

# When You're Hot, You're Hot! Warm-Cold Effects in First Impressions of Persons and Teaching Effectiveness

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We examined the effects of Kelley's "warm/cold" manipulation on first impressions of persons and teaching ability. A stimulus person, posing as a visiting professor, gave a "neutral" lecture to 240 university students. Before the stimulus person appeared, half of the subjects received information that he was a rather warm person, whereas the other half was told that he was a rather cold person. In turn, half of each of these groups was informed that he was a professor of physical education and the other half that he was a professor of social psychology. A 2 (warm/cold condition)  $\times$  2 (discipline of the stimulus-person)  $\times$  2 (subjects' sex) multivariate analysis of variance revealed that (a) subjects who were led to believe that the stimulus person was warm perceived him as a more effective teacher and as less unpleasant, more sociable, less irritable, less ruthless, more humorous, less formal, and more humane than did subjects who were told that he was a cold person; and (b) neither the disciplinary status of the stimulus person nor the sex of the subjects had an effect on subjects' perception of the lecturer. Results were discussed in regard to halo, context, and status effects.

Forty years ago, Asch (1946) demonstrated that he could alter subjects' descriptions of the personality of a hypothetical person by simply interchanging adjectives representing central qualities such as "warm" and "cold." He also found, however, that the inclusion of terms representing peripheral qualities such as "polite" or "blunt" did not significantly affect subjects' impressions of the perceived personality of a hypothetical person.

Kelley (1950) extended Asch's experimental work by showing that the warm/cold manipulation influenced subjects' impressions of a real person whom they actually encountered. Although the stimulus person, a man posing as a guest lecturer, was introduced in a neutral manner, subjects later received one of two kinds of notes about him. In one note, the stimulus person was described as being "rather warm," whereas in the other he was described as being "rather cold." After the random distribution of this preinformation, the stimulus person appeared and led a 20-min discussion. The verbal interaction of the subjects with the instructor was recorded. After each discussion, subjects were asked to write free descriptions of the stimulus person and to rate his personality on 15 predetermined scales. Like Asch, Kelley discovered that the attribution of a central quality such as warmth significantly influenced subjects' total impression of a person. For example, he found that subjects who were told that the stimulus person was warm consistently gave him more favorable ratings on several personal attributes than did

subjects who were told that he was cold. In addition, he discovered that 56% of the "warm" subjects, but only 32% of the "cold" subjects, actively participated in the discussion sessions with the stimulus person.

This early work of Asch (1946) and Kelley (1950) stimulated considerable research in the area of person perception. Numerous characteristics of the perceiver (e.g., personality, emotional state, and social characteristics) and of the perceived (e.g., age, marital status, race, sex) have been studied (see Tajfel, 1981, for a review.) However, of major interest has been the process by which information about others is used to form an impression of them. Although Anderson's (1974) weighted-average model and Cantor and Mischel's (1979) "prototypes" are more sophisticated views of impression formation, neither contradicts the central trait notion of Asch and Kelly.

Our study was designed primarily to determine whether Kelley's (1950) warm/cold effect could be replicated 35 years later in a classroom situation. Secondary objectives were to modify and extend Kelley's investigation in selected ways. First, because Kelley only indirectly examined teaching performance, we attempted to ascertain whether warm/cold manipulation would produce a halo effect that influenced subjects' impression of an instructor's teaching ability. Second, past researchers (e.g., Wilson, 1968) have shown that the perceived status of an instructor influences subjects' impressions of a teacher, and physical education is often perceived as being less prestigious in the academic community than other more "traditional" disciplines (e.g., Seater & Jacobson, 1976). We therefore made an effort to discover whether the labels *physical education professor* and *social psychology professor* would differentially influence subjects' impressions of an instructor's central personality traits, peripheral personality traits, and teaching performance. Third, in previous research regarding the warm/cold variable, investigators have ignored

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the sex of subjects in data analyses (e.g., Kelley studied only male students), and there is evidence that male and female students do evaluate college professors differently (e.g., Lombardo & Tocci, 1979); therefore, we made efforts to determine whether preinformation about an instructor differentially influences perceptions of male and female subjects.

