


## Article

# The Acceptability of Lying and Its Relationship with Other Personality Constructs among a Sample of Adults

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**Abstract:** Lying is seemingly common in daily life, but it is scarcely researched despite its possible relevance to understanding a range of pathological behaviors and associated deception. Our aim was to investigate whether the acceptability of lying might indicate other personality constructs by analyzing a variety of questionnaire responses collected from a cross-sectional sample ( $n = 138$ ). Total scores for lying acceptability were moderately associated with Machiavellianism and with functional impairment due to lying at work, in social settings, and at home. Scores for these tests were not closely associated with problematic usage of the internet, self-esteem, or religious activity/religiosity. Three distinct groupings produced by a multidimensional scale informed us of how lying might be better understood as an explanatory mechanism for compulsive behaviors. We also noted possible avenues for future research into the acceptability of lying and deception.

**Keywords:** college students; lying; deception; psychometric tests; multidimensional scale



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## 1. Introduction

Lying is seemingly a common behavior among people of all ages [1,2]. Although research has attempted to understand why people lie [2–5], the reasons proffered by people for lying are diverse. Some lie to improve their self-image to others, to escape negative repercussions, or to manipulate and control various situations. Some people lie to accomplish social and personal goals, to show altruism towards others or because they feel that lying is out of their control [4–11]. Addiction can lead individuals to lie [12,13] and lying to others is listed amongst the potential diagnostic criteria for gambling disorder within the DSM-5. Lying to conceal the extent of involvement with gambling is stipulated as an indicator of persistent and recurrent problematic gambling behavior [14].

Lying can refer to isolated events but it can also encompass repeated events that become part of a person's regular evaluation and attitude and an indication of a predisposition towards behaviors that are detrimental towards relationships [9]. Lying can be underpinned by polite motives or mixed-motives (e.g., to express delight with a gift out of politeness even though it is not to the taste of the recipient); these types of pro-social lies have been referred to as “white lies” [15]. However, lying is generally considered to be self-interested and deceiving [16]. It was mainly the latter (anti-social) connotation of lying that was considered in this study, but it should be noted that sometimes lying and its acceptability can be underpinned by moral and pro-social intentions [16,17].

If lying is commonplace, people might be less bothered by their own lying than others. Where lying begins during childhood, it can eventually come to be regarded as acceptable by the child and a frequent occurrence within interpersonal interactions [15]. Research demonstrates that if a person does not believe their lie was important, then this does not bother them [18]. Throughout history, religiousness has been associated with discipline and virtuousness and opposed to vice [19]. The acceptability of lying has been negatively

correlated with religiosity [9] and greater religiosity in individuals has been associated with greater disapproval of lying in one's own interest [20].

Machiavellianism is a term nascent within the renaissance literature of Niccolò Machiavelli. In his writings about *The Prince* [*Il Principe*], Machiavelli described ways for the prince or people seeking to become leaders, to take advantage of- and to rule over- others by whatever means they see fit; in essence, the ends can justify the means [21]. Someone who is Machiavellian is generally perceived as strategic, manipulative or deceitful. They might pursue self-desires at the expense of anyone or anything else.

More recently within Psychiatry, Machiavellianism has been found to be positively correlated with increased tendency to lie [10,22,23], to view others cynically as a justification for their own lies and deception [23], and to reap desired rewards/outcomes through manipulation and tactics of persuasion [23]. People who are Machiavellian may pursue their own sexual desires without consideration of the desires of their partner and they may tell blatant lies to hide infidelity [24]. A study of 282 adults found that Machiavellianism predicted sexual deception; this included blatant lying to engage in sexual activity; self-serving lying to obtain specific resources and lying to avoid confrontation [24].

