend to assess and rank the question sensitivity of offending and drug use items. Although it might be assumed that questions on illegal behavior are sensitive, we do not know how sensitive these questions really are. Furthermore, we do not know which offending items are the most sensitive within an offending questionnaire. The present study will provide a ranking of the sensitivity of offending questions, which will allow future researchers to control for the effect of question sensitivity in their methodological studies with offending variables. Second, we aim to explore the impact of recall period on respondents' perceptions of question sensitivity. Survey questions on offending, similarly to other behavioral measures, are usually asked in reference to either lifetime, past-year, and/or past-month prevalence. However, we are unaware of any study that has explored the impact of recall periods on question sensitivity. Therefore, this study provides a contribution to the study of sensitive questions by testing this hypothesis.

Methods

Sample and study design

This study was conducted in Portugal with a sample of 269 university students. A total of 20 participants failed to complete the questionnaire and were removed. The final sample was composed of 249 university students (89.6% females, $n = 223$), mostly Portuguese nationals (90.8%, $n = 226$), aged between 17 and 51 years ($M = 22.74$, $SD = 6.60$). Participants were recruited both through institutional e-mailing and in exchange for class credit.

Mean comparisons showed no statistically significant sex differences in the reports of females and males on question sensitivity for the behavioral variables in the study (i.e. offending, contact with the police, and drug use), with the exception of the sexual behavior question in which females ($M = 4.07$, $SD = 1.38$) reported that this question was more sensitive than did male participants ($M = 3.32$, $SD = 1.48$) ($t_{(247)} = -2.60$, $p < .05$).

Measures

Sensitive behavioral items

Participants reported their evaluations of sensitivity for 23 behavior items; 15 items on offending, one item regarding past contacts with the police, six items referring to drug use, and one item on sexual behavior (i.e. sexual intercourse with someone) (see Table S1). These behavioral items were selected from the International Self-Report Delinquency 3 questionnaire (ISRD3; Enzmann et al., 2018; Martins et al., 2015), with the exception of tobacco, derbisol (a fictitious drug), and the sexual behavior item, which were added by our team.

Measures of question sensitivity

We have created three questions designed to assess the three dimensions of question sensitivity proposed by Tourangeau and Yan (2007). Regarding the first dimension, i.e. Intrusiveness, after each sensitive behavioral item participants were asked ‘Do you think this question is too personal?’ (from 1-‘Nothing personal at all’ to 7-‘Very personal’). Regarding Threat of disclosure, we asked ‘Imagine your answer is YES. Would you feel uncomfortable if other people [colleagues, parents, friends, etc.] could see your answer to this question?’ (from 1-‘Nothing uncomfortable at all’ to 7-‘Very uncomfortable’). Finally, for Social desirability, participants responded to ‘Do you think other people answer honestly and truthfully to this question?’ (from 1-‘Completely false’ to 7-‘Completely true’). Average sensitivity scores were computed for each behavioral item, so that higher values represented higher topic sensitivity.

Procedures

This study was carried out online using Qualtrics software during July and November of 2019. After completing a brief socio-demographic questionnaire, participants were invited to rate the sensitivity of selected behavioral items. Participants did not respond if they had themselves practiced any of these behaviors. Initial instructions indicated that they would be presented with behavioral items typically used in anonymous and confidential scientific studies and that we were only interested in their opinion regarding these items. The 23 behavioral items were presented in a random order in three blocks, each corresponding to one dimension of question sensitivity (Tourangeau & Yan, 2007), where respondents provided their sensitivity ratings for every behavioral item. Ethical approval was provided by the Institutional Review Board of the University of Minho.

Experimental design

We have manipulated the recall period for behavioral items. For every block, the recall period of the behavioral items was randomly selected. Behavioral items were presented either in a lifetime (e.g. ‘Have you ever in your life stolen a bicycle?’), past-year (e.g. ‘In the last 12 months, have you stolen a bicycle?’), or past-month (e.g. ‘In the last 30 days, have you stolen a bicycle?’) prevalence format.

Data analysis

Regarding our first objective, we used average scores to rank the behavioral items from the least to the most sensitive topics. We used one-way ANOVAs with Gabriel’s post-hoc test to explore the impact of recall periods on respondents’ assessments of behavioral items’ sensitivity. Statistical analyses were carried out using SPSS v27 software (IBM SPSS, Chicago, IL).