### Method

The first author served as the stimulus person, posing as a guest lecturer in a Social Science of Sport class at a Canadian university. There were 270 first- and second-year physical education majors enrolled in the class. The responses of 30 subjects were excluded in data treatment because they suspected that an experiment was being conducted. Thus reported results are based on data obtained from 140 male and 100 female subjects. A teaching assistant orally introduced the stimulus person to the class as follows:

Dr. . . . is unable to be with us today; however, he has arranged for a guest lecturer, Professor Jim Wilson. Dr. . . . has prepared a brief biographical sketch of our visitor along with an evaluation that we would like you to complete at the end of the lecture.

I'll distribute the forms now so that you can read over the information before Professor Wilson arrives. Please read these to yourselves and don't talk about them with others until the class is over as we do not want to distract our visitor.

After this introduction, subjects were randomly given one of four versions of a form as follows:

P.E. xxxyyy class:

I regret that I will be unable to be with you today; however, I have arranged for a substitute instructor.

Professor Jim Wilson is presently teaching Physical Education [or Social Psychology] courses at the University of \_\_\_\_\_. Dr. Wilson has several years of teaching experience since obtaining his doctoral degree in Physical Education [or Social Psychology]. People who know Dr. Wilson consider him to be a rather cold [or warm] person, industrious, critical, practical, and determined.

I would like to get your impression of Dr. Wilson, therefore, at the end of the lecture I'd like you to take a few minutes to complete the evaluation below. Please be completely honest and understand that what you put down will not be used against him. We are simply interested in how various classes react to various instructors. Thank you.

Professor . . . .

One half of the class received information that the guest lecturer was educated in and taught physical education; the other half was told that he taught and was educated in social psychology. To half of each of these groups, this stimulus person was described as "warm," and to the other half of each group he was described as "cold." The guest lecturer was unaware of which persons received which stimulus material.

After the oral introduction and receipt of preinformation, a second teaching assistant ushered the stimulus person into the auditorium. The stimulus person then gave a neutral, informative, 40-min lecture titled "The Compatibility of Sport and Education." At the conclusion of the lecture, the stimulus person and one teaching assistant left the auditorium, and the other teaching assistant remained with the subjects. The subjects then evaluated the stimulus person's personality and teaching ability by responding to seventeen 7-point Likert scales of bipolar adjectives. Twelve of these items were drawn from Kelley's (1950) original study. Subjects were encouraged

to use the reverse side of their evaluation forms to make additional comments regarding the stimulus person's personality and/or teaching ability.

## Results

### *Replication of Kelley's Study*

In Table 1 we offer a comparison on the influence of the warm/cold manipulation of first impressions in this study with that of Kelley's (1950) research. It is difficult to compare the average ratings given to each of the twelve similar items because we used a 7-point scale, whereas Kelley used a 15-point scale. Nevertheless, the ratings for each of the items are in the same direction in both studies.

### *Perceptions of Personality*

The mean scores for the warm and cold manipulation for each of the 10 indices of personality are shown in Table 1. The multivariate analysis of variance (MANOVA) performed on these scores revealed that the warm/cold manipulation had a significant effect,  $F(10, 226) = 5.45, p < .001$ , whereas the manipulations of disciplinary status and sex of subjects had nonsignificant effects. More specifically, in regard to the significant effect of the warm/cold manipulation, those subjects who were led to believe that the stimulus person was warm perceived him as less unpleasant, more sociable, less irritable, less ruthless, more humorous, less formal, and more humane than did those subjects who were told that he was a cold person.