Machiavellianism has been linked to deception within sexual relationships, for instance in relation to sincerity and sexual intentions [22], but self-esteem has not [25]. In an adult study sample, 16–32% of participants ( $n = 272$ ) reported that they would always be completely honest within different internet contexts inclusive of social media, online dating, chat rooms, and sexual websites [26], but these same participants expected that only 0–2% people would be completely honest within these online spaces [26]. This is noteworthy given that being able to assume the honesty of others is a critical underpinning of a well-functioning society [27]. Beyond social networking and internet use, experimental research into organizational behavior found that selfishness and deception in group settings makes people reluctant to share information and to work together [17].

The internet can lead to a manifestation of behavioral addictions such as compulsive sexual behavior disorder and gambling disorder [28–31]. Research into internet misuse has investigated lying as a behaviour to conceal internet involvement from close relations and as a form of escapism from (perceived) hardships in life [32–34]. Excessive time spent online can have negative repercussions on physical and mental health, work life and it can result in neglect of family, friends, social activities and personal interests [34]. A person might lie about their online activity to hide their sexual interests, sexual practices, or sexual compulsions from a partner or family member [33,35]. Secrecy and lying to close relations are also characterized as typical behaviors of people with gambling disorder who gamble online and offline [36,37]. Previous research found correlations between internet misuse, compulsive behaviors [29,31] and impaired relationships with family and friends [33,35] but not with scores on the Sheehan Disability Scale (a three-item self-report scale of work, family life and home responsibilities) [38].

Given a relative paucity of research into the acceptability of lying alongside other behavioral constructs that can impair relationships [9], this study aimed to examine lying acceptability and correlations with a variety of measures (Machiavellianism, internet addiction, self-esteem, functional impairment and religiosity. In line with Oliviera and Levine [9], we hypothesized that people who score highly on religiosity would be more bothered by their lying whereas those with higher scores of Machiavellianism would not be. Based upon the findings of Young [33,34], we also hypothesized that responses to the Internet Addiction Test would be positively correlated with scores pertaining to the acceptability of lying. Given that Machiavellianism characterizes manipulation and deceit [39], we expected to note positive correlations between the acceptability of lying and Machiavellianism and perhaps with internet addiction. We inferred that as the acceptability of lying and/or Machiavellianism increases, so too might internet addiction due to individuals perhaps being deceitful to disguise (the true extent of) their behavior.

## 2. Methods

### 2.1. Participants

One-hundred and thirty-eight adults took part in this study after being recruited via email. All were students enrolled at a US college who were invited to participate via email and through non-random sampling, 35% of whom were in their freshman/first year; 22% were in their sophomore/second year; 20% were in their junior/third year; and 23% were in their senior/fourth year. Participants were required to provide informed consent to take part in the survey and the study received full ethical approval from the Institutional Review Board of the University of Chicago (IRB University of Chicago Approval; Approval Code: IRB17-1343; Approval Date: 18 September 2017).

### 2.2. Questionnaire Assessment

Study participants were asked to answer questions about their lying and to complete a variety of validated psychometric tests. These tests included the Lie Acceptability Scale (LAS), Machiavellianism Scale (MACH-IV), the Duke University Religion Index (DUREL) Internet Addiction Test (IAT), Rosenberg Self-Esteem Scale (RSE), and the Sheehan Disability Scale (SDS) (which we adapted to assess lying). The SDS is a three-item scale designed to assess functional impairment at work, socially, and at home; it can be modified to investigate impairment pertaining to various disorders [40]. We adapted the SDS to investigate lying and the questions that participants answered were: "Has lying affected your school (college/university) life? Has your lying affected your social life? Has your lying affected your family life/home responsibilities?"

