Teenagers Lie a Lot: A Further Investigation into the Prevalence of Lying

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Teenagers Lie a Lot: A Further Investigation into the Prevalence of Lying

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Although it is commonly believed that lying is ubiquitous, recent findings show large, individual differences in lying, and that the proclivity to lie varies by age. This research surveyed 58 high school students, who were asked how often they had lied in the past 24 hr. It was predicted that high school students would report lying with greater frequency than previous surveys with college student and adult samples, but that the distribution of reported lies by high school students would exhibit a strongly and positively skewed distribution similar to that observed with college student and adult samples. The data were consistent with both predictions. High school students in the sample reported telling, on average, 4.1 lies in the past 24 hr—a rate that is 75% higher than that reported by college students and 150% higher than that reported by a nationwide sample of adults. The data were also skewed, replicating the “few prolific liar” effect previously documented in college student and adult samples.

Keywords: Deception; Lying; Prevalence Of Lies; Teenagers

Despite the large literature on lying and deceptive communication, relatively little research has sought to answer the question of how often people lie. Instead, most deception research takes questions of prevalence for granted, presuming that deception is commonplace and ubiquitous.
This presumption of ubiquity is problematic for at least two reasons. First, good science requires a rich descriptive understanding of the phenomenon under study as a prerequisite to sound theory building and experimental work (Rosin, 2001). Clearly, knowledge of prevalence would be part of such a necessary descriptive understanding. A lack of such knowledge suggests a shaky foundation on which to build. Second, the presumption of ubiquity may simply lack correspondence with existing data. Recent research on the prevalence of deception (Serota, Levine, & Boster, 2010; Serota, Levine, & Burns, 2012) suggests (a) large individual differences in how often people lie, (b) that most people do not lie with great frequency, (c) that the distribution of lying is not normally distributed across the population, rendering the arithmetic mean number of lies misleading, and (d) that the prevalence of lying varies over the lifespan of humans, making college student samples non-representative of other age groups. What the existing data suggest is that most lies are told by a “few prolific liars” and that prevalence declines with age (Serota et al., 2010).

This research seeks to answer two related questions. First, previous research reports a negative association between age and the prevalence of lying (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Serota et al., 2010; Serota et al., 2012). College students lie with greater frequency than adults and younger adults lie more than older adults. This research questions if that trend extends backward with even greater frequency among high school students. Second, previous research reports large and nonnormally distributed individual differences in the prevalence of lying. This research investigates the distribution of lying among a sample of teenagers. In short, this research tests the hypotheses that teenagers lie with greater frequency than college students or older adults, but that the presence of a distribution dominated by a few prolific liars holds across age groups.

Previous Research on Lie Prevalence

Most research on deception prevalence has used one of two methodological strategies: experiments or self-report. Experimental work puts people in situations where lies might be prompted and observes the proportion of people who lie. The limitation in such research is that the results are context bound. The alternative is self-report, either through diaries or survey methods. The limitation is that self-report work may result in underreporting stemming from social desirability bias.

As an example of experimental research, Levine, Kim, and Hamel (2010) put participants in situations where they either did or did not have a motive to lie. They found that lacking motive, virtually all participants were honest. However, in various deception motive conditions, approximately two-thirds of participants lied. Feldman, Forrest, and Happ (2002) had participants interact with a stranger. They found that more than 60% of participants lied in a 10-min interaction, and that lies were more frequent for participants who were instructed to make a positive impression than those in a control condition. Furthermore, a reanalysis by Serota et al. (2010) of the Feldman et al. findings found that across 121 participants, 26% of the participants accounted for 72% of the lies, whereas 49 participants told no lies at all. Together, experimental research on deception prevalence suggests that there are situations...
which reliably prompt deception, but not everyone lies, even in situations where there is reason to lie.

More widely known and often cited is the self-report work on deception prevalence. Of that body of work, a diary study by DePaulo et al. (1996) has been the most influential. DePaulo et al. found that, on average, college students reported telling two lies per day, and non-student adults reported one lie per day. Replications by George and Robb (2008) and Hancock, Thom-Santelli, and Ritchie (2004) yielded estimates for college students ranging from 0.6 to 1.6 lies per day.

