Self-deception inhibits laughter

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ABSTRACT

How does self-deception affect the appreciation of humor and laughter? Fifty-nine undergraduates at Rutgers University (33 females, 26 males) were videotaped while watching a stand-up comedian for 28 min. Positive emotional expressions associated with laughter were analyzed for short sections of the act (total: 8 min or 14,400 video frames) and were scored for each subject using the facial action coding system (FACS). Participants who scored lower on a self-deception questionnaire (low self-deceivers) laughed significantly longer and more intensely than those who scored higher on the questionnaire (high self-deceivers). This was true when corrected for measures of impression management, extraversion, mood and how much a person laughs in their everyday life. If self-deception evolved to deceive others and laughter is a hard to fake signal of preferences, then suppressed laughter by self-deceptive individuals may serve to mask ones preferences. More generally since humor often involves seeing life or a person from a novel angle and self-deception tends to reduce such angles, self-deception will naturally tend to reduce ones sense of humor.

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1. Introduction

Incongruity theory has dominated scientific investigations of humor for decades (Attardo & Raskin, 1991). Darwin (1871) wrote of laughter, "Something incongruous or unaccountable, exciting surprise and some sense of superiority in the laugher seems to be the commonest cause. The circumstances must not be of a momentous nature." Although a statement might fulfill the requirements of being both surprising and incongruous, it may not be funny if it ends with someone in a coma. In some cases the joke itself is the signal we use to alert others to the (supposed) inconsequential nature of intended humor. If someone is offended or doesn't see the humor in a comment, we may explicitly tell them that, "It was just a joke." 'Getting the joke', however, may require the recognition of an incongruity, which may in turn rely on access to unconscious information as well as an absence of cognitive bias. Clarke (2008) argues that humor is evoked by the surprise recognition of a novel pattern and rewards cognitive development. It evolved later as an external signal (laughter) which allows this ability to be advertised in an involuntary and honest manner. Although there have been a wide range of theories addressing the evolutionary function of laughter, many suggest an important role for the unconscious in humor appreciation.

Until recently, laughter had been regarded as a uniquely human behavior. Laughter-like behavior has now been reported in other species, including chimpanzees (Provine, 1996) and rats (Knutson, Burgdorf, & Panksepp, 2002). Chimpanzees utter laugh-like sounds when they are being chased and (as in children) it is those being chased that laugh. Research on wild chimpanzees provides evidence that play panting (laughter) functions as a signal to the chaser that the interaction is not perceived as threatening and that play can continue (Matsusaka, 2004). Others have imagined a link between laughter and discriminating between play and aggressive behavior in early hominids (Gervais & Wilson, 2005). Thus the ability to accurately perceive reality-by discriminating between threatening and harmless behavior may sometimes be important in stimulating laughter. In rats laughter was induced by tickling. It is not known if laughter in other species shares a common ancestry with laughter in humans.

Trivers defines self-deception as "the active misrepresentation of reality to the conscious mind" (Trivers, 2011). He argues that self-deception evolved, in an ongoing arms race between deception and its detection, the better to conceal deceit which may be unwittingly revealed through nervousness and signs of cognitive load by the deceiver (Trivers, 2011). Because self-deception interferes with one's ability to accurately perceive reality, it may hinder one's ability to recognize incongruities, thus reducing laughter. It has been shown that participants classified as higher in self-deception find it more difficult to identify anomalies (Peterson, Driver-Linn, & deYoung, 2002). Participants scoring in the top quartile of self-deception scores (using the self-deception denial scale of the BIDR) took twice as many trials to identify anomalous playing cards, such

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as a black jack of diamonds (it should be red), compared with those scoring in the lowest quartile. Both groups identified the regular cards with equal speed and accuracy. Likewise a participant's inability to recall negative or threatening words is linked to high scores on the self-deception denial scale of the BIDR (Shane & Peterson, 2004). These results, in connection with the possibility that humor appreciation involves either the identification of anomalies (Darwin, 1871) or the ability to process a potential threat as harmless (Matsusaka, 2004) suggest that self-deception may interfere with an appreciation of certain types of humor.

If the adaptive benefit of self-deception is to conceal ones beliefs and preferences, and humor serves to reveal them, then self-deception may hinder one's ability to appreciate humor and may suppress the laughter signal. We therefore hypothesized that high self-deceivers would be less able to access contradictory 'true' beliefs and would laugh less than low self-deceivers in response to humorous material.

Another way to put the matter is that humor deals with the absurdities of life. The less you are in tune with reality the less likely you are to see the absurdities. Rational thought often involves viewing a person or situation from multiple angles, the better to get an unbiased overview. Humor also often involves seeing something from a novel angle, with surprising and pleasing effects. But if you are practicing self-deception and blocking out certain angles, you will, when these angles are exposed, fail to see the absurdity and fail to enjoy the humor. George Meyer, a lead writer for the Simpson's, says of comedy, "It's like seeing in two dimensions and then opening the other eye or looking through a View-Master and suddenly seeing in three" (Owen, 2000). If this argument is true, then less laughter may signal higher self-deception, a fact that may be worth noting by others.