Results

Table S1 presents the results of respondents’ evaluations of sensitivity for each item, organized from the lowest to the highest sensitivity question. Within the offending items, Illegal downloading and Group fight were the least sensitive questions, while Robbery and Assault scored as the most sensitive offending questions. Within drug use questions, Alcohol and Tobacco ranked as the least sensitive items, while Ecstasy/LSD/amphetamines and Heroin/cocaine/crack scored as the most sensitive questions. Inter-dimensional comparisons show that behavioral items scored similarly throughout the three dimensions. With the exception of the question on sexual behavior that ranked as the most sensitive question in the Intrusiveness dimension and, at the same time, ranked as one of the least sensitive questions on Threat of disclosure and Social desirability dimensions.¹

Table 1. Mean comparisons of question sensitivity by recall period.

	Intrusiveness						$F_{(2)}$	p	η^2
	Lifetime ($n = 82$)		12-month ($n = 87$)		30-day ($n = 80$)				
	M	SD	M	SD	M	SD			
Offending (overall)	4.15 _a	1.51	4.14 _a	1.76	4.20 _a	1.73	0.03	.968	.00
Contact with the police	4.43 _a	1.85	4.48 _a	2.09	4.34 _a	2.06	0.11	.895	.00
Drug use (overall)	3.62 _a	1.33	3.72 _a	1.51	3.63 _a	1.44	0.13	.877	.00
Sexual behavior	5.04 _a	1.69	5.32 _a	1.94	5.11 _a	1.72	0.58	.561	.01
	Threat of disclosure						$F_{(2)}$	p	η^2
	Lifetime ($n = 85$)		12-month ($n = 83$)		30-day ($n = 81$)				
	M	SD	M	SD	M	SD			
Offending (overall)	5.42 _a	1.09	5.66 _{a,b}	1.08	5.79 _b	.75	3.03	.050	.02
Contact with the police	5.82 _a	1.67	6.24 _a	1.28	6.28 _a	1.05	2.91	.056	.02
Drug use (overall)	4.50 _a	1.22	4.97 _b	1.19	5.04 _b	1.21	4.99	.007	.04
Sexual behavior	3.53 _a	2.11	4.22 _{a,b}	2.11	4.77 _b	2.19	6.97	.001	.05
	Social desirability						$F_{(2)}$	p	η^2
	Lifetime ($n = 83$)		12-month ($n = 82$)		30-day ($n = 84$)				
	M	SD	M	SD	M	SD			
Offending (overall)	3.90 _a	1.07	4.69 _b	1.08	4.76 _b	1.09	16.22	<.001	.12
Contact with the police	4.05 _a	1.53	4.59 _{a,b}	1.58	5.01 _b	1.44	8.48	<.001	.06
Drug use (overall)	3.38 _a	1.08	3.85 _b	1.18	3.96 _b	1.10	6.47	.002	.05
Sexual behavior	2.37 _a	1.51	2.61 _{a,b}	1.52	2.96 _b	1.49	3.25	.041	.03

Note. Each subscript letter denotes a subset of behavioral categories which illustrate the results of the post-hoc analysis; different letters represent statistically significant differences between columns.

Recall periods

Results regarding the impact of recall periods on question sensitivity are described in Table 1. The effect of the manipulation of time periods on Intrusiveness was not significant. As for the two remaining dimensions of sensitivity (i.e. Threat of disclosure and Social desirability), findings for overall offending, drug use, and sexual behavior, as well as contact with the police in the Social desirability dimension, showed that respondents rated recent time frames (i.e. 12-month or 30-day periods) as statistically more sensitive than the same questions regarding lifetime prevalence. Figure 1 illustrates the results of the impact of time frame on the respondents' ratings of question sensitivity for the offending items.

Discussion

This is the only experimental study that we are aware of that explores the impact of recall periods on question sensitivity. In doing so, we have developed an assessment of topic sensitivity, which allowed, first, an evaluation and rank of the sensitivity of offending and drug use behavioral questions. Second, we tested the impact of time frames within behavioral questions on the respondents' perceptions of question sensitivity.

Our findings provide an evaluation of topic sensitivity for offending and drug use questions that allows future methodological research to control for the effect of question sensitivity. Furthermore, except for Intrusiveness, in the other two dimensions (i.e. Threat of disclosure and Social desirability), offending items scored higher on sensitivity than sexual behavior, which is a topic that is often referred to as highly sensitive. This finding is consistent with our initial expectation that some questions on offending behavior are perceived as highly sensitive. By contradicting the main

