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THE ILLUSION OF TRANSPARENCY AND NORMATIVE BELIEFS ABOUT ANXIETY DURING PUBLIC SPEAKING

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ABSTRACT

Public speakers believe their nervousness is more apparent to others than is actually the case, a phenomenon known as the illusion of transparency. Study 1, in which participants delivered a public speech to an audience, provided evidence of this phenomenon. Despite this, a substantial minority of participants (36%) thought that the audience would rate them as more anxious than they actually were. We propose that these participants were adhering strongly to a social script which defines public speaking anxiety as normal. Study 2, a survey study, demonstrated the existence of this script; people tend to believe that virtually everyone experiences high levels of public speaking anxiety. Theoretical refinement is recommended to explain how this social script is integrated with the illusion of transparency.

INTRODUCTION

It is one of life's cruel ironies that public speaking anxiety (PSA) is exacerbated by the fear of looking anxious. Nervous public speakers express concern that observers can detect their high levels of emotional arousal (McEwan and Devins 1983) and hence, form negative impressions of them (Gonsalvez and Suey 2003). The illusion of transparency arises when one believes that his/her "...thoughts, feelings, and emotions are more apparent to others than is actually the case" (Gilovich, Savitsky, and Medvec 1998:618). Nervous speakers may believe their emotional state is "transparent," though in reality, audiences may not be very accurate in detecting speaker anxiety (Behnke 1987). When the internal state is particularly strong (i.e., high anxiety) persons tend to focus intently on the emotions they experience and anticipate that others are more aware of that internal state than is actually the case (Gilovich et al., 1998; Savitsky and Gilovich 2003).

To illustrate the illusion of transparency, Savitsky and Gilovich (2003) had participants deliver impromptu speeches in pairs. After the speech, speakers rated (1) their own anxiety, (2) the degree to which they appeared nervous and (3) the degree to which their partner appeared nervous. Results showed that participants overestimated the extent by which their nervousness was evident to their partner. Further, the effects of this illusion were ameliorated by simply assuring speakers that their anxiety was not as visible to the audience as speakers tend to believe.

The illusion of transparency can be explained in terms of a heuristic process of anchoring and adjustment. Savitsky and Gilovich (2003) argue that people have difficulty distancing themselves from their own phenomenology when determining how others see them. Those high in PSA tend to anchor their perception in their internal anxiety sensations, correct insufficiently for the fact that others are less cognizant of those sensations, and hence overestimate the extent by which their anxiety is evident to audience members. This is consistent with the spotlight effect (the notion that people overestimate the extent by which their actions are noticed by others), which is also theorized to be caused by an insufficient adjustment from one's own internal experience (Gilovich, Medvec, and Savitsky 2000; Gilovich, Kruger, and Medvec 2002).

A speaker's emotions are neither completely masked nor completely transparent. Instead, only some of the speaker's emotions "leak out," becoming obvious to onlookers. We propose that emotional transparency should be especially evident at higher levels of anxiety where physiological manifestations of nervousness (trembling, perspiring, flushed face, etc.) are (potentially) more easily observed by an audience. At lower levels of anxiety arousal, the speaker may perceive better control over leaking emotional cues.

Under this hypothesis, it is important to note that the *direction* of the adjustment should be consistent. That is, given ideal measurement conditions, if emotions are "leaking out," then the maximum value of imagined audience ratings should be equal to situational self-ratings of anxiety (i.e., no anxiety is concealed). However, Savitsky and Gilovich (2003) report an interesting result that is inconsistent with the notion of anchoring and adjustment described so far. Consistent with predictions, they found that speakers believed that they appeared more anxious than the audience actually perceived them to be. The anomaly arises in that, on average, speakers reported experiencing less anxiety ($M = 5.95$, on a scale from 0 to 10) than they thought the audience saw ($M = 6.55$). If the imagined audience ratings of anxiety are greater than the

speaker's ratings, then the imagined audience ratings are not generated by anxiety merely "leaking out" to the audience. Instead, the anchoring—adjustment process might be relying on additional information over and above a speaker's internal sensations.