The LAS consists of 11 items. Each item assesses individual attitudes towards deceptive communication in a Likert-scale format; four items within the LAS needed to be reverse coded so that higher scores reflect higher levels of lie acceptability [9]. A revised version of the MACH-IV is a 17-item self-report measure of Machiavellian aspects of personality; it excludes outdated items found within the 20-item version [41,42]. The DUREL is a five-item measure of religious involvement that assesses three dimensions of religiosity: organizational religious activity, non-organizational religious activity, and subjective religiosity [43]. The IAT is a 20-item scale that measures symptoms and severity of problematic usage of the internet [33] and it is the most widely used internet addiction scale [34]. The RSE is a 10-item scale that measures self-worth through positive and negative feelings assessed on a 4-point Likert scale [44].

### 2.3. Statistical Analysis

We used a combination of R Studio (ggplot2), SPSS and Excel to analyze our study data. We provided descriptive statistics to report who study participants most often lied to and how participants characterized their lies. The scores of participants for each item on the LAS, MACH-IV, IAT, RSE and SDS were computed into new variables containing the total scores for each respective scale. The scoring is not consistent across every item on the DUREL; the first two items are scored out of six and the latter three items scored out of five [43]. In order to analyze just one score for these scales, the first two scores were multiplied by five and the latter three scores were multiplied by six to produce a consistent score out of thirty and a new variable containing a sum of scores.

Given that lie acceptability can refer to a generalized attitude [9], we sought to establish how this variable might be related to other attitudes and personality traits that instigate or deter lying, such as Machiavellianism or religiosity. Bivariate correlations were computed and ranked based upon their strength so that they could be modeled using their degree of similarity. The strongest association between our study variables was ranked as "1"; the second strongest correlation was ranked as "2", and so forth (six variables were compared against the other five with duplicate scores being omitted, thus halving the total). Our thresholds of statistical significance (2-tailed) are displayed at  $p < 0.05$  and  $p < 0.01$  uncorrected.

MDS examines measurements of similarity among pairs of study objects [45] and akin to statistical methods such as principle component analysis, and MDS can serve as a dimension reduction technique [46]. MDS presents objects within a geometric space in which closer points signify a stronger relationship [45,47]. Objects are mapped using mathematically produced coordinates which provides a clear visualization of interrelations between all study objects. The axes of these visuals usually appear as ‘Dimension 1’ and ‘Dimension 2’. However, these labels are arbitrary; of importance are the distances between- and clustering of- objects [47].

There can be a degree of misfit when comparing objects within an MDS model. Misfit is referred to as model “stress” [48], and it is described on a continuum from 0 to 1. Values closer to 0 indicate a lack of misfit or good fit [49]. Normalized raw stress is a measure based on the distances between objects and it is generally preferred over S-stress values that are based on squared distances.