Most recently, Serota et al. (2010) conducted a survey with a representative sample of 1,000 adults in the United States. They replicated the DePaulo et al. (1996) finding that, on average, people 18 and older tell between one and two lies per day average, but also found that the distribution was radically skewed, thus rendering the mean misleading. Sixty percent of adults reported telling no lies in the past 24 hr, and 50% of all reported lies were told by just 5% of the sample. Serota et al. (2010) obtained and reanalyzed the student datasets from DePaulo et al. and George and Robb (2008) and found similarly skewed distributions. Finally, in a third study, Serota et al. (2010) reported college student data, finding that students reported more lies than the representative adult sample, but that the positive skewed distribution was again evident. Studies by Cole (2001), Ennis, Vrij, and Chance (2008), and Horan and Booth-Butterfield (2011), which measured both age and lying frequency, indicated that various individual differences may alter the rate of lying but, consistent with Serota et al. (2010) and Serota et al. (2012), incidences of lying by young adults are generally high.

Research Focus and Hypotheses

Although research on the prevalence of lying is scarce relative to research on topics such as deception detection, previous research provides a coherent picture of deception prevalence in American adult and college student populations. Most striking are the individual differences. For most people, lying is an infrequent activity. But, there are a few prolific liars. The result is that the distribution of the frequency of lying among liars is positively skewed, and can be modeled as a power function that holds across college student and adult samples and across survey, diary, and experimental methods (Serota et al., 2010). When including non-liars, the model can be further refined using a combination of Poisson and power distributions to separate everyday and prolific liars (Serota et al., 2012).

Further, age appears to be a reliable predictor of frequency of lying. Older people appear to lie less often than their younger counterparts. The age effect showed up reliably in the difference between student and adult samples in both the DePaulo et al. (1996) and Serota et al. (2010) studies, and age was a significant predictor of the rate of lying in Serota et al.’s nationwide adult sample ($\beta = -0.18$).

What is undocumented is if general trends of the nonnormal distribution and increasing prevalence with younger samples extend to adolescent populations. Nevertheless, we expect this trend will hold. There are good reasons to believe that
high school students will lie more frequently than college students. One reason is simply moral development. Lying is generally socially disapproved and is a morally questionable act (Bok, 1999). Foundational research by developmental psychologists such as Piaget and Kohlberg indicates that morality develops with age (Crain, 1985; Piaget, 1932). Therefore, one might expect younger people to lie more. For example, Jensen, Arnett, Feldman, and Cauffman (2002) found that college students rated academic dishonesty as less acceptable than did high school students. A similar finding might be expected for lying.

Adolescence is also a time when individuals seek to establish autonomy from parents, and lying to parents may be a means to covertly establish such autonomy (Jensen, Arnett, Feldman, & Cauffman, 2004). Jensen et al. (2004) found that high school students lie to parents more often than college students. Therefore, there are good reasons, and some supportive empirical data, to suggest that high school students might lie more than older people.

Although it is expected that mean levels of lying will be statistically higher for this sample of high school students than for previous samples of college students or non-student adults, it is also expected that the skewed distribution observed in previous studies will be evident in data from younger participants. Serota et al. (2010) showed that the power function for the distribution of lies was robust across previous datasets. We expect the findings regarding the shape of the distribution to replicate because positive skew is typical in a variety of socially undesirable behaviors, not just deception (Serota et al., 2010).

To summarize, these research predictions can be described with two hypotheses:

**H1**: The average number of lies per day observed in a sample of high school students will be higher than that observed in previous studies sampling college students and adults.

**H2**: The distribution of the number of lies told by high school students will not be normally distributed around the mean. Instead, the distribution of liars will (a) have a strong positive skew and (b) fit a power function similar to those described by Serota et al. (2010).

**Method**

**Participants**

The data were collected in class from 58 high school students at a suburban New York high school. The sample was evenly split between males and females. Participants’ ages ranged from 14 to 17 years old (M = 15.45, SD = 0.81), with a slight majority of the sample being 15 years of age. All the students were enrolled in a class where students gained college credit for conducting university professor-mentored science projects, and the data were collect as part of one such project. The data collection was institutional review board approved at both the high school and the supervising professor’s university. Demographic data were collected separately from the lie prevalence data to maintain anonymity.
**Measurement**

The instructions and survey question format was identical to that used in previous research (Serota et al., 2010) except that the survey was done with paper and pencil, rather than online. Participants were told that the research was about lies in everyday communication, and they were provided with a definition of lying. Lying was defined as intentionally misleading another person. It was explained that lies can be big or small, that lies can be completely false statements or subtle omissions, and that lies can be told for a variety of reasons. Participants were asked how many times they had lied in the past 24 hr, and were provided with a grid to complete. The grid crossed the face-to-face or mediated (writing, phone, Internet, etc.) message format with the target of the lie (family, friends, coworkers, acquaintances, and strangers). Participants were asked to write in how many lies they had told in each of the 10 categories, and to write in a “zero” if no lies of a particular type were told.

