

# Pygmalion in the Gymnasium

The self-fulfilling prophecy is not confined to student academic performance but also applies to the workplace, therapy clinics, and even to athletics.

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Ever since Robert Merton proposed the concept of the self-fulfilling prophecy in 1948, social and behavioral scientists have provided support for the accuracy of his insight. Merton noted that when we expect certain behavior of others, we are likely to act in ways that make the expected behavior more likely to occur. Support for Merton's idea of the interpersonal self-fulfilling prophecy has ranged from the brilliantly anecdotal work of Gordon Allport to the more recent experimental work of numerous investigators. Allport (1950) applied the concept of interpersonal expectancies to an analysis of the causes of war. Nations expecting to go to war, he argued, are more likely to do so partly because of those expectations. More recent investigators have studied the effects of self-fulfilling prophecies in laboratories as well as in schools, clinics, and workplaces.

## Laboratory Studies of Self-Fulfilling Prophecies

The first experiments employing human subjects to produce self-fulfilling prophecies in the laboratory were conducted by Rosenthal and Fode (1963). Ten experimenters each showed a series of photographs of faces to about 20 beginning students of psychology. The experimenters, who were advanced students, asked their subjects to rate each photo on the degree of success or failure the

person in the photo had experienced. The photos had been chosen specifically to appear neutral.

The experimental manipulation was simple. Half the experimenters were told that their subjects had been selected especially as people who would perceive success, and the remaining experimenters were told that their subjects had been especially selected as people who would perceive failure. Actually, all subjects were assigned at random to their experimenters. Despite the fact that all experimenters read the same instructions to their subjects, those experimenters who expected perceptions of success got them; those who expected less successful perceptions received them. Later research suggested that the experimenters' tone of voice helped communicate their expectations to the subjects.

The same investigators also studied the effects of experimenters' expectations on the maze learning of laboratory rats. They found that when experimenters were led to expect better performance from rats that had allegedly been genetically bred for maze-brightness, these experimenters actually obtained better performance from their rats than did experimenters who had been led to expect poor performance from their allegedly maze-dull rats. Some evidence suggested that the experimenters who expected better performance handled their rats more frequently and more benignly than did the experimenters who expected poorer performance.

### **Pygmalion in the Classroom and Elsewhere**

If rats perform better when their experimenters expect them to perform better, then perhaps students will, too. To test this hypothesis, Rosenthal and Jacobson (1968) randomly selected about 20 percent of the children in 18 classrooms and alleged to their teachers that these particular children would intellectually bloom in the academic year ahead. The only difference between these special children and other students was in the minds of the teachers. Eight months later all the children were tested with a standard IQ test. Results showed that greater intellectual gains had been made by those children of whom more had been expected. Teachers had functioned as Pygmalsions for the specially designated Galateas in their classrooms.

Other investigators found the Pygmalion phenomenon in other contexts. Albert King (1971) studied Pygmalion as a work supervisor and Galateas as disadvantaged workers learning how to be health workers, pressing-machine operators, assemblers of electronic equipment, welders, and automobile mechanics. He found that when the supervisors had been led to expect superior work performance from their workers, that is what they got. In his research, Jeff Berman (1979) found that psychotherapists' expectations for their patients' therapeutic outcomes also tended to function as self-fulfilling prophecies. Finally, in a recent meta-analysis, Ro-

senthal and Rubin (1978) reported on the results of 345 studies of this phenomenon and showed that its occurrence was no longer in doubt.

### **Picking Pygmalsions**

For all the research on self-fulfilling prophecies, little was known about the kinds of persons who would be more or less susceptible to biasing information. Then, in 1979, Babad developed a procedure for predicting susceptibility to bias. Potential Pygmalsions were asked to score, on an "objective" measurement system, the drawings allegedly made by two children. One of these children was presented as being of high social status as indicated by name, ethnic group, parental education and occupation, school, area of residence, and so on. The other child was presented as being of low social status. The degree to which the allegedly high-status child's drawing was scored higher than the allegedly low-status child's drawing (corrected for the small true difference between the drawings) defined the susceptibility to biasing information.

In further research, Babad found high-bias people to be generally more dogmatic or authoritarian than low-bias people. Pushing the research further, Babad and Inbar (1981) found that high-bias physical education teachers-in-training were more autocratic and more distant in their classroom interactions than were the low-bias teachers-in-training. High-bias teachers showed no insight into their behavior; they did not report

themselves as being any more dogmatic than their low-bias colleagues.

In addition, Babad, Inbar, and Rosenthal (1982b) found important differences in the evaluation behavior of high- and low-bias teachers. When the essentially unbiased teachers were asked to list those students of whom they expected the most and the least, only one variable predicted group assignment: students' grades in physical education. When the high-bias teachers were asked to make the same judgments, their selections were predictable not only from their students' physical education grades but from their students' socioeconomic status, quality of clothing, and physical attractiveness. Thus, these high-bias teachers expected better performance from students who not only had performed better in the past, but who were of higher social status and who were more physically attractive.