### 3. Results

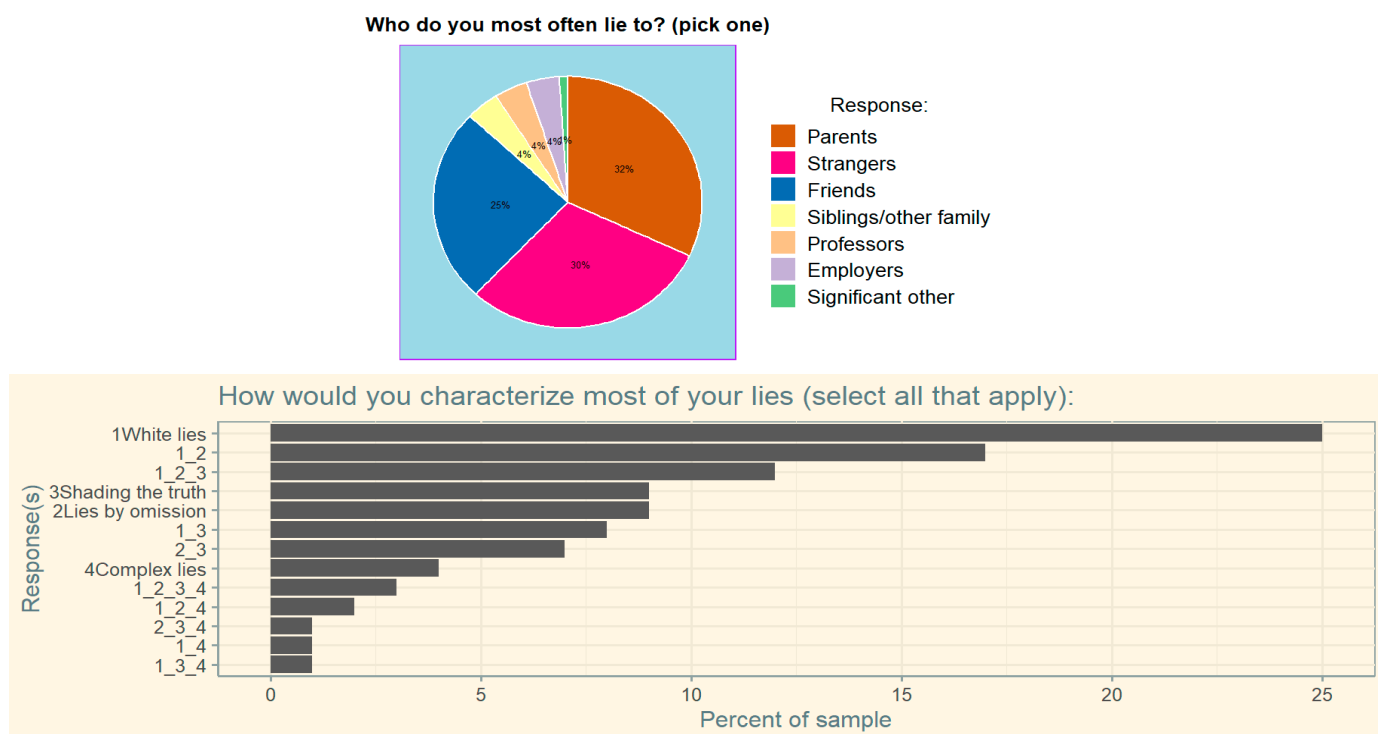
Figure 1 shows that nearly one-third of our sample of 138 participants reported that they most often lied to their parents (32%), while nearly one-third most often lied to strangers (30%); 25% of participants characterized their lies as only “white lies”, while more than half of participants told “white lies” (54%). Only 12% of our sample reported that their lies were complex, comprising those most akin to Machiavellian manipulation and pursuit of personal achievements.

There were eight statistically significant associations between our study variables (Table 1). Three of these could be categorized as modest or moderate correlations [50]. The strongest correlation was between the MACH-IV and the LAS ( $r = 0.513, p < 0.001$ ), the second strongest correlation was between the MACH-IV and SDS ( $r = 0.431, p < 0.001$ ), and the third strongest was between the SDS and the LAS ( $r = 0.385, p < 0.001$ ). There was a moderate negative correlation between the RSE and IAT ( $r = -0.336, p < 0.001$ ) and a weak negative correlation between the RSE and the MACH-IV ( $r = -0.194, p < 0.05$ ) and the DUREL and the LAS ( $r = -0.270, p < 0.001$ ). The DUREL had the fewest statistically significant associations with the other study variables.

**Table 1.** Bivariate correlations between our six study variables.

		LAS	MACH-IV	IAT	RSE	SDS	DUREL
LAS	Pearson Correlation	1.00					
MACH-IV	Pearson Correlation	0.513 **	1.00				
IAT	Pearson Correlation	0.124	0.329 **	1.00			
RSE	Pearson Correlation	0.044	-0.194 *	-0.336 **	1.00		
SDS	Pearson Correlation	0.385 **	0.431 **	0.192 *	-0.01	1.00	
DUREL	Pearson Correlation	-0.270 **	-0.007	0.073	-0.157	-0.089	1.00