Theoretical refinement to the anchoring-adjustment explanation may be necessary to account for this anomalous finding. There seems to be a widespread belief that high levels of public speaking anxiety are normal, even in otherwise psychologically healthy persons. This belief seems to be based on common folk wisdom, however, rather than empirical research. Nevertheless, this base-rate belief likely impacted participants' estimates of audience thoughts in Savitsky and Gilovich's (2003) study. Specifically, the belief that public speaking anxiety is the norm resulted in an overestimation of imagined audience ratings of anxiety. This process co-occurs with the illusion of transparency, and both processes, we argue, are important dimensions of the anchoring-adjustment process that occurs when gauging the reactions of others during a speech. The current research attempts to conceptually replicate Savitsky and Gilovich's (2003) findings in Study 1, and to show that high levels of public speaking anxiety are indeed seen as normative in Study 2, providing evidence of these two important processes.

STUDY 1

The purpose of Study 1 is to replicate and extend research by Savitsky and Gilovich (2003) to assess the relative frequency of underestimating and overestimating the audience's perception of anxiety. This study tests the following four hypotheses:

H1: We expect speakers' own ratings of anxiety to be higher than audience ratings of speakers' anxiety.

H2: Overall, we expect that speakers will estimate audience ratings of speaker's anxiety to be higher than the ratings of anxiety the audience actually provides. Further, if the estimate of the audience's rating is based on perceived internal states, we expect a strong correlation between speakers' ratings of their own anxiety and their estimate of the audiences' ratings, but lower correlations with ratings provided by the audience.

H3: As levels of PSA increase, the illusion of transparency will increase because perceived leakage of anxiety cues will be more difficult to control. Therefore, we expect a positive correlation between anxiety ratings and a score representing the illusion of transparency.

H4: A substantial percentage of participants will report that the audience notices more anxiety during their speech than speakers report experiencing.

Method

Participants

Students from an introductory public speaking course participated in the study. One hundred and two participants completed the trait PSA measure, 93 participants completed the speaker surveys (consisting of the situational and reflected appraisal PSA measures), and 66 participants

completed both the trait PSA and speaker surveys. Audience members also completed surveys rating the speeches. On average, the audience was a moderate size for each speaker ($M = 15.0$, $SD = 2.8$).

Materials

1. Trait PSA (Alpha = .86). Beatty's (1988) six item scale was used to assess PSA. The items, scored on a Likert scale ranging from 1 (strongly agree) to 7 (strongly disagree), tap one's anxiety when giving a speech. Three items were reverse scored. An example item from this scale is "I have no fear giving a speech".
2. Situational PSA (Alpha = .86). Beatty's (1988) scale was modified so that all items were in the past tense, and speakers rated their levels of PSA immediately after delivering a speech, (e.g. "I *had* no fear giving a speech").
3. Audience Rating of Anxiety (Alpha = .90). To measure audience ratings of speaker anxiety, Beatty's (1998) public speaking scale was adapted to make reference to the speaker (i.e., "The speaker had no fear giving the speech"). Ratings by each audience member were summed, and averaged so that the measurement scale would be comparable to the speaker's anxiety ratings.
4. Reflected Appraisal of Anxiety (Alpha = .82). To measure the speaker's perceptions of audience ratings, speakers rated their speech from the imagined perspective of the audience using the Audience Rating of Anxiety scale (see above).

Procedure

Participants completed the trait PSA measure in a pre-testing session. When the participants gave short speeches as part of their public speaking course, audience members rated speakers' anxiety (audience rating of anxiety). After speakers completed their speech, they rated their own personal level of PSA (situational PSA) and their perceptions of how the audience rated their anxiety levels during the speech (reflected appraisal of anxiety).

Results

Speakers rated themselves as having significantly higher levels of situational PSA than audience ratings of anxiety, $t(92) = 7.71$, $p < .001$, and the imagined ratings of anxiety also were significantly higher than audience ratings of anxiety, $t(91) = 7.89$, $p < .001$ (see Table 1).

