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## Me, myself, and lie: The role of self-awareness in deception

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### Abstract

Deception has been studied extensively but still little is known about individual differences in deception ability. We investigated the relationship between self-awareness and deception ability. We enlisted novice actors to portray varying levels of deception. Forty-two undergraduates viewed the videotaped portrayals and rated the actors' believability. Actors with high private self-awareness were more effective deceivers, suggesting that high self-monitors are more effective at deceiving. Self-awareness may lead to knowledge of another's mental state (i.e., Theory of Mind), which may improve an individual's deception ability.

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## 1. Introduction

Deception is a tactic employed in social interaction in order to gain a strategic advantage over an opponent or other relationship partner. Although deception is considered a human tactic, some non-human primates (i.e. apes, monkeys, and chimpanzees) also may be capable of using deceptive strategies. However, non-human primates may learn to deceive through learned associations or reinforcement. This type of deception lacks intention; the deceiver is unaware that he or she is manipulating another's thoughts. Intentional deception occurs when one *deliberately* misleads a person to believe something that is untrue or withholds or conceals true information (Byrne & Whiten, 1988).

Self-awareness can be broadly defined as the ability to reflect on one's own thoughts (Gallup, 1982). There are two types of self-awareness: private self-awareness is one's awareness of his or her own feelings, thoughts, and motives, whereas public self-awareness is one's ability to understand how other people view himself or herself socially (Fenigstein, Scheier, & Buss, 1975). A key advantage of self-awareness is that it allows the individual to also possess Theory of Mind (ToM) (see Gallup, 1982; Keenan, Gallup, & Falk, 2003). ToM can be conceptualized as the ability to "mind read" or decipher what another person is thinking based on one's own thoughts (Premack & Woodruff, 1978). Self-awareness may be necessary in order to employ ToM (Keenan et al., 2003; see also Gallup, 1982). This foundation of self-awareness also may be necessary for the effective use of deception (Keenan, Wheeler, Gallup, & Pascual-Leone, 2001b). It is possible that the presence of ToM is what gives one the ability to deceive, at least in terms of intentional deception (for review, see Whiten & Byrne, 1997).

The evidence for the relationship between self-awareness and ToM has been generated from three main lines of research: developmental, abnormal, and comparative. In terms of human development, self-awareness (as measured by several factors, including self-pronoun use and mirror-recognition) precedes the development of ToM (Lewis, 1992). In populations with self-awareness deficits (e.g., schizophrenia, autism, Asperger's syndrome), there is evidence of ToM deficits (Baron-Cohen, 2003). Finally, there are indications that animals that possess a sense of self also possess ToM, whereas animals that do not demonstrate signs of self-awareness fail ToM tasks (see Keenan et al., 2003).

Cognitive neuroscience also has demonstrated a link between self-awareness and ToM. Both are thought to be right hemisphere dominant (self-awareness: Gallup, 1982; Keenan, McCutcheon, & Pascual-Leone, 2001a; Schore, 2002; Sugiura et al., 2000; Tanaka & Porterfield, 2002) (ToM: McCabe, Houser, Ryan, Smith, & Trouard, 2001; Vogeley et al., 2001). There also is evidence that deception and deception detection may be predominantly right hemisphere functions (Ganis, Kosslyn, Stose, Thompson, & Yurgelun-Todd, 2003; Modell, Mountz, & Ford, 1992; Porter, Campbell, Stapleton, & Birt, 2002; Sellal, Chevalier, & Collard, 1993; Spence et al., 2001; Stuss, Gallup, & Alexander, 2001). Right frontal activity, in particular, increases with the degree of lie cohesiveness (Ganis et al., 2003).

The present study investigates the relationship between self-awareness and the ability to deceive. Self-awareness, as defined as the awareness of one's own mental states, may lead to greater understanding of someone else's mental states (Gallup, 1998). Because intentional deception requires one to understand the mental state of another (hence, ToM), it is predicted that there is a positive relationship between self-awareness and deception ability. Existing data appear to sup-

port a relationship between self-awareness and deception. For example, deception occurs shortly after the emergence of self-awareness (as indicated by self-recognition, self-pronoun use, and self-conscious emotions; Lewis, 1992). Furthermore, in populations where there are deficits of self-awareness (e.g., schizophrenia), there are reports of deception deficits (Barnacz, Johnson, Constantino, & Keenan, 2004). Among non-human primates, chimpanzees appear to use intentional deception under a number of conditions. Finally, both deception and self-awareness appear to be right hemisphere mediated (Malcolm & Keenan, 2003).