### **Galatea and the Golem: Meeting in the Gym**

In this new study, Babad, Inbar, and Rosenthal (1982a) investigated how high-bias and low-bias teachers behaved toward children for whom they already had high expectations, and how they behaved toward children who were selected at random but who were alleged to their teachers to have special potential for gains in physical performance. It was also possible in this study to determine the effects of teachers' expectations on students' actual physical performance.

**Figure 1. Good-Teacher Behavior by Teachers' Bias and Expectancy Condition (Units are in standard deviation form)**

Expectancy	Teachers' Bias		Mean
	Low	High	
Nominated High	+ .59	+ .39	+ .49
Nominated Low	+ .20	- 2.16	- .98
Manipulated High	+ .39	+ .62	+ .50
Mean	+ .39	- .38	+ .01

**Figure 2. Students' Overall Athletic Performance by Teachers' Bias and Expectancy Condition (Units are in standard deviation form)**

Expectancy	Teachers' Bias		Mean
	Low	High	
Nominated High	-.05	+ .43	+ .19
Nominated Low	-.09	-.57	-.33
Manipulated High	+ .07	+ .21	+ .14
Mean	-.02	+ .02	.00

In the Greek myth, Pygmalion's love for the statue he sculpted brought Galatea to life; these positive effects were contrasted by Babad with the Hasidic myth of the Golem, in which a mechanical creature is brought to life by its creator. The Golem develops into a monster, runs amok, and must be destroyed. In this study we were able to study both the Pygmalion-Galatea effect and the Golem effect. Teachers treating their low-expectancy students in an especially negative way would clarify the mediation of Pygmalion-Galatea effects. Teachers treating their high-expectancy students in an especially positive way would clarify the mediation of Golem effects. Both types of effects would be examined separately for the high-bias and low-bias teachers.

**Method.** Twenty-six physical education teachers were observed while interacting with 202 high school students. Half the teachers and half the students were of each gender; female teachers taught female students while male teachers taught male students. Of the 26 teachers, 15 were selected for their high degree of bias, and 11 were selected for showing essentially no bias in their scoring of the standard drawings.

Teachers were observed as they interacted with three types of students: (1) students they felt had unusually high potential for physical performance; (2) students they felt had unusually low potential for physical performance; and (3) students, selected at random, who were alleged (to the teachers) to show unusually good physical performance.

Teachers' behavior was measured on four variables by means of observers' ratings: nondogmatic, responsive, criticizing, or friendly.

Students' physical performance was measured by number of sit-ups (for girls) or push-ups (for boys), distance jumped in centimeters, and speed of running in moving blocks from one point to another.

**Results.** Because the results of the observations were so homogeneous for the four variables, they were combined into a single variable of overall good-teacher behavior. The unbiased teachers treated all three groups of students essentially alike. The high-bias teachers, however, while treating the two groups of high expectancy students just as well as did the unbiased teachers, treated the students for whom they held low expectations dramatically worse than they treated the other students (see Figure 1).

The results of the students' physical performance were also quite homogeneous for the three measures employed and closely parallel to those obtained for teacher behavior. Unbiased teachers obtained similar performance from all three groups of students. The high-bias teachers, however, tended to obtain noticeably better athletic performance from students from whom they expected better performance, and worse athletic performance from students from whom they expected worse performance (see Figure 2). Additional statistical analyses showed that, for all teachers combined, those students who had been alleged to their teachers to have special potential for good physical performance performed better physically than their prior actual physical education performance would have predicted.

There was a tendency for the results of the students' athletic performance to be most clear for sit-ups or push-ups, somewhat less clear for running speed, and least clear for the distance jump. This patterning is reasonable and corresponds to the degree of interaction between teacher and student. Sit-ups and push-ups take longest to perform, allowing continuous interaction between teacher and student, which could influence the student's performance. The running task takes less time but still permits the teacher to interact with the student. Jumping, on the other hand, is an all-at-once performance, and the teacher cannot easily affect the student after the jump has begun.

## Conclusion

On the basis of the evidence, we can draw four conclusions.

1. Teachers tend to treat more favorably and obtain superior performance from students for whom they have more favorable expectations. Teachers tend to treat less favorably and obtain inferior performance from students for whom they have less favorable expectations.

2. These effects of interpersonal expectations occur not only in classrooms, clinics, laboratories, and workshops, but in gymnasiums as well. Athletic performance, no less than intellectual and other performance, can be affected by others' expectations.

3. The evidence suggests that these effects of interpersonal expectation are brought about partly by the ways in which expecters treat their Galateas or Golems.

4. Not all teachers are equally susceptible to the biasing effects of interpersonal expectations. Indeed, it now appears possible to tell beforehand which teachers are more likely to contribute to the development of Galateas and Golems. Perhaps such knowledge will help us someday to increase the number of Galateas and to decrease the number of Golems. □

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