### *Perceptions of Teaching Ability*

The mean scores for the warm and cold manipulations for each of the six indices of teaching ability are also shown in Table 1. As shown, the warmth manipulation had a significant effect. When these indicators were considered together in a MANOVA, the significant effect of manipulation was verified,  $F(6, 234) = 2.58, p < .01$ . When the indicators were examined separately, the mean scores for four of the six items were significantly different for the two groups. Subjects who were led to believe that the stimulus person was warm perceived him as more intelligent, more interesting, more considerate of the class, and more knowledgeable of his material than the instructor who was perceived as being cold. The manipulations of disciplinary status and sex of the subjects had nonsignificant effects on teaching ability.

## Discussion

Our primary purpose was to replicate Kelley's (1950) investigation of the warm/cold variable in first impressions of persons in classroom situations. Our results strongly support Kelley's earlier findings in three ways. First, they confirm his findings that the attribution of the central quality of warmth to a stimulus person greatly influences subjects' overall impressions of his or her personality. Second, they lend support to Kelley's observations that the warm/cold manipula-

Table 1  
*Mean Ratings and Standard Deviations Given to a Stimulus Person Designated Warm or Cold*

Low anchor	High anchor	Kelley (1950)		This study			
		Warm <sup>a</sup>	Cold <sup>b</sup>	Warm <sup>c</sup>		Cold <sup>d</sup>	
				<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Item: Personality							
Unpleasant	Pleasant	—	—	6.42 <sub>a</sub>	0.98	5.79 <sub>a</sub>	1.21
Sociable	Unsociable	5.6 <sub>a</sub>	10.4 <sub>a</sub>	2.14 <sub>a</sub>	1.07	2.78 <sub>a</sub>	1.26
Strong personality	Weak personality	—	—	1.84 <sub>b</sub>	0.95	2.11 <sub>b</sub>	0.97
Irritable	Good natured	12.0 <sub>b</sub>	9.4 <sub>b</sub>	6.06 <sub>a</sub>	1.38	5.42 <sub>a</sub>	1.24
Ruthless	Humane	11.0 <sub>b</sub>	8.6 <sub>b</sub>	5.53 <sub>a</sub>	1.25	5.14 <sub>a</sub>	1.21
Formal	Informal	9.6 <sub>a</sub>	6.3 <sub>a</sub>	4.17 <sub>a</sub>	1.45	3.10 <sub>a</sub>	1.57
Proud	Modest	9.4	10.6	3.71	1.23	3.82	1.16
Self-assured	Uncertain of himself	8.4	9.1	1.78	0.81	1.77	0.91
Humorous	Humorless	8.3 <sub>a</sub>	11.7 <sub>a</sub>	2.81 <sub>a</sub>	1.25	3.49 <sub>a</sub>	1.40
Dominant	Submissive	14.5	13.2	2.66	1.16	2.55	1.07
Item: Teaching ability							
Knows his material	Doesn't know his material	3.5	4.6	1.44 <sub>b</sub>	0.66	1.65 <sub>b</sub>	0.76
Considerate of class	Self-centered	6.3 <sub>a</sub>	9.6 <sub>a</sub>	1.90 <sub>a</sub>	1.03	2.24 <sub>a</sub>	1.09
Organized	Not organized	—	—	1.77	0.79	1.73	0.86
Intelligent	Unintelligent	4.8	5.1	1.59 <sub>b</sub>	0.76	1.84 <sub>b</sub>	0.83
Expresses himself well	Difficulty in communicating	—	—	2.09	1.20	2.10	1.11
Interesting	Boring	—	—	2.05 <sub>b</sub>	1.17	2.46 <sub>b</sub>	1.26
Item: Not categorized							
Will go far	Will not go far	4.2	5.8	2.16	0.99	2.32	1.29

Note. A dash indicates "not determined." Means with subscript *a* are significantly different at  $p < .01$ ; means with subscript *b* are significantly different at  $p < .05$ .

