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The Price of Social Perception: Effects of Positive and Negative Feedback in Public and Private Spheres

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ABSTRACT

This study examined how feedback affects choice behavior in public and private spheres. Seventy-five undergraduate students (19 men, 56 women) participated. Two conditions were presented on a concurrent schedule of MIXED VR30-FR1. Under Condition 1, 5 points were awarded after completing the VR30. Following the FR1, 0-4 points were subtracted and participants received negative feedback. Under Condition 2, 1 point was awarded following completion of the VR30. Participants received an additional 1 point and positive feedback following the FR1. The private group wore headphones; the public group had feedback broadcasted in public. The presupposition that feedback in public would cause more responding in the second condition was not supported. There were significant differences between choice behavior in men and women.

Stimuli that signal success or failure are a common and continuous aspect of everyday life. They contribute to emotions (Gray, 1971; Ortony, Clore, & Collins, 1988) as well as influencing motivation, decision-making, and behavior (Atkinson, 1983; Grossberg & Gutowski, 1987). The amount of influence on choice-making behavior has been linked to cost (Ettenson & Coughlin, 1982; Frey, 1979), information source (Frey), the situational factor or environment (Endler, 1965), and individual and personality differences (Liverant & Scodel, 1960; van Oers, Klunder, & Drent, 2005). In short, the ability to evaluate one's self is a complex interaction of many different variables.

Traditionally, social perception was thought to be limited to people's knowledge of the world; however, research has shown that it may actually shape behavior (Ferguson & Bargh, 2004). Recent research in self-evaluation has been primarily concerned with an individual's cognitive and affective reaction to negative feedback (Rudawsky, Lundgren, & Grasha, 1999; Wofford & Goodwin, 1990). Behavioral aspects of negative feedback, particularly with regard to making risky and safe choices, have produced somewhat contradictory results (Endler, 1965; Buss, 1983; Schaubroek & Williams, 1993).

Often the underlying factor of how feedback is perceived and responded to is derived from the social situation of the decision-maker (Ferguson & Bargh); however, some studies have found that social situation has had no bearing on the choices made, and that instead familiarity with the task determines behavior (Ladouceur, Tourigny, & Mayrand, 1986). Studies in self-evaluation have shown that the regulatory event (positive or negative feedback) may be viewed by the participant as a "challenge, threat, or as

useful information” which then affects the choice they make following the feedback (Schaubroek & Williams). Fish and White (1979) found that the way in which feedback was perceived was related to the difficulty of the task. Some researchers have focused on how feedback affects motivation and have shown increases or decreases in response, which varied more by sex than social situation (Johnson & Helgeson, 2002; Lundgren, Sampson, & Cahoon, 1998; Roberts & Nolen-Hoeksema, 1989; Roberts, 1991; Roberts & Nolen-Hoeksema, 1994). Still others have found no difference between the motivation of males and females exposed to performance feedback (Shanab, Peterson, Dargahi, & Deroian, 1981; Vallerand & Reid, 1988).

A major point of contention in the research has been the actual effects of feedback on motivation (Deci, Koestner, & Ryan, 1999). In several studies, negative feedback was seen as inhibiting motivation (Derryberry, 1991; Goudas, Minardou, & Kotis, 2000). Others claimed that both positive and negative feedback increased motivation (Shanab, Peterson, Dargahi, & Deroian). Anderson and Rodin (1989) found that mild negative feedback actually increased motivation if the feedback was given in a private setting. Ilgen and Davis (2000) found negative feedback to be a necessary, but not sufficient condition to motivate behavior. Lazowski and Anderson (1990), following this same line of research, found that social perception was better perceived if communications were both private and contained negative disclosure. Guerin (1999) explained this phenomenon as a type of ‘social loafing’ in which individuals will maximize gain in socially unacceptable conditions due to a reduction in individual visibility. Cahoon (1965) found individuals more receptive to negative feedback in private situations over groups. Some researchers give a more behavioral explanation; that regardless of feedback, the cost and source were the determining factors in motivating behavior (Arkes, Herren, & Isen, 1988; Frey, 1979). This was supported by Roberts (1991) and Roberts and Nolen-Hoeksema (1994) who concluded that men and women differ in their understanding of the value of information that comes from others.

The following study attempted to address the effects of feedback in private and public spheres on choice to perform in an acceptable or unacceptable manner. Based on previous research it was hypothesized that positive feedback would lead to increased responding in the positive feedback condition, and decreased responding in the negative feedback condition. Additionally, a sex difference in response choice was expected based on how men and women perceive the feedback they receive.

