Deception in everyday life of Japanese young adults: a reanalysis

Jun'ichiro Murai¹ · Yasuhiro Daiku²

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Abstract

Very little research has focused on the subject of lying in everyday life, despite the benefits such study would provide. In this paper, we reanalyze the data from Murai's work in 2000, which examined the telling of lies and the perception of being lied to in daily life by using a diary method in which participants recorded events in a diary for a certain period of time as directed by the researcher. Our reanalysis led us to three key findings. First, we found one prolific liar in the data. This is relevant because previous deception studies have only discussed the existence of "a few prolific liars" in Asia through one-shot surveys, whereas we confirm it through the reanalysis of the data collected by the diary method. Second, we did not find any significant rank correlation between the number of lies told and the number of perceptions of lies, nor was there evidence of any "prolific lie perceivers". Third, we found that the mean percentage of the subjective accuracy of recording was roughly 80%, which demonstrates the accuracy of the diary method. In this paper, we report our findings, discuss the limitations (in particular, the small sample size), and mention future research directions using the diary method in deception studies.

Keywords Lying · Suspicion · Diary method · Secondary analysis · A few prolific liars

1 Introduction

It is a fact that people lie and are lied to every day over the course of their lives. DePaulo et al. [1] conducted a study using a diary method and found that university students tell an average of two lies per day. Murai [2] collected data in Japan using the same methodology and obtained similar results. He also examined the perception of being lied to and concluded that people perceived they were being lied to less frequently than they lied themselves. Although the sample size of that study was small, we feel that new insights can be obtained by reanalyzing his data from the following three perspectives.

First, in the 20 years between the time of the original data collection and now, several studies have pointed out the existence of "a few prolific liars" [3–7]. Since Murai's dataset [2] is a valuable one collected in everyday life by the diary method, it is worth revisiting to examine whether or not "a few prolific liars" exist in Asia. Although a couple of studies have examined this concept before [6, 7], both were based upon the one-shot survey method. We feel that stronger evidence of "a few prolific liars" can be confirmed by the diary method.

Second, the relationship between telling lies and the perception of being lied to should be clarified by correlation analysis. One prior study has suggested that lying and the perception of being lied to are associated with each other [8],

✉ Jun'ichiro Murai, murai@bgu.ac.jp; Yasuhiro Daiku, mail@yasuhirodaiku.com | ¹Faculty of Human Studies, Bunkyo Gakuin University, 1196 Kamekubo, Fujimino-shi, Saitama 356-8533, Japan. ²Graduate School of Human Sciences, Osaka University, 1-2 Yamadaoka, Suita-shi, Osaka 565-0871, Japan.

but no research has examined such a relationship on the basis of the diary method. Doing so will help us to determine whether prolific liars are more likely to notice other people's lies. In other words, our objective is to investigate whether "a few prolific liars" could also be "a few prolific lie perceivers".

Third, we analyzed participants' subjective ratings of the reporting accuracy collected in the original study to investigate the accuracy of the diary method itself. It is important to inspect what percentage of the total communications were reported because there is inevitably a bias of underreporting in self-report methods. Although the diary method is considered less susceptible to underreporting bias [4], no deception studies have adequately investigated this. The issue here is that some participants might report only some instances of lying due to the inconvenience of having to write everything down in a diary, or as a motive for self-presentation.

2 Method

We reanalyzed Murai's original data [2], in which 24 students (12 men and 12 women) between the ages of 18 and 25 ($M = 21.0$) were asked to record the lies they told for a week using a paper and pencil. The procedure was identical to that in DePaulo et al.'s work [1] except that Murai [2] also asked participants to record their perception of being lied to and to report subjective ratings of the recording accuracy (i.e., "What percentage of your total communications do you think you were able to record?") after the one-week recording period had finished. For reference, the flow of Murai's data collection process [2] is shown in Fig. 1.

3 Results

Murai [2] collected data in Japan using the same methodology as DePaulo et al. [1] and obtained similar results. Although Murai [2] reported the results separately for men and women, we show them without separating men and women in Table 1.

With reference to Serota et al.'s work [4], we define a prolific liar as someone who tells six or more lies in a day. Looking at the scatterplot in Fig. 2, we can see there is a female participant in the lower-right corner who told 44 lies in one week (6.29 lies / day), which accounts for 14.8% of the total 297 lies. This confirms that "a few prolific liars" exist. DePaulo et al. [1] had a similar finding, with a participant who told 46 lies in one week.

On the other hand, looking at the vertical axis of Fig. 2, there were no participants who could be considered "prolific lie perceivers". Since there is one prolific liar (i.e., an outlier) in the data, we used Spearman's rank correlation instead of Pearson's correlation and found there was no significant correlation between the number of lies told and the perception of being lied to.