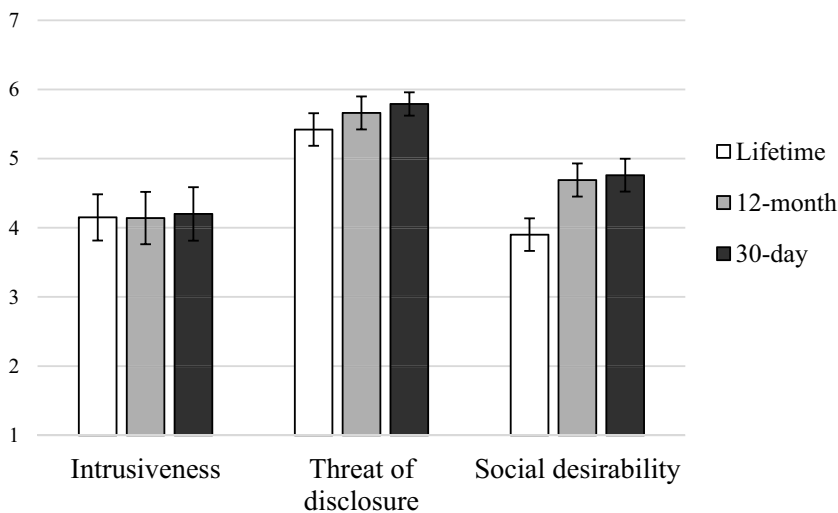


Figure 1. Average scores of sensitivity for offending items by recall period (Error bars are 95 percent confidence intervals).

conclusion of Hindelang et al. (1981) that self-disclosure of offending behavior poses no threat to respondents, the present results establish SRO as a highly sensitive topic. As a consequence, researchers using self-reports to assess offending behavior should strongly consider the knowledge developed within the field of sensitive questions, as well as replicate and further explore these effects within methodological experiments using SRO.

On a different aspect, offending and drug use questions behaved very similarly throughout the three dimensions. In other words, items scoring as high sensitivity in one dimension also scored high in the remaining dimensions, and vice-versa. However, the item about sexual behavior showed a different trajectory. The sexual behavior item was ranked as the most sensitive question in Intrusiveness, but ranked as one of the less sensitive questions in the dimensions of Threat of disclosure and Social desirability, slightly above the smoking tobacco question. These findings suggest that the same question might be perceived as highly sensitive on one dimension but have low sensitivity on a different dimension. We do not know which aspects of topic sensitivity have more effect on the quality of participants' reports and more research on topic sensitivity is needed.

Regarding the manipulation of recall periods, findings showed that asking questions about sensitive behavior over longer periods of time are generally regarded as less sensitive than asking the same questions for more recent time frames. In both dimensions of Threat of disclosure and Social desirability, respondents consistently reported that recent time frames (i.e. past-year and/or past-month) were more sensitive than asking the same questions regarding lifetime prevalence of behavior. It is possible that respondents feel less threatened in disclosing sensitive behavior that might have happened in the distant past. Conversely, respondents might feel shame or fear potentially incriminating consequences of reporting recent illegal behavior.

These results are consistent with previous methodological experiments that found higher benefits of self-administration for recent time frames than for more distant ones (e.g. Schober et al., 1992; Turner et al., 1992). These findings consistently show that item sensitivity increases with recency of the behavior, and survey researchers should take that into account when asking sensitive questions. Bradburn et al. (2004), for example, suggest that, since questions about current behavior are more threatening, questionnaires about socially undesirable behavior should start with lifetime questions, rather than starting with questions about current behavior.

On the other hand, the dimension of Intrusiveness was not significantly affected by recall periods. In other words, respondents described questions about recent offending and drug use as intrusive as questions about offending and drug use over the lifetime. These results might be understood under the definition of Intrusiveness, where the topic of the question itself is sensitive, regardless of the circumstances and whether the respondent has or not practiced the behavior referred to in the question (Tourangeau et al., 2000). Therefore, respondents might feel that questions on sensitive topics are none of the researcher's business independently of the time frame.

In conclusion, the present study shows that question sensitivity is affected by recall periods. Questions about recent behavior are perceived by respondents as more sensitive than questions about behavior that might have happened over a longer period of time. Considering that question sensitivity affects the quality of participants' reports (Tourangeau & Yan, 2007), behavioral reports over recent time frames may be subject to increased measurement error, such as deliberate misreporting. However, there is no evidence regarding the extent to which respondents' willingness to disclose sensitive behavior is affected by recall periods. Further research is needed to better understand how recall periods affect the quality of self-reports and to provide information about the guidelines for best practices in asking sensitive questions.

Note

1. In a pilot study with students from an American university, we replicated this study and found results very similar to those reported here. See Table S2 in the supplemental online material.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Marvin D. Krohn is an Emeritus Professor in the Department of Sociology and Criminology & Law at the University of Florida. He is primarily interested in developmental and life course approaches to the explanation of delinquency, drug use and crime. He served as a Co-Principal Investigator on the Rochester Youth Development Study and was a co-author of the *Gangs and Delinquency in Developmental Perspective*, the winner of the ASC's 2003 Most Outstanding Contribution to Criminology Award. He is a Fellow of the American Society of Criminology.

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