Table 1. Means, Standard Deviations, and Correlations among Perceived Anxiety Scores

	<i>M</i>	<i>sd</i>	(1)	(2)	(3)
(1) Situational PSA	24.0	8.68	-		
(2) Reflected appraisal of anxiety	23.3	7.45	.88**	-	
(3) Audience rating of anxiety	17.3	3.17	.30**	.26*	-
(4) Trait PSA	26.2	8.33	.67**	.56**	.28*

** $p < .01$

* $p < .05$

Therefore, the first hypothesis was supported. Our second hypothesis also was supported; there was a very strong positive correlation between situational PSA and the reflected appraisal of anxiety, $r(92) = .88, p < .001$, and no significant difference between the means of those two ratings, $t(91) = 1.57, p > .05$.

To examine the direction of adjustment from an anchor, an "illusion" score was derived by subtracting mean reflected appraisal of anxiety from situational PSA. A score of zero indicates perfect emotional transparency; the speakers felt that the audience could tell exactly how anxious they were feeling. Positive illusion scores indicate that speakers felt some of their anxiety "leaked out" to be observed by the audience. Both of these scores are consistent with anchoring and adjustment theory. However, negative illusion scores indicate that speakers felt the audience noticed more anxiety than the speakers actually felt. A correlation was computed between trait levels of PSA and the newly created illusion score. Results showed that, as our third hypothesis anticipated, trait PSA was significantly positively correlated with the illusion score, $r(65) = .37, p < .001$. As anxiety increases, so does one's propensity to show the illusion of transparency

Interestingly, the direction of the adjustment from baseline (i.e. participants' *own* level of anxiety) is often counter-intuitive. Less than half (49%) rated their own level of anxiety as higher than what the imagined audience saw (consistent with the notion of emotion "leaking out"). Fifteen percent rated their own anxiety and the reflected appraisal as equal. These adjustments are congruent with the notion that participants experience internal states more intensely than, or equal to how they are displayed externally (Gilovich et al. 1998). However, more than one-in-three participants (36%) thought the audience noticed more anxiety during their speech than they were really experiencing, an adjustment that is not consistent with the notion of anxiety leaking out, but nevertheless replicates Savitsky and Gilovich's (2003) anomalous finding.

Discussion

The current study elaborated on previous research (Gilovich et al. 1998; Savitsky and Gilovich 2003) by using an established, reliable, multi-item measure of PSA instead of a one-item measure. Moreover, public speaking was performed in a more naturalistic and anxiety-provoking environment, with evaluation by a live audience of peers. Our main results demonstrate the existence of the illusion of transparency in a naturalistic public speaking situation. Audiences are typically not very accurate at detecting speakers' private anxieties, yet speakers tend to believe that the audience can see more of their anxiety than is actually evident. High levels of PSA are associated with an increased tendency to display the illusion of transparency; as speakers experience higher anxiety levels they also fear more negative evaluation (Gonsalvez and Suey 2003). When estimating how the audience sees them, a nervous speaker will then use those internal sensations of anxiety as an anchor. This feeling of emotional transparency can exacerbate PSA, creating a vicious cycle for anxious public speakers.

Not all participants displayed scores consistent with the theory behind the illusion of transparency, however. Some speakers (36% in the current research) believed that the audience would rate them as displaying more anxiety than they actually felt. This replicates the anomalous

finding reported by Savitsky and Gilovich (2003) who proposed that an over-adherence to a public speaking "script" created the expectation that it is both normal and natural to feel anxious when speaking in public. Thus, we are left with an unanswered question: Do people actually believe that a high level of PSA is normative? Study 2 attempts to answer this question.

STUDY 2

Consistent with the notion that PSA carries an associated script, the prospect of public speaking quickly and consistently generates anxiety (Leary and Kowalski 1995). We learn from a young age that public speaking is a performance to be critiqued by classroom teachers and peers, with ample opportunity for embarrassment (Motely 1991). The expectation that public speaking is an opportunity for humiliation creates an expectancy for PSA to become entrenched as a self-exacerbating syndrome (Jussim and Eccles 1995; Snyder 1984). Although we might expect the individual differences in actual PSA to vary widely, the consensual belief that public speaking *should* arouse anxiety in the typical speaker has the potential to lead any speaker into experiencing anxiety through behavioral confirmation (Snyder and Klein 2005). If the audience holds the belief that PSA is common, and expects a speaker to be anxious, they may react to the speaker in a way that confirms these expectations, potentially adding to the speaker's anxiousness. Study 2 attempts to verify the pervasiveness of the PSA script among a group similar to those in Study 1. Specifically, we propose three hypotheses:

H1: A person described as an extremely anxious public speaker generally will be seen as more common than a person described as a relaxed speaker.