The results in Table 1 show that the mean percentage of the subjective accuracy of recording was roughly 80%. Although the ratings are subjective, this result seems to demonstrate the accuracy of the diary method. A higher value would certainly be preferable, but at present it is accurate enough to withstand analysis.

Fig. 1 Process flow of Murai's original data collection

Table 1 Sample of results from Murai (2000) and results obtained by reanalysis

Results from Murai (2000)			
Number of lies told per day	M = 1.77	SD = 1.46	
Number of perceptions of being lied to per day	M = 0.36	SD = 0.42	
Number of lies told per social interaction	M = 0.34	SD = 0.25	
Number of perceptions of being lied to per social interaction	M = 0.07	SD = 0.08	
Reanalysis of Murai's data (2000)			
Subjective accuracy of recording on telling lies	M = 78.8%	SD = 18.2%	
Subjective accuracy of recording on perception of being lied to	M = 79.8%	SD = 23.2%	
Subjective accuracy of recording on social interaction	M = 82.9%	SD = 11.4%	
Spearman's rank correlation between number of lies told per day and number of perceptions of being lied to per day	$r_s = .367$	$p = .078$	

Fig. 2 Scatterplot of relationship between the number of lies told per day and the number of perceptions of being lied to per day (both men and women included)

4 Discussion

We reanalyzed Murai's data [2] to investigate the three points raised in the Introduction. First, regarding "a few prolific liars", we found one prolific liar in the data. The highest number of lies told in this study was almost the same as that reported by DePaulo et al. [1]. It is worth noting that this result was reproduced in Asia by the diary method, which confirms the presence of "a few prolific liars" across cultures.

Second, we did not find a significant rank correlation between the number of lies and the number of perceptions of lies, nor any "prolific lie perceivers". We presume that people who detect a lot of lies in their daily lives may be only those in special professions. Moreover, the fact that the number of lies was higher than the number of perceptions of lies suggests that most of the lies were missed because of the Truth-Default [9]. In addition, although the correlation coefficient obtained in this study was not significant, this might be due to the low statistical power. Future studies with a larger sample size would probably reveal a relationship between the number of lies and the number of perceptions of lies more precisely.

Third, we confirmed the accuracy of the diary method. Although recording lies for a week may have been an overload on the participants, the relatively high accuracy indicates that most of the lies were reported. However, it will be necessary to improve the quality of the data in future studies: for example, by shortening the period of time the diary must be carried (e.g., [10]). Another approach would be to use a smartphone app for the recording, but in this case, there is a risk of accidentally performing other operations. For example, if a participant starts surfing the Internet in the middle of recording, the accuracy of the recording would be diminished. We should also point out that the number of lies reported tends to be lower in diary methods than in one-shot surveys because the former demand more time and effort from the participants. We thus need to consider these differences in research methods when discussing "a few prolific liars".

5 Limitations and directions for future research

There are a few limitations in this study. First, Murai's data [2] consists of a very small sample size, which inevitably leads to less stable values of the correlation coefficient and testing with extremely low statistical power. Moreover, sample sizes that are too small may not represent the population accurately. In the future, it would be beneficial to apply the same research method to a larger sample size so as to obtain a more stable correlation coefficient and more generalizable results.

Moreover, as Murai [2] conducted his study 20 years ago, he adopted the slightly old-fashioned method of asking participants to physically write down their communications and lies. Although we confirmed that the participants reported approximately 80% of all their communications, we need to devise a method to collect more accurate data on deception in daily life. Thanks to the development of new technologies (e.g., [11]), we now have more options for collecting data by diary methods, such as by using smartphones. Adopting such methods will enable us to take advantage of the strengths of both one-shot surveys (e.g., large sample size) and the diary method (e.g., ecological validity). However, we also need to be aware of some of the risks associated with the use of smartphones, as discussed above.

Despite these limitations, we feel we have gained valuable insights by reanalyzing Murai's data from 20 years ago, which will make a significant contribution to the deception research ongoing today. Future research on deception will need to focus more and more on everyday life while simultaneously advancing the experimental research approaches.

Authors' contributions JM analyzed the data and wrote the paper. YD checked the draft and analyzed the data. Both authors read and approved the final manuscript.

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Data availability The dataset analyzed during the current study is available from the corresponding author upon reasonable request.

Code availability Not applicable.

Declarations

Ethics approval and consent to participate In the original study, all participants provided their informed consent and the study was conducted according to the ethical guidelines of Japan.

Competing interests The authors declare that they have no competing interests.

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