

# Individual Differences in the Social Facilitation Effect: A Review

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## Introduction

How does the presence of others affect behavior and performance? This question is explored by studies of social facilitation (SF). This literature has traditionally emphasized the characteristics of the task (simple or complex) that is being performed as a moderator of the effect (e.g., Zajonc, 1965). However, years of research revealed that this focus leaves most of the performance variance unaccounted for (Bond & Titus, 1983). Intuition, supported by reports of early scholars of this effect (e.g., Allport, 1924), suggests that individual differences could account for some of the variability.

The purpose of this review is to explore the role of personality in moderating the SF effect. To that aim, a quantitative analysis of past studies that measured personality was conducted, with a focus on three major traits – trait anxiety, self-esteem and extraversion. Following that, the present review shows how studying the SF effect from a personality perspective can further advance our understanding of this effect.

## ABSTRACT

How does the presence of others affect you? According to the social facilitation (SF) literature who you are is unimportant in answering this question. Individual differences are generally regarded in this literature as a complicating and disturbing factor. The present study wishes to challenge this approach. It shows the relative failure of the current paradigm in explaining the SF effect, and suggests a new paradigm that emphasizes the role of individual differences in moderating this effect. Quantitative review of the SF studies that have measured personality provides preliminary support to this approach. An individual differences perspective to the SF effect improves our ability to uncover the processes that mediate the effect, to integrate the different explanations for the effect under a single theoretical scheme, to broaden the scope of behavioral expressions investigated, and to overcome some of the persisting limitations of the field throughout the years.

## A New Perspective

### Background

- A need to adopt a new perspective in the study of the social facilitation effect emerged in response to the limitations of the present paradigm. The limiting characteristics of this paradigm are:
- A mismatch between arguments and evidence: A theoretical dispute on the nature of the mediation process (an internal state) versus an empirical emphasis on behavioral expressions.
  - Emphasis on unidimensional, achievement-oriented tasks as behavioral expressions.
  - A focus on task characteristics (simple/complex) as a sole moderating variable of the effect.
  - Meta-analytic evidence (Bond & Titus, 1983) showing that across all performance indicators most of the variance (more than 75%) remains unaccounted for.

### The result...

- Theoretical indetermination: Different explanations could not be tested against each other.
- Relatively little knowledge on reactions to social presence in terms of internal states.
- Relatively little knowledge on the effect of social presence on behavior in general.
- A need to explore other mediating variables.

### The New Perspective

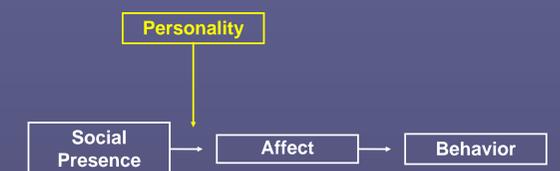


Figure 2. A new model for social facilitation with an emphasis on personality moderation, affective mediation and broad behavioral expressions

The basic premises for a new perspective on the social facilitation effect are as follows:

- Social presence represents an ambiguous yet significant stimuli.
- Individuals are predisposed to attribute positive and/or negative meaning to social presence, based on their personality traits.
- The traits of Extraversion and Neuroticism seem most likely to be associated with attribution of differential meaning to social presence:
  - Extraverts are predisposed to react with increased positive activation
  - Neurotics are predisposed to react with increased negative activation
- The activated emotional and motivational processes promote a wide variety of cognitive and behavioral manifestations.

### With a focus on individual differences we achieve...

- An ability to account for a larger variance in the reaction to social presence.
- Unification of the different theoretical explanations under a single theoretical account (positive/negative activation).
- A focus on the mediating process, in accordance with the theoretical arguments.
- A broadening in the scope of behaviors under investigation to all potential expressions of affective states.

## META-ANALYSES

### Method

#### Literature Search and inclusion criteria

- Studies were retrieved by searching online databases, reference lists of reviews on social facilitation, and reference lists of all collected studies.
- Inclusion criteria: The study reported on a measure of performance on a single task under two social settings: Alone and social presence. And, the study had a measure of personality.
- A total of 15 studies were found reporting on 24 effect sizes.

#### Data preparation and determination of effect size

- All effects were transformed into point-biserial correlation coefficients.
- Two kinds of correlations were calculated for each study:
  - Between *personality* and *performance*, for each social condition (alone, observer).
  - Between *social presence* and *performance*, for each personality group (e.g., extraverts, introverts).