H2: The anxiety scores given to the "typical" person will be higher than the theoretical midpoint of the scale. That is, on a 10-point scale, participants will tend to rate the typical person's anxiety as 6 or higher.

H3: Participants will tend to rate the average person's anxiety as higher than their own level of anxiety.

Method

Participants

One hundred eighty three University students participated in the study. Sixty percent of participants were female, 33.9% were male and 6.1% did not indicate their sex. Ninety percent of participants were between the ages of 18-21 ($N = 163$). The majority of participants (76%) were of European ancestry. Most participants (73.8%) had never taken an introductory communication course.

Materials and Procedure

This study involved a survey in which participants first rated how much PSA they believed the average person to possess on a Likert scale, ranging from 1 (absolutely no anxiety) to 10 (incredibly terrified). Participants also rated their own anxiety in public speaking situations on

the same scale. Participants then rated the percentage of people (0-100%) they thought were extremely anxious in public speaking situations, and the percentage of people who feel no PSA (see Appendix for wording of these measures).

Results

Our first hypothesis was supported. Respondents rated an extremely anxious public speaker ($M = 50.6\%$, $SD = 24.1\%$) as significantly more common than an extremely calm public speaker ($M = 22.7\%$, $SD = 17.2\%$), $t(182) = 13.1$, $p < .001$.

To test our second hypothesis, the anxiety ratings of a "typical" person were compared to the theoretical midpoint of the scale using a one-sample t-test. Given that a 10-point scale has no midpoint available to the respondents as a potential response (true neutral would be 5.5) we used the more conservative comparison value of 6. The mean rating given to a typical person ($M = 6.87$, $SD = 1.18$) was significantly higher than 6 on the scale, $t(182) = 9.97$, $p < .001$. This provides further evidence that people believe PSA is normative.

A non-parametric test was required to test our third hypothesis, because the variance of the self-ratings of anxiety (6.40) was over four times larger than the variance of the ratings given to the average person (1.39), indicating significantly different variances, $t(177) = 11.55$, $p < .001$. Results showed that 88.5% of participants rated the typical person as 6 or higher on the 10-point scale ($M = 6.87$), while only 65% of participants rated their own anxiety as 6 or higher ($M = 6.52$). A sign test reveals that this difference is significant, $z = -5.77$, $p < .001$, and suggests that the participants believed that they were less anxious than the average person. Moreover, there was a significant but weak correlation between anxiety ratings of a typical person and self-ratings of anxiety, $r(175) = .24$, $p < .01$, suggesting that ratings of the average person are only slightly influenced by personal levels of anxiety

GENERAL DISCUSSION

In study 1, we found that public speakers think that their feelings of anxiety are more apparent to the audience than is actually the case. Moreover, this phenomenon appears to be due to a process whereby people anchor in their own subjective experience of anxiety when estimating how anxious they appear to an audience. Further, higher levels of anxiety are associated with higher levels of perceived emotional transparency. A substantial minority of participants (36%), however, responded in a way contrary to the anchoring and adjustment model; these participants report that the audience notices more anxiety during their speech than is actually present.

Study 2 provides evidence that there is a social script wherein PSA is normative. When estimating the prevalence of PSA in the general population, people say that it is quite common to be extremely anxious (about 51%) and comparatively rare to be very calm (about 23%) when speaking in public. Moreover, ratings of the average person tended to be higher than both the theoretical midpoint of the scale and self-ratings of anxiety by participants in our sample. It is also surprising to note that, when participants were asked to rate the percentage of people who are extremely anxious when speaking in public, participants predicted just over 50% of people their age would experience anxiety so intense that "...their body shakes and they feel like they

might pass out." This suggests that the students in this sample perceive extreme PSA to be normative among people their age.

