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## The effect of competition on individuating processes in impression formation.

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THE EFFECT OF COMPETITION ON INDIVIDUATING  
PROCESSES IN IMPRESSION FORMATION

A Thesis Presented

by

JANET B. RUSCHER

Submitted to the Graduate School of the  
University of Massachusetts in partial fulfillment  
of the requirements for the degree of

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Department of Psychology


THE EFFECT OF COMPETITION ON INDIVIDUATING  
PROCESSES IN IMPRESSION FORMATION


A Thesis Presented

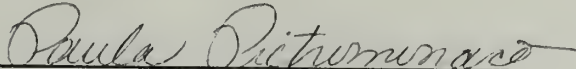
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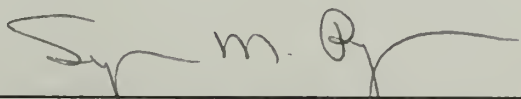
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ABSTRACT

THE EFFECT OF COMPETITION ON INDIVIDUATING  
PROCESSES IN IMPRESSION FORMATION

FEBRUARY 1989

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Two experiments investigated the extent to which competitively interdependent individuals attend to opponent attributes that are inconsistent or consistent with their expectations. Competitors were predicted to increase attention to expectancy-inconsistent attributes that could potentially enhance prediction of their opponent's behavior. Because such information is novel and unexpected, it can lead individuals to make inferences about a person's underlying disposition, which again potentially enhances perceptions of prediction. In contrast, expectancy-consistent attributes are essentially redundant with the expectancy, and offer little to competitors in this regard. As a result of attending to expectancy-inconsistent attributes, and incorporating them into impressions, competitors were therefore expected to form impressions based less on prior expectancies and more on the attribute information available.

In each experiment, subjects expected to compete or not compete with a fictitious fellow subject who was portrayed as competent or incompetent at performing a creative task. Subjects commented into a tape-recorder about the fictitious person's attributes, some of which were inconsistent and some of which were consistent with prior

expectations. In Experiment 2, subjects also read about some attributes of the fictitious person that were irrelevant to the task.

Results of both experiments supported predictions; relative to noncompetitors, competitors increased attention to expectancy-inconsistent information. Moreover, when commenting about inconsistent information, competitors drew more dispositional inferences than did noncompetitors, suggesting that competitors' increased attention was indeed for the purpose of increasing perceptions of prediction and control. Finally, competitors' resulting impressions of the target person were more varied than noncompetitors' impressions, indicating that their impressions were based less on prior expectancies and more on the attributes.

Findings are discussed in terms of the differences between intergroup and interpersonal competition, as well as the general implications of interpersonal competition for undercutting expectancy-based impressions in favor of more attribute-based impressions.

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## CHAPTER 1

### INTRODUCTION

Most of us can recollect, at least once in our lives, sizing up and being sized up by a rival with whom we competed. In various domains, people are frequently enjoined to know their opponents well, by appraising strengths, weaknesses, and strategies. Indeed, media hype on this phenomenon abounds. Witness the extensive media coverage of two top Olympic contenders. On an intuitive level, and from our own experience, we find it inconceivable that their impressions could be based simply on national stereotypes; if anything, we expect competitors' impressions to be extremely idiosyncratic as a result of having regarded each other so intently. While sizing up the opposition seems almost too obvious on the intuitive level, research on competition paints a markedly different picture of the impressions competitors likely form about one another.

#### Competition Between Groups

Abundant research (e.g. regarding school desegregation) has demonstrated that, when certain conditions are met, cooperative interactions between groups and between individuals result in more positive, mutually beneficial contact than result from nondependent or competitive encounters (see Hewstone & Brown, 1986; Katz, 1976; Johnson & Johnson, 1975; Turner & Giles, 1981 for reviews).<sup>^</sup> Rather than perceiving individuals as simply members of the category to which they belong, cooperating individuals come to appreciate out-group members as unique individuals.\* As a consequence of cooperative contact, out-group members are chosen as playmates (Johnson, Johnson,

& Maruyama, 1984), and are construed as more similar to the self (Trew, 1986).