### Trait Anxiety

- Six social facilitation experiments (with 10 effect-sizes) have measured individual differences in trait anxiety. The studies were published between 1970-1985.

Table 1. Correlation between trait anxiety and performance

Condition	N	K	W <sub>rpb</sub>	95%CI	Q
Alone	178	9	.00	--	4.93, <i>ns</i>
Observer	198	10	-.08	--	6.74, <i>ns</i>

Table 2. Correlation between social presence and performance

Group	N	K	W <sub>rpb</sub>	95%CI	Q
Low trait anxiety	198	10	-.07	-.09/-.05	10.02, <i>ns</i>
High trait anxiety	198	10	-.14	--	4.84, <i>ns</i>

Note. W<sub>rpb</sub> = Weighted point-biserial correlation coefficient; CI = Confidence interval based on true variance (i.e., excluding variance attributed to random sampling error); Q = Q statistic of homogeneity.

#### Summary

- Trait anxiety is negatively correlated with performance under social presence.
- High trait anxiety individuals are more reactive to social presence.
- However, the effect sizes are small.

### Self-Esteem

- Seven social facilitation experiments (with 8 effect-sizes) have measured individual differences in self-esteem. The studies were published between 1972-1997.

Table 3. Correlation between self-esteem and performance

Condition	N	K	W <sub>rpb</sub>	95%CI	Q
Alone	249	8	-.04	--	1.42, <i>ns</i>
Observer	244	8	.31	.24/.37	8.30, <i>ns</i>

Note. W<sub>rpb</sub> = Weighted point-biserial correlation coefficient; CI = Confidence interval based on true variance (i.e., excluding variance attributed to random sampling error); Q = Q statistic of homogeneity.

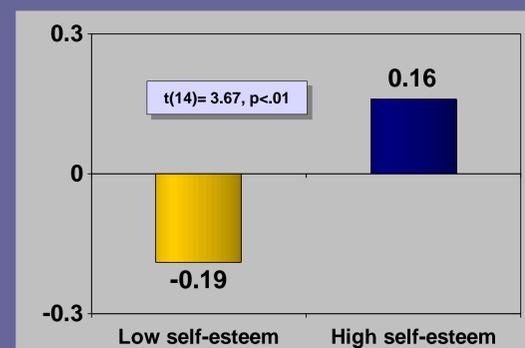


Figure 1. Correlation between social presence and performance (Alone=0; Social presence=1)

#### Summary

- Self-esteem is positively correlated with performance under social presence.
- The performance of high self-esteem individuals improves, whereas the performance of low self-esteem individuals impairs when observed.
- Despite the use of different tasks and manipulations across studies, the effects are homogeneous.

### Extraversion

- Three social facilitation experiments (with 4 effect-sizes) have measured individual differences in extraversion. The studies were published between 1964-2003.

Table 4. Correlation between extraversion and performance

Condition	N	K	W <sub>rpb</sub>	95%CI	Q
Alone	142	4	.04	-.42/.85	24.33, <i>p&lt;.001</i>
Observer	140	4	.19	--	3.59, <i>ns</i>

Table 5. Correlation between social presence and performance

Group	N	K	W <sub>rpb</sub>	95%CI	Q
Introverts	135	4	.05	-.75/.85	26.00, <i>p&lt;.001</i>
Extraverts	147	4	.19	-.27/.64	12.26, <i>p&lt;.01</i>

Note. W<sub>rpb</sub> = Weighted point-biserial correlation coefficient; CI = Confidence interval based on true variance (i.e., excluding variance attributed to random sampling error); Q = Q statistic of homogeneity.

#### Summary

- Extraversion is positively correlated with performance under social presence.
- Extraverts' performance improves when observed compared to their performance alone.
- However, the number of studies is small and most effects are heterogeneous.

### Conclusions

- Data support the hypothesis that personality moderates the social facilitation effect.
- When observed, some individuals (extraverted and high self-esteem) show performance improvement, whereas other individuals (high anxiety and low self-esteem) show performance impairment.
- However, the existing literature has several limitations:
  - Small overall number of studies
  - Small sample sizes
  - Absence of true alone control condition in most experiments



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