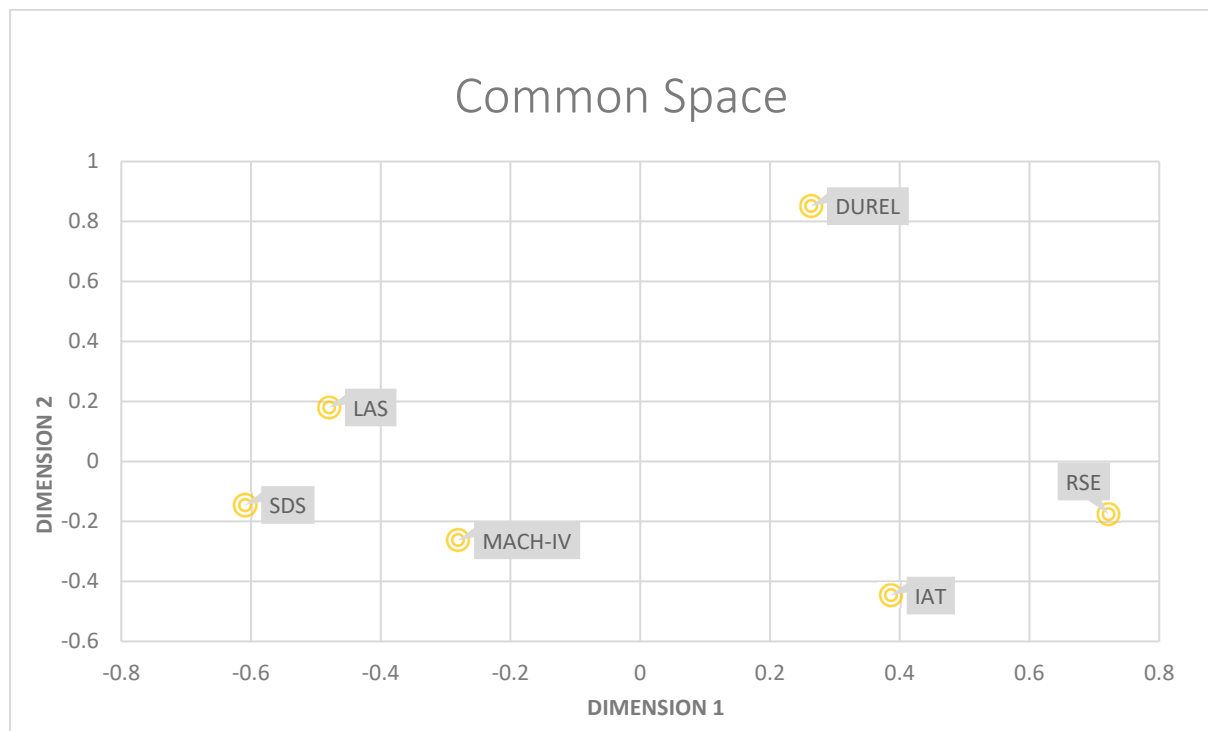
\* Correlation significant at the 0.05 level (2-tailed). \*\* Correlation significant at the 0.01 level (2-tailed).



**Figure 1.** Who did our study sample most often lie to and how did they characterize their lies? The complete response options to the question “How would you characterize most of your lies? (select all that apply)” were as follows: 1. White lies (harmless or trivial lies); 2. Lies by omission (leaving out the truth); 3. Shading the truth (leaving out or concealing part of the truth); 4. Complex lies (relating to your identity, accomplishment, or merit). 1\_2 White lies (harmless or trivial lies); Lies by omission (leaving out the truth). 1\_3: White lies (harmless or trivial lies); Shading the truth (Leaving out or concealing part of the truth) 1\_4: White lies (harmless or trivial lies); Complex lies (relating to your identity, accomplishment, or merit). 2\_3: Lies by omission (leaving out the truth); Shading the truth (leaving out or concealing part of the truth). 1\_2\_3: White lies (harmless or trivial lies); Lies by omission (leaving out the truth); Shading the truth (leaving out or concealing part of the truth). 1\_2\_4: White lies (harmless or trivial lies); Lies by omission (leaving out the truth); Complex lies (relating to your identity, accomplishment, or merit). 1\_3\_4: White lies (harmless or trivial lies); Shading the truth (Leaving out or concealing part of the truth); Complex lies (relating to your identity, accomplishment, or merit). 2\_3\_4: Lies by omission (leaving out the truth); Shading the truth (leaving out or concealing part of the truth); Complex lies (relating to your identity, accomplishment, or merit). 1\_2\_3\_4: White lies (harmless or trivial lies); Lies by omission (leaving out the truth); Shading the truth (leaving out or concealing part of the truth); Complex lies (relating to your identity, accomplishment, or merit).