In sharp contrast, competition apparently enhances the use of stereotypes, and promotes mutual distrust. For example, the classic Robber's Cave experiment (Sherif, Harvey, White, Hood, & Sherif, 1961) demonstrated that competition prompted stereotyping of the out-group, and led to the perception of out-group members as homogeneous and unlikable. Similarly, when different groups are exposed to each other naturally, competition has comparable effects. For example, in classrooms composed of several ethnic groups, or comprising both handicapped and non-handicapped students, Johnson et al. (1984) found that fewer cross-ethnic and cross-handicapped interactions occurred at free time when competitive rather than nondependent or cooperative goal structures were in effect. These findings imply that individuals in competitive situations regard those with whom they avoid interaction as members of an out-group, who conform to a particular stereotype. That is, competitive goal structures apparently inhibit people from perceiving others as individuals, but instead facilitate the perception of others as members of a category.

How can the contradiction between our common-sense experience of sizing up competitors as individuals and the desegregation research implying stereotyping is encouraged by competitive contact be resolved? Rather than striving to know the opposition well by forming idiosyncratic impressions, people in competition seem to use prior expectancies and stereotypes to understand their opponents. Even within the empirical literature, there are apparent contradictions. In a recent study, Judd and Park (1988) discovered that competing

Individuals consider out-group members to be more homogeneous than in-group members, confirming the contact literature. However, they also found that memory recall for specific out-group members is remarkably good. Of course, memory for idiosyncratic information does not establish that individuals formed nonstereotypical impressions; subjects may have simply attended to and recalled information consistent with their expectations (cf. Snyder & Uranowitz, 1978). Still, insofar as individuals retained some idiosyncratic information about out-group members in memory, Judd and Park's findings suggest that individuals at least attend to people with whom they are competing, and therefore have the potential to form individuated impressions.

#### Interdependence

Competitors' potential to form individuated impressions of one another likely stems from their interdependence upon each other. Competitors' outcomes are interlinked such that the two competitors' goal attainments are negatively correlated; the success of one necessitates the failure of the other (Deutsch, 1973). When interdependent on another person, individuals will increase attention to the other's attributes that contain potentially individuating information (Erber & Fiske, 1984; Neuberg & Fiske, 1987). By so doing, individuals tend away from impressions based primarily on their prior expectancies; instead their impressions reflect the other's attributes (Fiske & Neuberg, in press). In contrast, in nondependent situations, when the other person is of little motivational relevance, a prior expectancy generally serves as the primary basis for perceivers' impressions of the other person, rather than that person's



individual attributes (Fiske & Neuberg, in press). From the stance of interdependence theory (Kelley & Thibaut, 1978), then, competitors should not base their impressions on prior expectancies, which is exactly what research on group competition insists they do.

One resolution of the seeming contradiction between the contact literature and the predictions of interdependence theory is that perhaps competition per se does not encourage expectancy-based impressions, but rather competition between groups. Although cooperative interdependence between individuals and between groups facilitates individuation, and although competition between groups apparently promotes stereotyping, the extent to which members of a competing dyad adhere to prior expectancies rather than individuating each other remains an empirical question. It is this question that the current investigation is designed to address. If members of a competing dyad attend to each other's individual attributes, integrating this information into their initial expectancies, they cease to base their impressions mainly on those expectancies. This investigation focuses primarily on the means by which competitors' individuated impressions may form (i.e. attention), and secondarily considers a subsequent outcome of attention (i.e. resulting impressions).

#### Attention to Inconsistent Information

Across a variety of situations, interdependent individuals are known to increase attention to one another (Berscheid, Graziano, Monson, & Dermer, 1976; Erber & Fiske, 1984; Neuberg & Fiske, 1987). Such attention makes individuation possible (Fiske & Neuberg, in press). However, what do individuals hope to gain by attention? To

the extent that individuals seek to predict and control their outcomes (Kelly, 1955), interdependent individuals should be motivated to seize opportunities that potentially maximize their ability to do so. To a certain degree, an interdependent person's likelihood of success depends upon the other person's characteristics, idiosyncracies, and behaviors. For interdependent individuals, then, attention to one another's individual attributes is a viable way to increase a sense of prediction and control in the situation.

Increased attention across the board would hardly be adaptive; more likely, competitors selectively choose among various types of information. Investigating this in a cooperatively interdependent situation, Erber and Fiske (1984) demonstrated that although interdependent and nondependent individuals paid equal attention to information consistent with a prior expectancy, the interdependent subjects paid significantly more attention to inconsistent information. Cooperatively interdependent individuals apparently did not use their expectations as the primary bases for their impressions, but rather sought to integrate the available information, even contradictory information.