Direct tests of such a relationship, however, are needed. For example, although chimpanzees do apparently attempt to deceive conspecifics, these attempts are somewhat rare, and not all chimpanzees appear to use deception as a manipulative tactic. Furthermore, in disorders such as schizophrenia, cognitive-emotional deficits other than a lack of self-awareness may lead to decreases in deception use or ability. Finally, although participants who are low in schizotypal personality traits have a left hand advantage (right hemisphere advantage) for processing information about the self, those who are high in schizotypal personality traits do not (Platek & Gallup, 2002; Platek, Myers, Critton, & Gallup, 2003). If self-processing is affected by schizotypal personality traits it is possible that deception may be as well.

We conducted this study to investigate the relationship between self-awareness and deception. We propose that an increase in self-awareness will result in an increase in effective deception. Having knowledge of one's own thoughts should translate to a greater ability to deceive (i.e., having knowledge of another person's thoughts).

## 2. Method

### 2.1. Participants

Twelve "actors" (six men, six women, ranging in age from 19 to 25 years old) were recruited from outside of Montclair State University to avoid familiarity with the participants, who viewed and rated the actors' statements. None of the actors were professional, and all reported at most minimal acting experience (e.g., school play). The raters were 42 Montclair State University undergraduates. They were recruited from psychology courses and given extra credit for their participation.

### 2.2. Materials and procedures

Each actor prepared three 30–45 s video segments according to a script provided by the researchers. The segments were "truth," conveying accurate biographical information, "faking good," indicating deception via exaggeration of desired characteristics, and "faking bad," portraying deception via exaggeration of negative characteristics. The script remained the same for each segment, with biographical information adjusted for accuracy. There were no "stakes" associated with deception performance (see Frank & Ekman, 1997, for discussion).

On each video segment, the actors introduced themselves and then provided biographical information for each of the three conditions, including age, height, weight, current residency, occupation, salary, occupation aspiration for 10 years from now, number of days a week spent at the

gym, does/does not want a family, and desired number of children. In both the faking bad and faking good conditions, actors were asked to exaggerate their biographical information according to gender differences in deception (Dimoulas, Wender, Keenan, Gallup, & Goulet, 1998). Faking good was defined as presenting biographical information that a person of the opposite sex would be expected to desire. For example, a woman “faking good” would decrease her weight, whereas a man would increase his desire for commitment.

The actors’ faces and shoulders were videotaped under bright lighting conditions. The camera view was a head-on, 0° angle. Each actor was given a few minutes to practice their script until they felt comfortable and natural in their presentation. In order to control for presentation effects, three videos were prepared for this experiment. Each video consisted of 12 actors (six men and six women), and each actor appeared only once per video. The order of the segments was randomized. Each participant saw one video containing two men telling the truth, two men faking good, two men faking bad, two women telling the truth, two women faking good, and two women faking bad.

Actors were asked to complete a series of questionnaires before taping the segments. All actors completed these surveys within 20 min. First, actors were asked to answer questions regarding basic demographics. Next, actors were given the Schizotypal Personality Questionnaire (SPQ)—full version (Raine, 1991) and the Self-Consciousness Scale (SCS; Fenigstein et al., 1975). The SPQ was developed to assess schizotypal personality disorder, using DSM-III-VR criteria, in a normal population. Answers to questions on the SPQ were given numerical values. A yes response (indicating more schizotypal characteristics) was assigned a value of 1, whereas a no response was assigned a value of 2. Values for all questions were summed to obtain a total SPQ score for each participant. Scores ranged from 74 (lowest possible score) to 148 (highest possible score). The SCS assesses self-awareness using two subscales, the private subscale and the public subscale.

Videotapes containing statements made by the actors were shown to participants. There were 15 s pauses between each of the segments (actors). During this pause each participant answered two questions. First, they indicated if they believed the actor was being truthful or deceitful. Second, using a 5-point Likert scale, they were asked to indicate how confident they were in their responses from 1 (*Not at all confident*) to 5 (*Very confident*). Following the completion of the video portion of the experiment, the participants were debriefed.