In Study 1 we noted that a sizable minority of speakers believe that the audience will see more anxiety than the speaker actually feels. This is a replication of a previous anomalous finding, suggesting that further theoretical and empirical refinement is required to fully explain how a social script might be integrated into the anchoring-adjustment heuristic. Savitsky and Gilovich, proposed that the anomalous finding in their study "...stems from the fact that nervousness is a widely acknowledged component of the public-speaking 'script' ..." (2003:620) and we find evidence to support this notion. The direction of adjustment might be affected by beliefs about normative base-rate information, rather than a concern for leakage of emotional cues. That is, a self-generated anchor might be affected by the accessibility of related information in memory: the PSA script. This seems plausible given that accessibility of information has been shown to affect the anchoring and adjustment process (Strack and Mussweiler 1997). With preliminary evidence of this pattern demonstrated, future research should examine *how* normative information is integrated with the illusion of transparency.

Though we have evidence that both the illusion of transparency and a social script regarding PSA exist, our methodology does not allow us to draw causal conclusions regarding the relationship between the two, nor to unpack the process of integrating the social script information with the anchoring-adjustment heuristic. However, we believe that this investigation provides a starting point into research covering new conceptual ground. An abundance of PSA research exists, but we have found nothing to date examining how broader social and consensual factors might influence one's level of anticipatory or situational anxiety. Future research could examine the mechanisms by which fear of speaking in public is passed along as normal social behaviour. PSA differentiates itself from other forms of anxiety in that it is seen as a normal experience at moderately high levels; indeed, experiencing no anxiety when speaking in public is more likely to be considered abnormal. Thus, we believe that future studies of PSA would benefit by the consideration of the broader social processes that contribute to its etiology.

REFERENCES

- Beatty, Michael. J. 1988. "Situational and Predispositional Correlates of Public Speaking Anxiety." *Communication Education* 37:28-39.
- Behnke, Ralph. R. 1987. "The Communication of Public Speaking Anxiety." *Communication Education* 36:138-141.
- Behnke, Ralph R., and Chris R. Sawyer. 2000. "Anticipatory Anxiety Patterns for Male and Female Public Speakers." *Communication Education* 49:187-196.
- , 2001. "Patterns of Psychological State Anxiety in Public Speaking as a Function of Anxiety Sensitivity." *Communication Quarterly* 49:84-94.

Gilovich, Thomas, Justin Kruger, and Victoria H. Medvec. 2002. "The Spotlight Effect Revisited: Overestimating the Manifest Variability of Our Actions and Appearance." *Journal of Experimental Social Psychology* 38:93-99.

Gilovich, Thomas, Victoria H. Medvec, and Kenneth Savitsky. 2000. "The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One's Own Actions and Appearance." *Journal of Personality and Social Psychology* 79:211-222.

Gilovich, Thomas, Kenneth Savitsky, and Victoria H. Medvec. 1998. "The Illusion of Transparency: Biased Assessments of Others' Ability to Read One's Emotional States." *Journal of Personality and Social Psychology* 75:332-346.

Gonsalvez Craig, J. and C. A. Suey. 2003. "Predictors of Subjective Anxiety During and Performance Disparagement After a Public Speaking Task." Pp. 83-87 in Proceedings of the 38th Annual conference of the Australian Psychological Society. Melbourne, Australia: The Australian Psychological Society.

Jussim, Lee, and Jacquelynne Eccles. 1995. "Naturalistic Studies of Interpersonal Expectancies." *Review of Personality and Social Psychology* 63:947-961

Leary, Mark R., and Robin M. Kowalski. 1995. *Social Anxiety*. New York: The Guilford Press.

MacIntyre, Peter D., and Kimly A. Thivierge. 1995. "The Effects of Audience Pleasantness, Audience Familiarity, and Speaking Contexts on Public Speaking Anxiety and Willingness to Speak." *Communication Quarterly* 43:456-466.