#### Inferences about Opponent's Disposition

Like cooperators, competitors' efforts to increase prediction and control would best be served by attending to information contradictory to their initial expectations. Consistent information, largely redundant with an expectation, offers little new information about a target person's intentions, disposition, or future behavior. Inconsistent information, on the other hand, provides novel information about the target person. Indeed, an unexpected behavior

or attribute may lead individuals to conclude that such a behavior or attribute is characteristic of the target (Jones & Davis, 1965), thereby increasing their sense of accurately predicting the other's behavior.

Interdependent individuals apparently do make such dispositional inferences about their companion, as Erber and Fiske (1984) demonstrated by tape-recording subjects' comments about their partners' attributes. While considering inconsistent attribute information, cooperatively interdependent subjects commented about their partners' dispositions more often than did nondependent subjects. Because dispositional inferences can augment the perceived control of competitors as well as cooperators, competitively interdependent individuals conceivably would exhibit a similar pattern of dispositional inferences.

In competitors' attempts to uncover an opponent's personality, their inferences about that opponent's disposition may either challenge or re-confirm initial expectations. Because ambiguous attributes may assume several shades of meanings, competitors' inferences might entail meaning change. For instance, confronting the inconsistency that an incompetent opponent "attends to details," competitors could conclude the opponent is a "picky" person. Not only does this inference color the meaning of the attribute, the inference endeavors to fit the attribute to the original expectancy. Alternatively, competitors might conclude that an opponent is "generally thorough in her undertakings," making an inference inconsistent with the initial expectancy.

The prediction that competitors will make inferences about their opponents' attributes have parallel predictions in the research area of attitudes and persuasion. Petty and Cacioppo's Elaboration Likelihood Model (1986) predicts that individuals who are deeply involved in an issue will elaborate about persuasive messages, and will generate supporting arguments or counterarguments to them. As a result, individuals' initial attitudes may change, although this may occur in either direction. In contrast, less involved individuals are neither likely to elaborate about a message nor likely to evidence enduring attitude change.

By analogy, competitors, who are more deeply involved than nondependent individuals, may elaborate about their opponents' attributes. Moreover, like individuals involved in an issue, competitors are motivated to be accurate in their assessments. Elaboration about opponents' attributes, especially their relationship to opponents' disposition, is tantamount to generating miniature arguments that decide how each attribute supports or contradicts initial expectations of what the other person is like. And, as a result of thoroughly considering their opponent's attributes, competitors' impressions can change from those based on prior expectancies to more complex impressions. In contrast, less involved, nondependent individuals would be unlikely to elaborate about a target person's attributes and disposition, and therefore would maintain their expectations.

As a result of attending to information about their opponents, competitors may modify their initial impressions, but they need not abandon prior expectancies entirely. Instead, competitors should rely

less heavily upon expectancies in forming impressions. On the average, competitors' impressions may tend toward the individuating end of a continuum ranging from purely expectancy-based impressions to individuated impressions created by piecemeal integration of individual attributes (Fiske & Neuberg, in press; cf. Brewer, 1988). Even so, the resulting impressions of individual competitors should vary considerably. As a consequence of attention and mental deliberation, some competitors' impressions will change little while other competitors will reject the expectancy altogether. In contrast, the impressions of nondependent individuals should be relatively homogenous, insofar as they merely retain their prior expectancies. This dissimilarity should be reflected in different degrees of variability in the resulting impressions formed by competitors and noncompetitors.

#### Uncertainty and Perceived Control

If attention to and dispositional inferences about opponents are essentially adaptive strategies, competitors should employ these strategies only when it is fruitful to do so. When the outcome of a competition is virtually determined, sizing up an opponent (or the failure to do so) would hardly enhance perceived prediction and control. Attention to an opponent would therefore be diminished in conditions of relative certainty.

The magnitude of outcome certainty would in part be influenced by the relative competence of the competitors, and also by external constraints, such as the particular rules of a game. For example, a competent individual would not ordinarily attend to an extremely incompetent opponent and vice versa; it is fairly clear to each



competitor who will emerge as victor. If, however, the competent competitor sports a handicap, or the incompetent competitor has the benefit of a "head start," the outcome becomes less certain. In this case, at least for the competent competitor, attention to the opponent might enhance perceived prediction and control.