2. Methods

The participants and comedy videos used in this study are the same as those used for a previous study which found evidence of a positive association between laughter and an individual's implicit preferences (Lynch, 2010). Fifty-nine undergraduates from diverse backgrounds (26 males, 33 females—36 Caucasians, 21 Asians, and 2 African-Americans) from an introductory anthropology course were selected for the study and offered extra credit (5% added to their final grade) in exchange for their participation. Each subject filled out the 20-question, self-deception denial subscale and the 10-question impression management subscale of the Balanced Inventory of Desirable Responding (BIDR) (Paulhus & Reid, 1991). The subject was videotaped watching a 30-min video of stand-up comedian Bill Burr, and answered a few questions about their mood, self-reported extraversion and enjoyment of the comedian. The order of the tasks was counterbalanced between watching the video and taking the self-deception and impression management questionnaires.

2.1. FACS

We used a facial action coding system (FACS) that provides an exact representation of facial expressions, avoiding the numerous problems of self-reports (Ekman & Friesen, 1978). There is a growing body of evidence that certain facial expressions, particularly AU6, also known as the 'Duchenne smile' (the squinting of the outer eyes), are extremely difficult to fake and rely on unconscious processes (Ekman, Davidson, & Friesen, 1990). This part of a smile signals genuine warmth. Participants' facial expressions were recorded applying the seventh version of the Emotion Facial Action Coding System (EMFACS-7) (Friesen & Ekman, 1984). Both FACS and EMFACS are comprehensive anatomically based techniques

for objectively measuring facial expressions. Each facial movement is assigned a code called an action unit (AU). While FACS records intensity, duration and type of action unit for all 44 discernible facial expressions, EMFACS allows a coder to record only those action units involved in emotions relevant to the study. The present study employed EMFACS and concentrated on 4 action units suggested by Ekman (personal communication) to be specifically involved in laughter.

AU's 6 and 7 (tightening of ring muscles around the eyes), AU 12 (raising of outer lip corners), and AU 14 (tightening of outer lip corners) have previously been identified as markers of positive emotion, are expressed during laughter and were the only action units scored for this study. These four AU's were scored for intensity, duration and type (AU number) for each individual frame (30 frames per second) for all coded sections of the videotape. As suggested by the EMFACS manual, only intensity levels 2–5 were used, as mistakes can easily be made when attempting to discern subtle facial movements associated with the low intensity level of 1.

The time consuming, frame by frame, analysis required by EMFACS did not allow for the facial expressions of participants to be coded for the entire length of the routine. So the scoring of participants watching the comedy routine was divided into three segments of 160 s each. Segments were selected for diversity of content—topics such as anorexia, why men should make more money than women for doing the same job, and the comedian's fear of African Americans. For each frame that was coded (total of 480 s or 14,400 frames), action units and intensity were recorded by Robert Lynch who is certified to use the facial action coding system and passed the FAC's final exam. All scores for all frames were summed for each action unit and participants were given a score that reflected the intensity and duration of each AU recorded. The total scores for all AU's were then combined into a composite score reflecting a participant's positive emotional expression for all three parts of the routine.

2.2. Self-deception questionnaire

The self-deceptive subscale of the Balanced Inventory of Desirable Responding (BIDR) was filled out by each participant (Paulhus & Reid, 1991). It is a 20-item questionnaire and closely resembles the original Self-Deception Questionnaire (SDQ) developed by Sackheim and Gur (1978). The measure confronts people with thoughts or beliefs that many individuals may be reluctant to admit having, and purports to capture the varying degree to which they are willing to acknowledge these thoughts (see Supplementary material: Appendix A for the questions and the scoring system).

Each participant responded to each question with a number on a scale of 1 'not at all true' to 7 'very true'. Some of the questions included are "More than once it felt good when I heard on the news that someone had been killed", and "I could never enjoy being cruel". Each extreme response (1 and 2 or 6 and 7, respectively) was scored as one point if it reflected a reluctance to admit to something distasteful. For example, a participant who responded with a 1–5 to the item "I can't think of anyone I hate deeply" would not receive any point while a 6 or 7 (very true) gave the participant one point. The more points a participant received (a maximum of 20) the higher in self-deception he or she was perceived to be.

Several experimental studies have demonstrated the value of the self-deception questionnaire used here. Subjects scoring higher on this questionnaire have shown more illusion of control, believe they are safer drivers, show increased susceptibility to falling in love (Paulhus & Reid, 1991), higher implicit religiosity (Leak & Fish, 1989), extreme confidence in memory and increased hindsight bias. They have also claimed more familiarity with nonexistent products and report higher self-esteem (Paulhus & Reid, 1991).