MacIntyre, Peter D., Kimly A. Thivierge, and J. Renee MacDonald. 1997. "The Effects of Audience Interest, Responsiveness and Evaluation on Public Speaking Anxiety and Related Variables." *Communication Research Reports* 14:157-168.

McCroskey, James C., John A. Daly, and Gail Sorensen. 1976. "Personality Correlates of Communication Apprehension: A Research Note." *Human Communication Research* 2:376-380.

McEwan, Kimberly L., and Gerald M. Devins. 1983. "Is Increased Arousal in Social Anxiety Noticed by Others?" *Journal of Abnormal Psychology* 92:417-421.

Motely, Mike T. 1991. "Public Speaking Anxiety Qua Performance Anxiety: A Revised Model and an Alternative Therapy." Pp. 85-104 in *Communication, Cognition and Anxiety*, edited by M. Booth-Butterfield. Newbury Park, CA: Sage.

Savitsky, Kenneth, and Thomas Gilovich. 2003. "The Illusion of Transparency and the Alleviation of Speech Anxiety." *Journal of Experimental Social Psychology* 39:618-625.

Snyder, Mark. 1984. "When Beliefs Create Reality." Pp. 247-305 in *Advances in Experimental Social Psychology*, vol. 18, edited by L. Berkowitz. New York: Academic Press.

Snyder, Mark, and Olivier Klein. 2005. "Construing and Constructing Others: On the Reality and the Generality of the Behavioral Confirmation Scenario." *Interaction Studies: Social Behaviour and Communication in Biological and Artificial Systems* 6:53-67.

Strack, Fritz, and Thomas Mussweiler. 1997. "Explaining the Enigmatic Anchoring Effect: Mechanisms of Selective Accessibility." *Journal of Personality and Social Psychology* 73:437-446.

Witt, Paul L., and Ralph R. Behnke. 2006. "Anticipatory Speech Anxiety as a Function of Public Speaking Assignment Type." *Communication Education* 55:167-177.

APPENDIX A: SURVEY INSTRUMENTS

Study 1 Questionnaires

Trait Public Speaking Anxiety

1. I have no fear giving a speech
2. Certain parts of my body feel very tense and rigid while giving a speech
3. I feel very relaxed while giving a speech
4. My thoughts become confused and jumbled when I am giving a speech
5. I face the prospect of giving a speech with confidence
6. While giving a speech I get so nervous I forget facts I really know

Situational Public Speaking Anxiety

1. I had no fear giving a speech
2. Certain parts of my body felt very tense and rigid while giving a speech
3. I felt very relaxed while giving a speech
4. My thoughts became confused and jumbled when I gave a speech
5. I faced the prospect of giving a speech with confidence
6. While giving a speech I got so nervous I forgot facts I really know

Audience Rating of Anxiety

1. The speaker had no fear giving a speech
2. Certain parts of the speaker's body felt very tense and rigid while giving a speech
3. The speaker felt very relaxed while giving a speech
4. The speaker's thoughts became confused and jumbled when he or she gave a speech
5. The speaker faced the prospect of giving a speech with confidence
6. While giving a speech the speaker got so nervous s/he forgot facts s/he really knew

Reflected Appraisal of Anxiety

(participants were instructed to respond according their perceptions of audience ratings of their speech)

1. The speaker had no fear giving a speech
2. Certain parts of the speaker's body felt very tense and rigid while giving a speech
3. The speaker felt very relaxed while giving a speech
4. The speaker's thoughts became confused and jumbled when he or she gave a speech
5. The speaker faced the prospect of giving a speech with confidence
6. While giving a speech the speaker got so nervous s/he forgot facts s/he really knew

Study 2 Questionnaire

1. How much anxiety do you believe the average person has when speaking in front of an audience?
2. How much anxiety do you have when speaking in front of an audience?
3. Imagine a person who feels intense anxiety speaking in front of a crowd, so much so that their body shakes and they feel like they might pass out when they speak in public. What percentage of people your age do you think would feel this way (write any number between 0% - 100%)?
4. Imagine a person who feels absolutely no anxiety when speaking in front of a crowd, and gets a great deal of enjoyment out of public speaking. What percentage of people your age do you think would feel this way (write any number between 0% - 100%)?

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