In Experiment 1, subjects' perceived competence in performing a particular task is assessed, and is used to separate subjects into high- and low-confidence groups. In addition, competitors are required to generate a large point gap between themselves and their opponent. For low-confidence subjects, winning the prize is virtually impossible. Low-confidence, unskilled individuals tend to withdraw psychologically from competitive situations (Johnson & Johnson, 1975; Schmitt, 1986), and thus would be unlikely to anticipate winning, even when competing against an incompetent opponent.

In contrast, individuals who feel proficient at a task often welcome competition (Michaels, 1977), tending to believe that they have a chance of winning. Even if their opponent is also competent, generating a point gap may be construed as possible. And, of course, the need to generate a point gap makes the outcome of a competition with an incompetent opponent uncertain. In sum, because losing the prize is fairly certain for low-confidence competitors, attention to opponents would be a vain endeavor. Therefore low-confidence competitors should not bother attempting to reconcile inconsistencies. For high-confidence competitors, however, success or failure should be sufficiently uncertain to warrant attention to and dispositional inferences about their opponent, especially his or her expectancy-inconsistent attributes.

Of course in Experiment 1, the extent to which an outcome is uncertain depends in part on subject-confidence; interpretations of the results are therefore potentially limited by pre-existing differences among subjects. In Experiment 2, subject-confidence is manipulated so that the outcome of the competition is an uncertainty for all competitors. After subjects are led to believe that their own ability at a task is average, they are asked to compete against a slightly superior or slightly inferior opponent. Given the uncertainty of a "close race," competitors in Experiment 2 are expected to attend to and make dispositional inferences about expectancy-Inconsistent Information.

#### Negative Affect and Competition

One fundamental similarity between previous research on competition and the present investigation is that competition by nature interferes rather than facilitates goals (Deutsch, 1973; Kelley & Thibaut, 1978). The goal attainments of two opponents are clearly incompatible, whether those opponents are groups or individuals. Consequently, competition incites hostility, mutual distrust, and negative affect as each competitor's goals are thwarted by the behaviors and capabilities of the other competitor. Numerous studies have demonstrated that cooperative group interdependence promotes positive affect between groups, whereas competitive group interdependence incites hostile behaviors (Amir, 1976; Johnson & Johnson, 1975; see also Turner & Giles, 1981, for review). Because interfering behaviors and incompatible goals exist in dyadic competition as well as in groups, competitors may experience negative affect regarding each other.

Thus by dint of the competitive interaction, it is improbable that competitors would report liking their opponents. Indeed, competitors may wish to believe information about their opponents' negative attributes while simultaneously desiring to minimize the importance of their opponents' more positive attributes. In so doing, competitors could attempt to bolster and protect their own self-esteem. Unfortunately, such efforts are often incompatible with forming accurate impressions. To the extent that they seek to increase their prediction of the situation, competitors should try to accurately assess all relevant information, rather than integrating only what they wish to believe.

However, if competitors could satisfactorily maintain their self-esteem without sacrificing accuracy, they would likely do so. Because an opponent's attributes that are irrelevant to the particular task are less useful in increasing a competitor's prediction and control of the situation, accuracy about such attributes would be considerably less important. Task-irrelevant attributes could therefore afford competitors the chance to derogate their opponents and vent hostility, without sacrificing accuracy. In Experiment 2, competitors' use of task-irrelevant information is assessed to address this possibility.

## CHAPTER 2

### EXPERIMENT 1

#### Method

##### Overview

An experimenter led subjects to believe that they would or would not compete with a fictitious other subject for a chance to win a prize. The other subject was initially portrayed as competent at the task (positive expectation) or incompetent at the task (negative expectation). Subjects then received both expectancy-consistent and expectancy-Inconsistent Information about the other subject, and voiced their reactions to that information into a tape recorder. Prior to the manipulations, a self-report measure of the subjects' own perceived competence at the task designated individuals as high- and low-confidence subjects.

##### Subjects

Thirty-three female and 17 male undergraduates at the University of Massachusetts at Amherst received credit in a psychology course for their participation. The data of 6 subjects who volunteered suspicion about the alleged other subject were deleted from the analyses, as were the data of one woman who did not comprehend English well enough to follow instructions.<sup>1</sup> After these deletions, the proportion of males to females was approximately equal across conditions. No significant sex differences were detected.