**Results**

The high school students in this sample reported, on average, telling $M = 4.1$ lies in the past 24 hr ($SD = 3.62$, $Mdn = 3.0$, mode = 2.0, minimum = 0.0, maximum = 17.0, and 95% confidence interval $[CI] = 3.15–5.06$ lies per day). The mean was statistically greater than the means reported by Serota et al. (2010) for college students ($M = 2.34$, $SD = 2.94$; $N = 225$), $t(281) = 3.86$, $p < .01$; and adults ($M = 1.65$, $SD = 4.45$; $N = 998$), $t(1,054) = 4.11$, $p < .01$. Thus, the data were consistent with $H1$. Means and 95% CIs for the three groups are visually depicted in Figure 1.

The data were substantially positively skewed ($skew = +1.88$, standard error of skew = 0.31) and Kolmogorov–Smirnov and Shapiro–Wilk tests for normality showed statistically significant and substantial deviation from normality at $p < .0001$, as did the visual examination of Quantile–Quantile plots. Curve fitting found that a power function ($y = 4.3316 \cdot x^{1.4647}$) fit the distribution. Positive skews and significant deviations from normality were also evident for face-to-face lies, mediated lies, and lies told to all targets. In all, the top 10% of liars accounted for 33% of the lies and 50% of the reported lies were told by 29% of the sample. Thus, the data were consistent with $H2$, which predicted nonnormally distributed results. A plot of this curve and a comparison with curve fitting of the Serota et al. (2010) adult and college student samples are provided in Figure 2.

The participants reported telling more face-to-face lies ($M = 2.66$) than mediated lies ($M = 1.45$), $t(57) = 3.55$, $p < .001$. There was a nonsignificant trend toward telling more lies to friends ($M = 2.03$) than family members ($M = 1.41$), $t(57) = 1.84$, $p = .07$ (two-tailed). By far, more lies were told to friends and family than to other potential targets such as acquaintances or strangers (all $ts > 5.0$, $p < .001$).

**Addition Data on Teenage Liars**

As a check on the validity of the results reported in this study, the authors compared teenager and adult results from the U.K. data analyzed by Serota et al. (2012). That
Figure 1  Comparison of Results With Serota, Levine, and Boster (2010) findings for college students and adults. Note. CI = confidence interval.

Figure 2  Similar Power Functions Observed in the Data and Serota, Levine, and Boster (2010). Note. Intercept values are inversely related to the means. The similarity of the slope values indicates that the distribution of behaviors is similar across samples.
study only reports results for adults (18 years and older) but the survey, which was conducted for the London Science Museum, obtained the same data from participants aged 16 and 17 years (cf. Serota et al., 2012, for a complete description of the methodology and data weighting).

Participants 16 to 17 years old reported telling $M = 3.82$ lies per day ($SD = 3.73$; unweighted $n = 122$), whereas those 18 years and older reported $M = 2.08$ lies per day ($SD = 3.57$; unweighted $n = 2,981$). The teenage sample reports telling significant more lies than adults, $t(3,006) = 2.57, p = .01$.

Discussion

This research investigated the prevalence of lying among a sample of high school students. It was predicted that (a) high school students lie more often than college students or adults, but (b) the nonnormal, positive skew observed in college student and adult lie prevalence data would also be observed in the distribution of high school student lies. The data were consistent with both hypotheses.

Relatively speaking, high school students lie a lot. On average, the high school students in this sample reported telling 4.10 lies in the past 24 hr. Previous research with an identical question format found means of 2.34 and 1.65 lies per day for college students and adults, respectively. These means reflect 75% and 150% increases over previously reported means, respectively. A comparison with similar data from the United Kingdom provides convergent validity; U.K. teens reported telling 84% more lies than U.K. adults.

The few prolific liar pattern was also observed in the distribution of these high school student lies. The positive skew was six times the standard error, and a power function curve fitted the data. As with other lie prevalence datasets, most participants reported lie frequency below the mean (71% in these data), and most lies were told by a relative few high-frequency liars.