The multidimensional scale separated the scores for these six psychometric tests into three discernible groups (Figure 2). A normalized raw stress value of 0.00139 indicated good fit within our two-dimensional scale as this value was close to zero [49]. Scores on the DUREL were highly distinct from those of the other study variables; hence the DUREL was positioned by itself. There was similarity between the scores of the IAT and the RSE and closer similarity between the scores of the SDS, LAS and MACH-IV. The strongest correlation (either positive or negative) was between total scores on the LAS and the MACH-IV (see Table 1). Figure 2 confirmed that the strongest associations were across three of the six psychometric tests (SDS, LAS, MACH-IV). Distinctions between these tests and their internal consistency were corroborated by increasing Cronbach’s Alpha values when the DUREL and then the DUREL, IAT, and RSE were omitted from a reliability analysis ([1] SDS, LAS, MACH-IV, IAT, RSE, DUREL; Cronbach’s Alpha value = 0.134; [2] SDS, LAS, MACH-IV, IAT, RSE; Cronbach’s Alpha value = 0.514; [3] SDS, LAS, MACH-IV;

Cronbach's Alpha value = 0.673). Less than 33% of variance between the SDS, LAS, and MACH-IV was random which suggests an acceptable level of reliability [51].



**Figure 2.** A 2-D scale displaying associated groupings across the six psychometric tests.

#### 4. Discussion

Personality constructs related to self-esteem, lying acceptability, religiosity, internet addiction and functional impairment were analyzed using Multidimensional Scaling. Three distinct groupings emerged. Religiosity (Duke University Religion Index) was positioned in relative isolation from the other tests. There was a clear divergence within the multidimensional scale; the only statistically significant bivariate correlation that involved religiosity was with lying (Lying Acceptability Scale). This was moderately weak [52]. Lower scores for religiosity were associated with higher scores for lying acceptability ( $r = -0.270$ ,  $p < 0.001$ ). Scores on the lying acceptability scale were most closely associated with scores on the Machiavellianism scale and the Sheehan Disability Scale. Higher total scores for lying acceptability were positively correlated with higher total scores for Machiavellianism ( $r = 0.513$ ,  $p < 0.001$ ) and scores on the Sheehan Disability Scale ( $r = 0.385$ ,  $p < 0.001$ ). The third associated grouping comprised self-esteem (Rosenberg Self-Esteem Scale) and internet addiction (Internet Addiction Test). Lower scores for self-esteem correlated with greater internet addiction scores ( $r = -0.336$ ,  $p < 0.001$ ).

As hypothesized, lying acceptability appeared to be closely associated with Machiavellianism. This supports the findings of previous scholarly work that those with Machiavellian traits may be more prone to lie and to behave deceitfully towards people close to them [10,23,24,39]. We found correlations between lying acceptability, Machiavellianism, and responses to the Sheehan Disability Scale. This might be expected given that the Sheehan Disability Scale requires the variable under study (in this case lying acceptability) to be adapted to questions about family life, school life, and social life. Religiosity had a weak negative correlation with lying acceptability, and it was situated in relative isolation. In future, it might be best to examine religiosity by itself or alongside different personality constructs.