##### Procedure

When subjects arrived, the experimenter first reminded them that another subject was participating in the study at the same time. This alleged person, always the same sex as the actual subject, was

presently completing the initial stages of the experiment in an adjacent laboratory with another experimenter. A coat and knapsack deposited conspicuously by one of the chairs suggested that the other subject had left them, and would indeed return later. On the table were two note pads, two pens, and eight engaging wind-up toy animals that subjects would presumably need for the task.

The experimenter briefly explained that the researchers proposed to investigate how the presence of another person might influence performance. In each other's presence, but working independently, each subject would be asked to write down ways to communicate activities and concepts using the wind-up toys. For instance, subtraction might be shown by winding up several toys and allowing them to hop away from the remaining toys. The experimenter instructed subjects to imagine trying to communicate an idea to a friend who needed to understand the concept to pass an exam. Thus the experimenter endeavored to convey that skill and creativity in imparting information, capacities manifested in good teachers, were crucial to competence at this particular task.

At the experimenter's request, subjects first described in writing both how competent they expected to be at this task and their reasons for believing this. Secondly, they marked on a 15-point scale how competent they expected to be at the task; this constituted the measure of confidence. Finally, subjects received 12 cards with competency-related adjectives printed on them, modeled after those used by Erber and Fiske (1984). The experimenter requested subjects to use each adjective to write a self-descriptive statement reflecting



their standing on that adjective and whether it was applicable or not to them, especially with regard to their work habits.

Competition Manipulation. When subjects finished writing, the experimenter proposed that, in addition to the mere presence of another person, knowing something about that person might influence performance on the task. Presumably to test this hypothesis, the experimenter asked permission to exchange the information subjects had just written. To manipulate whether subjects competed or not, the experimenter explained that \$50 would be given to the subject who performed best relative to his or her opponent, that is, for whom the point gap between the two competitors was greatest. Noncompetitors were similarly told they might win \$50, but their chances would be randomly determined. The experimenter stressed that, although in the same room, subjects were to work individually.<sup>2</sup>

After introducing the competition manipulation, the experimenter excused herself, presumably to exchange the subjects' information. She returned carrying a tape recorder and explained that the researchers wished to record subjects' initial reactions to the exchanged information. After being reassured of the anonymity of their responses, especially with respect to the fictitious other subject, the experimenter asked subjects to read each piece of information aloud and comment about it.

Expectancy Manipulation. The fictitious other subject presumably provided the same kind of information as the actual subject, and it was this bogus information the subject received. In response to the first question regarding competence at the task, the fictitious subject in the positive expectation condition presumably wrote:

I think I might be pretty good at this. I've been a peer tutor for several years now. And I really like it.

In the negative expectation condition he or she wrote:

I don't think I'll be very good at this. I tried to be a peer tutor once, but I wasn't very good at it.

Consistency of Information Manipulation. The subsequent information, supposedly the fellow subject's self-descriptive statements, appeared in a different random order for each subject, with the stipulation that no more than three consistent or three inconsistent statements appeared consecutively (see Appendix A). Because half these statements suggested the fictitious subject was competent at the task and the other half conveyed incompetency, the statements were either consistent or inconsistent with the initial expectation.

When subjects finished commenting on the other subject's activities, they completed a short questionnaire. On 15-point bipolar scales, subjects rated how fun, likeable, creative, competent, and good at the task the fictitious subject would be. Subjects also rated their own competence a second time to assess whether their confidence changed as a result of the manipulations, and also reported how motivated they felt. Once this questionnaire was completed, subjects were probed for suspicion, and debriefed. A random drawing for \$50 was held when the study was completed.

### Results

Prior to analyses, a median split of subjects' initial ratings of their own perceived competence at the task designated them as either low- or high-confidence subjects. On the final questionnaire, high-

confidence subjects reported being more motivated to perform the task than did low-confidence subjects,  $F(1,36) = 4.78$ ,  $p < .04$ .