METHOD

Participants

Seventy-five university students (56 women and 19 men, M age = 20.95 years, SD = 3.05 years) volunteered to participate in the study. The students were recruited from advanced level Psychology courses. The participants ranged in age from 18 to 38 years old. Volunteers received no monetary benefit; however, all were given extra credit in at least one course for their participation. All participants signed informed consent prior to the experiment and received full debriefing at the conclusion. The SDSU Institutional

Review Board approved this project, the investigator completed NIH OHRP training, and all participants were treated in accordance with APA ethical guidelines (American Psychological Association, 1992).

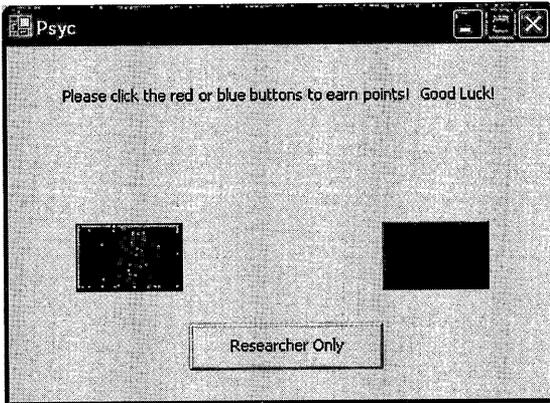


Figure 1. The computer program display as seen by the participants.

Apparatus

The apparatus, displayed in Figure 1, was a computer simulation designed to offer a choice between acceptable and unacceptable behavior. The simulation was comprised of a screen with a red and blue box; responses were measured by clicks of a mouse in one of the two boxes. The responses for each box were set on concurrent schedules of MIXED VR30-FR1. The red box was termed the risky/socially unacceptable choice. After completing the VR30 schedule in the red box the participant was awarded 5 points. On the very next click (FR1) 0-4 points were subtracted on a random schedule and the participant received negative verbal feedback. The feedback was a randomly chosen phrase from a list of three negative feedback phrases (“that was ridiculous”, “that is unacceptable”, or “what were you thinking”). Phrases were slightly modified from Hepler and Stabler’s (1979) discrimination study, in which the original phrases used were: “what’s the matter with you anyway”, “you’re stupid”, or “you’re a loser”, among others. After completion of the feedback, the participant was free to begin making choices again.

The blue box was termed the safe/socially acceptable box. After completing the VR30 schedule in the blue box the participant was awarded 1 point. On the very next click (FR1) an additional 1 point was added and the participant received positive verbal feedback. The feedback was a randomly chosen phrase from a list of three positive feedback phrases (“you’re doing great”, “keep up the good work”, or “nice job”). After completion of the feedback, the participant was free to begin making choices again. The program contained a button labeled ‘Researcher Only’. This button opened a new screen in which all data was recorded (i.e. number of responses, number of points earned, number of points subtracted, number of positive and negative comments). Participants were shown this button during the introduction and asked not to open it. In the event that

it was opened, participants were shown how to close it without losing the data. No data was lost during this study; however, 1 data set was excluded because the participant could not understand the comments through the headphones.

Design and Procedures

This experiment was highly analog, utilizing a between-groups design with the between factor of response rates in one of two conditions, acceptable or unacceptable, in a public or private environment. Each participant, regardless of group, was able to respond in either condition. The control group wore headphones to complete the task; this was termed the 'private sphere'. The experimental group did not wear headphones and had their choices broadcast through the computer speakers for all participants in the room to hear; this was termed the 'public sphere'. Differences in the number of responses in acceptable and unacceptable conditions by men and women both within and between the groups were also compared.

As participants entered the room they were asked to sit at a computer station that had a sheet of paper covering the monitor; "DO NOT REMOVE" was printed on the sheet. Following the introduction, completion of informed consent, and instruction on performing the task (see Appendix), the participants removed the sheet from the monitor and began completing the 10-minute computer task. All measurements were conducted in one of two university computer labs. The investigator recorded all data immediately following completion of the task. The entire experiment required approximately 20 minutes of the participant's time. Following the 10-minute simulation, participants recorded their age and sex on the data sheet; they then received a full debriefing. The debriefing explained that often choice is a function of each person's intrinsic qualities paired with environmental input. It was explained that the statements heard during the simulation were neither valid nor reliable, but were meant to exert external pressure in order to see how pressure affects choice in public or private situations.

Responses were compared in each group to assess the effects of feedback on response choice in acceptable and unacceptable conditions using a 2 x 2 factorial multiple analysis of variance (MANOVA). The two factors were sex and group and the multivariate was defined as the number of responses in the acceptable or unacceptable condition. Post-hoc univariate analysis examined the main effects and interaction effects of the two factors in relation to responses in the acceptable and unacceptable conditions respectively, as well as a t-test between unacceptable responses for men in the public and private groups.