<sup>a</sup>  $n = 27$ . <sup>b</sup>  $n = 29$ . <sup>c</sup>  $n = 118$ . <sup>d</sup>  $n = 122$ .

tion does not influence all variables equally. Kelley stated that "The size of this effect seems to depend upon the closeness of relation between the specific dimension of any given rating scale and the central quality of 'warmth' or 'coldness'" (p. 435). Thus in our study, as well as in those by Asch (1946) and Kelley, being sociable, considerate, and humorous were positively related to warmth; being ruthless and irritable were negatively related to warmth; and being proud, self-assured, and dominant were not at all related to warmth. Third, our results, like Kelley's findings, show that the warm/cold manipulation influences perceptions of a stimulus person's teaching ability. The fit of the findings of the two studies is less direct in the latter case. Kelley found that student subjects had greater rates of interaction with a warm stimulus person posing as a guest lecturer. Our results show that student subjects gave higher ratings to indices of teaching ability to a warm stimulus person posing as a guest lecturer.

Discovering that the warm/cold manipulation affects the ratings of some characteristics more than others supports Kelley's (1950) contention that the effect "cannot be explained altogether on the basis of a simple halo effect" (p. 435). The pattern of the differential effects across the 12 common scales is similar to those found by Asch (1946) and Kelley (1950). This lends credence to Kelley's explanation of how the effect depends on the closeness of the rated dimension to the quality of warmth. It is noteworthy that teaching

abilities were related to warmth, whereas certain personality characteristics were not. By being perceived as a warm individual, a teacher can influence students' ratings not only of his or her personality, but also of his or her teaching abilities. This has considerable implications within education. In view of the major role that teacher evaluations play in universities in regard to tenure and promotion, the findings suggest that if instructors want to "get ahead," they should present themselves as "warm." Student ratings of professors can lead to student expectations for these instructors. Feldman and Prohaska (1979) demonstrated that such expectations are communicated to the teachers and, in turn, influence the teachers' attitudes and behaviors.

Those findings of ours that do not parallel those of Kelley (1950) support Mensh and Wishner's (1947) notion that the strength of the effect of the warm/cold manipulation varies according to its context. For example, in our study formality was not related to warmth, whereas it was in Kelley's investigation. Also, Kelley's subjects rated his instructor after a 20-min discussion period. Discussion classes vary greatly in formality, and often their success depends on creating the proper atmosphere (degree of formality). In contrast, lectures do not vary much in this regard; nor are they dependent on this quality for success. We also demonstrated context effects by the fact that knowledge of material and intelligence were influenced by the warmth manipulation, whereas they were

not in Kelley's experiment. It is usually much easier and more necessary for an instructor to demonstrate knowledge and intelligence in a lecture than it is in a discussion. Success in a discussion often more depends on how involved the group members become.

We found that the manipulation of the disciplinary status of the stimulus person in our study had no significant effect. It is possible that physical education professors were being rated as highly as social psychology professors because the raters were physical education students. To test this hypothesis, we replicated this study in a first-year psychology class involving 46 students of similar age and sex. Results of this second study paralleled those of the first. Regardless of their own discipline, students do not seem to perceive physical education as any less prestigious than social psychology. Perhaps differences may have occurred if the one lecturer was seen as being from the field of medicine, whereas the other was from the field of physical education.

Because social psychological researchers in related areas have found significant differences in the selected responses of male and female subjects, a secondary objective of our study was to analyze whether men rate the personality and teaching abilities of a male lecturer differently than do women. No significant differences were found. It may be that both male and female students are accustomed to male instructors at the university. Perhaps the sex of the subjects may have had an influence on the ratings had a female lecturer posed as a guest.

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### Call for Nominations for Editor of *JEP: Learning, Memory, and Cognition*

The Publications and Communications Board has opened nominations for the editorship of the *Journal of Experimental Psychology: Learning, Memory, and Cognition* for the years 1990-1995. Henry L. Roediger III is the incumbent editor. Candidates must be members of APA and should be available to start receiving manuscripts in early 1989 to prepare for issues published in 1990. Please note that the P&C Board encourages more participation by women and ethnic minority men and women in the publication process and would particularly welcome such nominees. To nominate candidates, prepare a statement of one page or less in support of each candidate. Submit nominations no later than April 4, 1988, to

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