#### Timed Attention

From the audiotapes, the experimenter timed with a stopwatch the number of seconds subjects considered each piece of information. Timing always commenced when subjects began to turn over the preceding card, which was clearly audible. The total number of seconds subjects attended to consistent and inconsistent information were entered into a  $2 \times 2 \times 2 \times 2$  mixed-model analysis of variance, competition (yes, no), by expectation (positive, negative) by subject-confidence (low, high) by information (consistent, inconsistent). This analysis yielded the predicted competition-by-information interaction,  $F(1,36) = 4.61$ ,  $p < .04$ , indicating that competitors increased their attention to inconsistent information (see Figure 1).

Contrary to initial predictions, however, competitors' differential attention to inconsistent information did not interact with subject-confidence. Although the pattern of means was identical at both levels of subject-confidence, it appeared more extreme for high-confidence subjects. As an exploratory analysis, the data for low- and high-confidence subjects were analyzed separately in  $2 \times 2 \times 2$  ANOVAs. The competition-by-information interaction was significant for high-confidence subjects,  $F(1,18) = 4.76$ ,  $p < .04$ , but not significant for low-confidence subjects,  $F(1,18) = .66$ ,  $p < .43$ . Thus, it appears that the results depicted in Figure 1 are primarily a consequence of the attention of high-confidence subjects, which reflects predictions.

Attention to Positive and Negative Information. Although primary theoretical interest lay with attention to expectancy-inconsistent and expectancy-consistent information, competitors' and noncompetitors' attention to positive and negative information (i.e. competency and incompetency information) may also be considered. The total number of seconds subjects attended to positive and negative information were entered into a 2 X 2 X 2 X 2 mixed-model analysis of variance, competition (yes, no), by expectation (positive, negative) by subject-confidence (low, high) by information (positive, negative). A three-way interaction between competition, expectation, and information,  $F(1,36) = 4.61$ ,  $p < .04$ , essentially paralleled the results obtained when information was considered as consistent and inconsistent. That is, relative to non-competitors, competitors expecting a competent opponent sharply increased attention to negative information, whereas competitors expecting an incompetent opponent increased attention to positive information.

#### Think-aloud Protocols

Subjects' tape-recorded comments were coded into discrete categories: Attribute Matching, Dispositional Comments, Elaborations, Evaluations, Hedging, No Comments, Repetitions, and Self-References (see Table 1). To assess reliability of the coding scheme, a second individual coded a subset of the protocols. Interrater reliability on code types, all significant at  $p < .001$ , ranged from  $r(26) = .70$ , to  $r(26) = .89$ , with an average interrater reliability of  $r = .84$ . Interrater reliability for Dispositions was  $r(26) = .78$ . For each comment type, the number of comments a subject made served as the

dependent variable entered into 2 X 2 X 2 X 2 mixed-model analyses of variance, using the independent variables noted above.

Dispositional Comments. As originally anticipated, ANOVA yielded a three-way interaction among competition, subject-confidence, and information,  $F(1,36) = 7.59$ ,  $p < .01$ . As shown in Figure 2, the comments of the high-confidence subjects clearly support the hypotheses: Competitors generated more dispositional inferences in response to inconsistent information than did noncompetitors. For low-confidence subjects, dispositional inferences about consistent and inconsistent information did not vary as a function of competition.

Lower order effects revealed that high-confidence subjects commented more about inconsistent information,  $F(1,36) = 6.81$ ,  $p < .01$ , and that, overall, competitors made more dispositional inferences than noncompetitors,  $F(1,36) = 4.81$ ,  $p < .03$ .

Other Comments. High-confidence subjects were more likely to elaborate about expectancy-consistent information, whereas low-confidence subjects elaborated about expectancy-inconsistent information,  $F(1,36) = 4.80$ ,  $p < .04$ . Insofar as this result did not interact with the competition manipulation, it is difficult to interpret from the current perspective.

Subjects were more likely to make evaluations when not competing,  $F(1,36) = 4.39$ ,  $p < .04$ , and this was especially the case if subjects expected to meet an incompetent other,  $F(1,36) = 5.26$ ,  $p < .03$ . Evaluation devoid of elaboration, dispositional inference, and other more deliberative thought may reflect noncompetitors' preference to move through the material quickly.