### 3. Results

Data were analyzed employing accuracy of the participants (Correct/Incorrect) as a predictor variable and the self-awareness scores of the actors (SPQ, SCS Public, SCS Private) as dependent variables. The overall deception detection rate was 55.15% ( $SD = 10.54$ ). The actors were 44.85% successful in deceiving the sample. Employing a single-df *t*-test, this rate did not differ from chance, ( $t(11) = 1.69$ ,  $p > .05$ ). The average Actor SPQ score ( $M = 120.92$ ,  $SD = 15.88$ ) ranged from 95 to 141. The average score on the private SCS was 3.41 ( $SD = .96$ ; range 1.50–4.50) and the average score on the public SCS was 3.62 ( $SD = 1.65$ ; range 1.00–6.43). There was a significant correlation between the SCS subscales, ( $r(10) = .088$ ,  $p < .001$ ). However, there were no correlations between the SPQ and either SCS subscale (both  $ps > .05$ ).

To determine if there was a relationship between self-awareness and deception ability, a regression analysis was performed employing the SPQ, SCS private and public scales as predictors. The overall model was significant,  $F(3, 8) = 4.17, p < .05$ . Neither the SPQ nor the SCS public were significant predictors (both  $ps > .05$ ). The SCS private, however, significantly predicted deception ability,  $t(11) = 2.66, p < .05$ . The nature of the effect was such that the more privately self-aware an individual was, the better his or her deception ability. We re-ran the model, excluding the SPQ and the SCS public scale. The SCS private scale again significantly predicted deception ability,  $F(1,10) = 11.29, p < .01$ . The nature of the effect indicated that deception ability increases as private self-awareness increases.

#### 4. Discussion

Actors with high private self-awareness are more effective deceivers. Individuals who are high in private self-awareness tend to be conscious of their feelings, attitudes, and motives (Fenigstein et al., 1975). Being aware of one's own thoughts may be beneficial in that these can be used to enter the mind of another person (Gallup, 1982) and ultimately deceive them. There is a strong relationship between self-awareness and Theory of Mind (ToM) and these faculties appear to be correlated positively with deception (see Keenan et al., 2003, for review).

We found that deception effectiveness correlates with greater private self-awareness, as predicted. Researchers have found that both phenomena are "right hemisphere" dominant (for reviews see Decety & Chaminade, 2003; Decety & Sommerville, 2003; Keenan et al., 2001b; Platek et al., 2003; Vogeley et al., 2001). In addition, previous research documents a correlation between SCS private score and the use of the left hand during deception trials (Barnacz et al., 2004). Therefore, finding that self-awareness and deception are correlated provides support for a common neural basis. This right hemisphere finding may be influenced by personality factors (see Miller & Rosenfeld, 2004; Vrij, Akehurst, Soukara, & Bull, 2004) and future studies should account for personality ratings.

Inner self-awareness (as indicated by the private SCS) involves self-monitoring and accessing one's own mental state. We have found in previous studies that this scale is an excellent predictor of other self-awareness measures (Barnacz et al., 2004). We were not surprised that the public SCS was not a significant predictor. The public self-consciousness scale and its relationship to deception were examined previously; although people tend to look for cues that are related to public self-consciousness, it is not a reliable predictor of deception (Vrij, 2000). The private and public consciousness scales are two distinctly different constructs. High private self-consciousness does not guarantee high public self-consciousness or vice-versa (Fenigstein et al., 1975). As predicted, we found that it is a person's awareness of his or her own thoughts and feelings that predict ability to deceive.

The fact that SPQ score was not a significant predictor of deception ability also deserves attention. In previous studies (e.g., Platek & Gallup, 2002; Platek et al., 2003), the SPQ has correlated with other measures of self and self-related performance. In our sample, the SPQ did not correlate with either SCS scale. Because we have found previous correlations between these measures (Johnson et al., 2004), perhaps our sample's SPQ scores are not representative. Perhaps the actors

were answering favorably (there is no check) or in some other manner that may have influenced the measure. Further research should examine this possibility.

The fact that there was a significant relationship between self and deception supports Gallup's (1982) claim that the self and ToM are related. Furthermore, this finding is consistent with the idea that one evolutionary benefit gained from self-awareness is deception ability. If successful, deception has many benefits. Some of the benefits of deception include making or maintaining a favorable impression on others, avoiding punishment, and maintaining positive social relationships (Vrij, 2000). In addition, intentional deception might provide advantages in mating contexts. People often deceive members of the opposite sex, both current and potential romantic partners. If intentional deception is successful, one might thereby increase their chances of securing a more desirable mate than they might otherwise secure without the aid of deception (Buss, 2003).

In summary, the current study documents that actors with higher private self-awareness are more effective deceivers. These data support the hypothesis that there is a predictable relationship between self-awareness and deception.

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