Contrary to our other hypothesis, internet addiction test scores were neither associated with lying acceptability nor Machiavellianism. This study shows that there is a weak association between lying acceptability and internet addiction among college students. There is a low standing assumption that those with addiction(s) lie to clinicians and others [28,30]. These findings suggest that this may not be the case with internet addiction and/or that internet behaviors do not carry the same stigma that, for instance, alcohol addiction might. Thus, the requisite first step of addiction—to admit the problem(s)—may not be relevant to this behavior.

Further research should investigate why there appears to be a greater association between internet addiction and self-esteem and perhaps not between internet addiction and lying acceptability/Machiavellianism despite the Internet Addiction Test including items about concealing behaviors. Based upon the previous literature and the results of this study, lying acceptability and associated Machiavellianism could be explanatory factors for various compulsive or pathological behaviors and could broaden investigation of activities involving deception and deniability. To the extent that these personality traits and/or symptoms are indicative of wider issues and of clinical significance, intensive psychotherapy (such as psychodynamic therapy) could lead to improvement(s). As of yet, there is no evidence to support this and affected persons might not desire intervention.

Lying, its acceptability, the idea of self-esteem, a person's religiosity, and resultant dysfunction (Sheehan Disability Scale) is complex and there should be more research into the interplay of these variables. For instance, in a world where there are daily news stories about politicians and business people lying about something [2], research could provide more detailed insight into this phenomenon rather than only seeking to identify if a person is lying. There is also complexity and a lack of understanding about how the brain processes truth and veracity.

Limitations of the current study should be considered. This study included a relatively small sample of college students, and it is not possible to determine how our findings might extend to the wider population. This constitutes a next step for future research into lying and deception. Psychometric scale data, such as the IAT, are geographically and culturally specific and they may require adjustment of the sample(s) under study [31]. In addition, there might be better measures of religiosity and social disability than the DUREL and the SDS, respectively, used in this study; these scales contained few items. Finally, this study was cross-sectional. It was not possible to determine the extent to which the characteristics of participants changed or remained constant over time. Longitudinal studies with larger samples could test the replicability of our findings.

The data collected for this study were self-reported, and it is not possible to determine if study participants were lying when participating in this research. This is a challenge for research into lying or lying acceptability and Machiavellianism more generally, which suggests that more creative/novel research methods might be required. While these data give insight into a variety of scores on validated psychometric tests, inclusion of clinical structured interviews or in-person cognitive/behavioral assessments would be valuable, as would observational methods that facilitate monitoring participants under experimental conditions. For example, a prior study examined whether children lie about having peeked at a toy that they have been left in a room with after having been instructed not to [15]. With adult study participants, a researcher could perhaps provide a supposedly unclaimed delivery and then assess whether the participant(s) claimed it as their own, and why, when challenged (by a different/covert researcher).

## 5. Conclusions

We found moderate positive correlations between lying acceptability and Machiavellianism and between lying acceptability and functional impairment at work, at home, and in social settings (measured using the Sheehan Disability Scale). Contrary to our initial hypothesis that lying acceptability and Machiavellianism might be correlated with internet addiction, a multidimensional scale displayed internet addiction in relative isolation

from Machiavellianism; instead, lying acceptability and Machiavellianism were closer to functional impairment. Religiosity bore little or no correlation with other study variables.

Lying acceptability, alongside Machiavellianism and functional impairment, could be applied to a new research context, perhaps an examination of specific behaviors such as compulsive sexual behavior or disordered gambling. Internet addiction, self-esteem, and religiosity might serve as explanatory mechanisms in isolation. Researchers should be cognizant of limitations with self-reported methods for collecting data about lying and deception and could seek to contribute further knowledge within this domain through use of observational studies and behavioral assessments.

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**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** Third-party data. Restrictions apply to the availability of these data. Data were obtained from Professor Grant and are available with the permission of Professor Grant.

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