High-confidence subjects were more likely to say "no comment," or to look at an attribute without commenting about it than were low-confidence subjects,  $F(1,36) = 5.37$ ,  $p < .03$ . Note that this does not preclude spending time to consider the information, and perhaps indicates censoring.<sup>3</sup>

#### Adherence to Expectancies

It was anticipated that competitors' resulting impressions, assessed here by ratings of their opponent's overall competence, would be more heterogeneous than noncompetitors' impressions. Because of their perceived chance for success, this should be more true of high-confidence subjects. An aggregate measure of subjects' perceptions of the fictitious subject's competence was computed from three items on the questionnaire: his or her creativity, competence, and likelihood of being good at the task.

Homogeneity of variance tests between competitors and noncompetitors at each level of expectancy and subject-confidence were conducted. For high-confidence subjects expecting to meet an incompetent subject, the variability of ratings were greater for competitors ( $SD = 10.38$ ) than for noncompetitors ( $SD = 7.08$ ),  $F(3,5) = 6.71$ ,  $p < .03$ . Note that competitors in this condition should have perceived the greatest likelihood of winning the prize, insofar as generating a large point gap is easier when one faces an incompetent rather than a competent opponent.

Still, for high-confidence subjects in general (i.e. collapsing across expectations), there was a tendency for competitors' ratings ( $SD = 7.23$ ) to be more variable than noncompetitors' ratings ( $SD = 4.91$ ),  $F(9,11) = 2.17$ ,  $p < .11$ . While these results provide limited

support for hypotheses, they should, of course, be interpreted with caution due to small sample sizes. Because the assumption of homogeneity of variance was not met, the data from these questionnaire items were not subjected to additional analyses.

### Summary and Conclusions

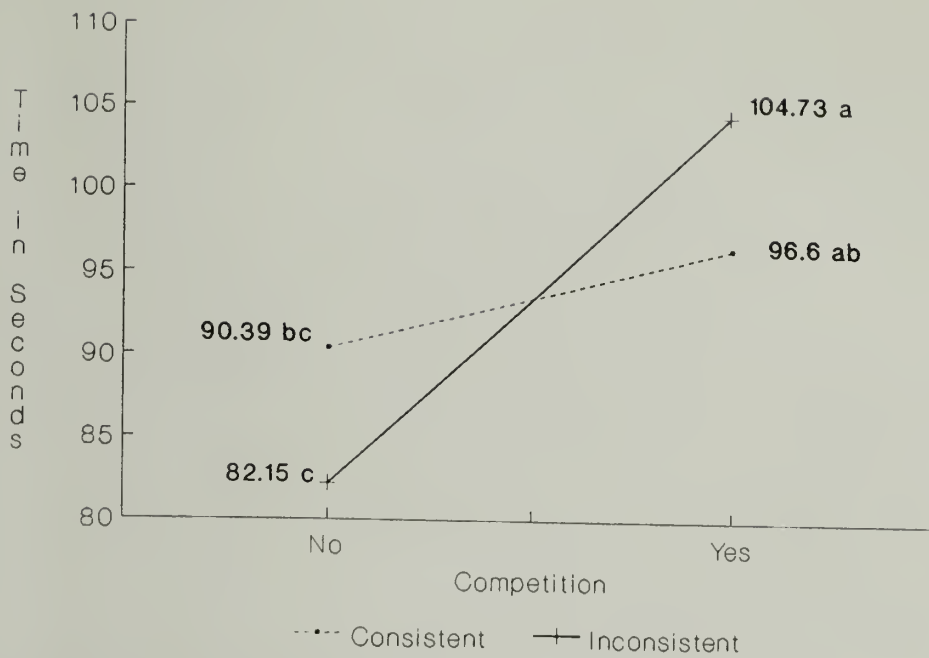
As anticipated, relative to noncompetitors, competitors increased their attention to expectancy-Inconsistent Information. Separate analyses indicate that, although patterns of attention were the same for all subjects, primarily high-confidence subjects in competition attended to Inconsistent Information. Moreover, only high-confidence competitors increased dispositional inferences about Inconsistent Information. In all respects, their behavior substantiates the hypotheses.

Of course, low-confidence subjects could have formulated dispositional inferences privately, without voicing them aloud; their lack of confidence might have generalized to not voicing opinions. Low-confidence subjects rarely refrained from commenting, however. Though it is possible that low-confidence subjects did not utter their true thoughts, a more parsimonious explanation is that low-confidence competitors deemed it futile to size up an opponent when it was relatively certain they would not win the prize.