As previously observed, the existence of the strong positive skew renders the mean misleading. In the Serota et al. (2010) adult nation sample, although the average was 1.65 lies per day, 60% of the sample reported no lies at all. The mode was also zero in the Serota et al. (2010) college student data. Although the college student mean was 2.34 lies per day, 29% of the students reported telling no lies in the past 24 hr. In these high school data, only 3 of 58 participants (5%) reported telling no lies at all. The mode (26% of the sample) was two lies per day, and 52% of the sample reported telling one to three lies. Clearly, the mean does not reflect the average participant. However, whereas most adults report no lies in the past 24 hr, most teenagers do report a few lies, albeit fewer than suggested by the mean.

Interesting questions raised by these findings include why high school students report lying more than college students and adults and why the prevalence of deception is nonnormally distributed. It is suspected that there is more than one answer to the first question. As speculated previously, part of the answer likely involves cognitive, emotional, and moral maturity. Because lying is socially disapproved, there are long-term social sanctions for becoming known as a liar. Younger people may more
often opt for the short-term advantage that can be gained through deception, whereas older people may see the long-term benefits of avoiding socially disapproved behavior.

It was also speculated that adolescents lie to parents as a means of establishing autonomy. Some evidence consistent with this speculation was obtained. Students reported telling an average of 1.41 lies per day to family members (34% of their total lies). Presumably, many of those lies were told to parents. However, lies to parents are insufficient to explain teenage lying because teens also lied frequently to friends (2.03 lies per day; 50% of their total lies). Notably, teenagers reported telling more lies to people they know than to strangers. This is in direct opposition to the Ennis et al. (2008) study of individual differences, which found that adult students, 18 to 44 years ($M = 23.1$ years), told more lies to strangers. This is fertile ground for future exploration, but the teenagers’ greater tendency to test credulity with friends and family is consistent with developmental psychologists’ views on moral growth and learning.

Also in need of explanation is the robust observation of nonnormally distributed individual differences. At a macrolevel, lying must be infrequent otherwise it would not be effective in achieving deception, and if it were ineffective, there would be little point in lying. If everyone lied about everything, it would make no sense to believe others, and people would not be fooled. So, for lying to function, most people must believe others and that belief must be functional. This provides the few prolific liars with dupes to fool, but precludes lying from becoming ubiquitous. If lying were the rule, rather than the exception, then little would be gained from either lying or honest communication because little trust in others’ words would be warranted.

Lie prevalence data has important implications for deception detection experiments. Deception detection experiments report that people are only slightly better than chance at correctly distinguishing truths from lies (Bond & DePaulo, 2006). However, in most experiments leading to this conclusion, (a) participants judge an equal number of truths and lies, (b) participants are truth-biased and guess truth more often than lie, and (c) accuracy is calculated as an average across truths and lies (Levine, Park, & McCornack, 1999). As a consequence, the truth–lie base rate makes a critical difference (Levine, Kim, Park, & Hughes, 2006). If most people lie infrequently and if most people tend to believe others most of the time, then detection accuracy outside the lab will be underestimated by deception detection experiments that present equal proportions of truths and lies.

As with all self-report data on sensitive topics, concern exists with the accuracy of reporting. Presumably, the anonymity of the data collection helps in obtaining accurate responses as does the carefully created instructions (for a more detailed description and discussion, see Serota et al., 2010). Nevertheless, these levels of reported lies may be underestimates. It is unlikely, however, that social desirability biases explain the key findings that (a) younger people lie more often than older people, and (b) lying is nonnormally distributed in the population.

Social desirability may affect responses on surveys, but it also affects behavior. If older people find lying less socially desirable than teenagers, then they will report fewer lies, but they are also likely, in actuality, to tell fewer lies.
In conclusion, teenagers lie a lot (relative to college students and old adults). However, a few teens lie a lot more than most teens. These results provide initial evidence that the negative correlation between deception prevalence and age extends backward to high school students. The finding that most lies are told by a few prolific liars is as evident among high school students as it is among college students and adults.

Note

[1] To fit a power function, it is necessary to exclude those participants who told no lies, as a power curve requires all positive values of x. Therefore, the prevalence curves are plotted for liars only. In this research, there are a small number of high school students who reported telling one lie; relative to the mean of 4.1 lies, this is nearly the equivalent of telling no lies at all. To improve the goodness of fit, those telling one lie were treated as non-liars. For the reported power function, $r^2 = .900$, indicating a strong fit. More important, if those who told one lie are included, the data still show a pattern, with the majority of lies being told by a few prolific liars; however, the goodness of fit is weaker, $r^2 = .426$.

References