RESULTS

Figure 2 depicts the mean number of responses for each group in the acceptable and unacceptable conditions. The private group had a mean of 590.41 (SD = 416.99) responses in the unacceptable condition, and a mean of 1319.22 (SD = 641.67) responses in the acceptable condition. The public group had a mean of 688.76 (SD = 411.39) responses in the unacceptable condition, and a mean of 1289.29 (SD = 531.77) responses in the acceptable condition.

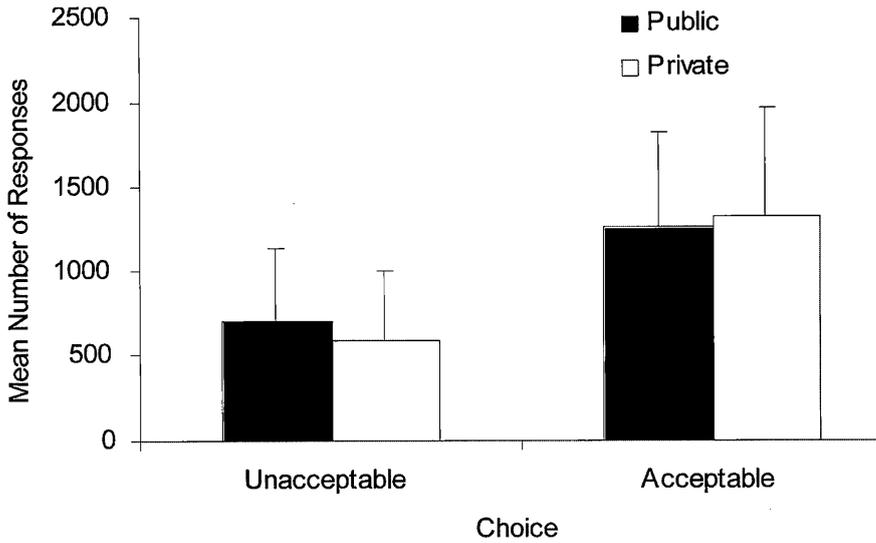


Figure 2. The mean responses (+/- SD) in the acceptable and unacceptable conditions for both the private and public groups.

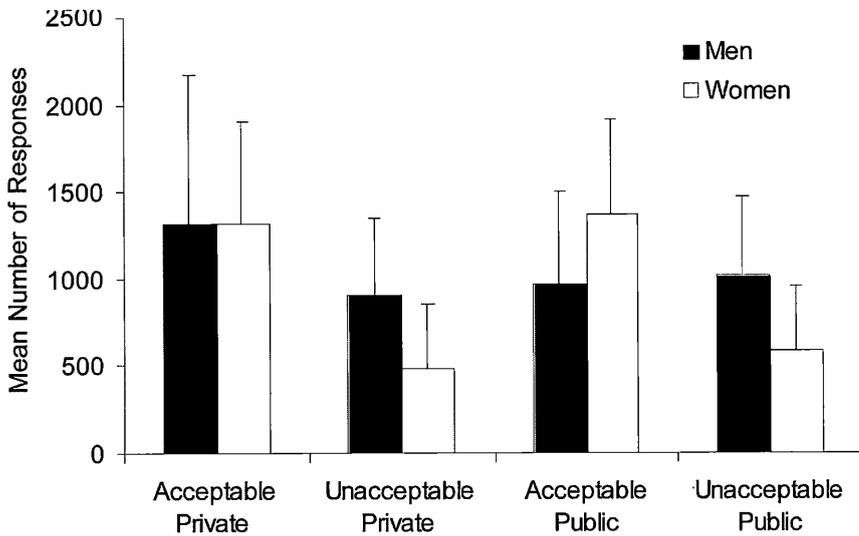


Figure 3. The mean number of responses (+/- SD) of men and women in the acceptable and unacceptable conditions for both public and private groups.

The mean (+/- SD) number of responses for men and women in each condition for the public and private groups are shown in Figure 3. Men had higher mean responses in the unacceptable condition for both public ($M = 1012.90$, $SD = 453.84$) and private ($M = 904.67$, $SD = 444.26$) groups. Women had higher mean responses in the acceptable condition for both groups. The mean number of responses across all conditions for men ($M = 1048.89$, $SD = 586.48$), was higher than that for women ($M = 939.46$, $SD = 619.57$).

Table 1. Results of 2 x 2 Factorial MANOVA Using Wilks' λ

Effect		Value	F	Hypothesis df	Error df	P-value
Sex	Wilks' Lambda	.81	8.16	2	70	.001
Group	Wilks' Lambda	.98	.73	2	70	.487
Sex * Group	Wilks' Lambda	.98	.77	2	70	.466

Table 1 shows the results of a 2 x 2 factorial MANOVA used to determine effects across the multivariate. There was a significant multivariate main effect of the factor of sex in acceptable or unacceptable response rate, Wilks' $\lambda = .81$, $F(2, 70) = 8.16$, $p = .001$. There was no significant multivariate main effects of the participant's group (public or private), Wilks' $\lambda = .98$, $F(2, 70) = .73$, $p = .487$; and there were no significant interaction effects, Wilks' $\lambda = .98$, $F(2, 70) = .77$, $p = .466$.

Table 2. Results of Post-hoc Univariate Analysis for the Factors of Sex and Group in the Multivariate of Response Condition

Source	Dependent Variable	SS	df	MS	F	P-value	Effect Size
Model	Unacceptable	34025382.74 ^a	4	8506345.69	56.43	.000	.761
	Acceptable	125668202 ^b	4	31417050.48	87.15	.000	.831
Sex	Unacceptable	2496046.01	1	2496046.01	16.56	.000	.189
	Acceptable	537173.04	1	537173.04	1.49	.226	.021
Group	Unacceptable	151998.66	1	151998.66	1.01	.319	.014
	Acceptable	327348.28	1	327348.28	.91	.344	.013
Sex * Group	Unacceptable	301.74	1	301.74	.00	.964	.000
	Acceptable	525137.97	1	525137.97	1.46	.231	.020
Error	Unacceptable	10702082.26	71	150733.55			
	Acceptable	25595188.09	71	360495.61			
Total	Unacceptable	44727465.00	75				
	Acceptable	151263390	75				

a. R Squared = .761 (Adjusted R Squared = .747)

b. R Squared = .831 (Adjusted R Squared = .821)

The results of post-hoc univariate analysis (ANOVAs) are shown in Table 2. Post-hoc univariate analysis of the factors found sex to be a significant factor in responses in

the unacceptable condition, $F(4, 71) = 16.56, p < .001$; but not the acceptable condition. The factor of group was not significant in either response condition. There were no significant interaction effects. Interestingly, men's mean response rate in the unacceptable condition decreased slightly from the public group to the private group; however, the decrease was not significant, $t(13) = -1.04, p = .32$.

DISCUSSION

The following study found no significant difference between public and private groups, supporting research by Ladouceur, Tourigny, & Mayrand (1986) that social situation has no bearing on choices made. The main differences found were between response choices of men and women. Men placed significantly more responses in the unacceptable condition supporting a multitude of recent findings (Johnson & Helgeson, 2002; Lundgren, Sampson, & Cahoon, 1998; Roberts & Nolen-Hoeksema, 1989; Roberts, 1991; Roberts & Nolen-Hoeksema, 1994). The exact reasons are unknown, but some researchers have offered possible explanations of this phenomenon.

Roberts and Nolen-Hoeksema (1994) hypothesized that men and women simply view the value of information differently. Schaubroek & Williams' (1993) proposition that feedback may be perceived as a "challenge, threat, or as useful information" which affects choices following the feedback, may be particularly salient for either men or women. In this study it appeared as if men viewed negative verbal feedback as a challenge causing increased responding in the unacceptable condition. Women appeared to view the same information as a threat and avoided the unacceptable condition.

The following study was subject to a number of possible confounds. It would be difficult to conclude from this study that men are more likely to engage in socially unacceptable behavior even though the data appears to point in that direction. As an analog study the true generalizability of these results outside the lab are unknown. Additionally, there were far fewer male than female participants. This may have led to the group means showing a propensity toward responses of females and added to a large variance in the mean of men's responses.

It is possible that given a larger sample of men there would be a significant decrease of responses in the unacceptable condition from the public to the private group. Following the same line as Roberts and Nolen-Hoeksema (1994), it may be that the voice, a computer generated voice used to provide feedback, was simply accepted as more valid by women than men. Finally, concerning motivation, the points offered for responses may not have represented a feasible reward, and as such would not cause the same motivation for all participants.

Future research could focus on more realistic or externally valid manipulations of socially acceptable and unacceptable choices in public or private environments. In order to address motivation, the points earned in each condition could be exchanged for a secondary reinforcer, possibly monetary. This may actually cause men and women to have equal response rates in the highest pay-off condition, supporting the behavioral

perspective of Arkes, Herren, and Isen (1988), and Sanders (1968). There are possible individual differences, such as locus of control, that were not considered for this study. Using a personality inventory to correlate various traits with response characteristics may also prove to be informative, and eliminate error of some of the individual differences in response rates. Finally, additional research is needed to establish a reliable measure of how men and women perceive the value of information. More specifically how each defines positive and negative feedback and the resulting behavior from that definition.

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