High-confidence competitors, however, availed themselves of opportunities to increase perceived control. Conceivably, any one of various individual differences, such as self-esteem, prior experience with psychology experiments, or intelligence, might have fed into subjects' confidence in performing the task. In fact, confidence could reflect individual differences in competitiveness (Kuhlman &

Marshello, 1975). Battistich and Aronoff (1985), for instance, found that dominant individuals often anticipate success in competitions, and that they even prefer competitive situations over cooperative ones. High-confidence subjects were perhaps more competitive from the onset. While this explanation is intuitively appealing, there is no independent empirical evidence suggesting that "sizing up opponents" is especially prevalent among inherently competitive individuals. In fact, because cooperative individuals expect variability in the types of people they encounter, it has been suggested that they, not competitive persons, would tend to seek information about others (Kelley & Stahelski, 1970).

Nevertheless, the extent to which uncertainty about outcomes accounts for the detected differences between high- and low-confidence competitors remains open. Hence, rather than allow uncertainty to vary according to pre-existing differences among subjects, uncertainty is held constant across subjects in Experiment 2. In the second experiment, all subjects are led to expect their own performance to be average, while the fictitious subject's competence is portrayed as slightly superior or slightly inferior to their own. This creates similar degrees of uncertainty about the outcome for all subjects; all competitors could lose the competition by dropping their guard or could win through increased vigilance. Thus attention to and dispositional inferences in response to inconsistencies are potentially adaptive strategies for all competitors.



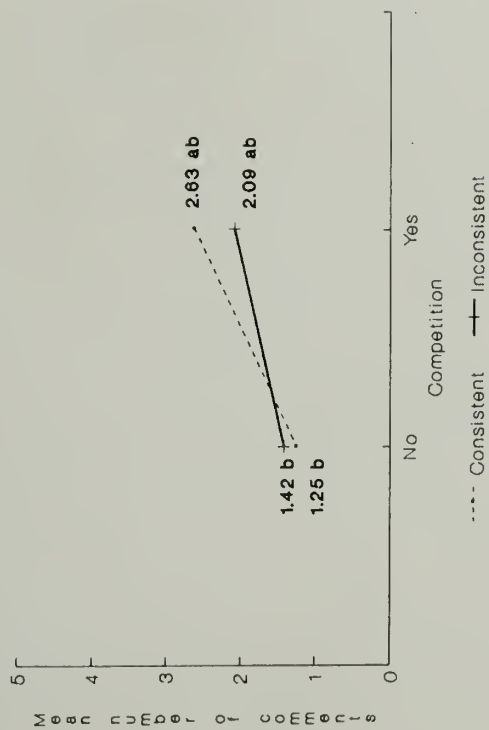
Bonferroni t-tests assessed differences among means.  
Means not sharing a common subscript differ at  $p < .05$ .

Figure 1. Competitors' and Noncompetitors' Attention to Inconsistent and Consistent Information.

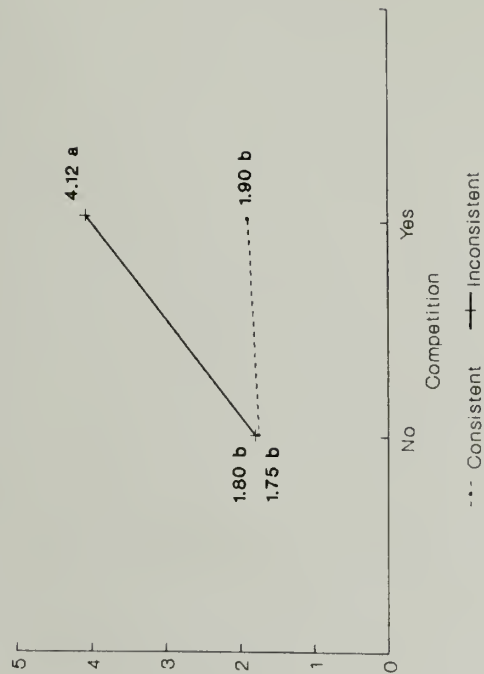
Table 1. Content Categories for Comments About Target's Attributes.

Category	Explanation
Attribute Match	Information matched to prior knowledge of target: e.g. other attributes, expectancy.
Dispositional	Statement about target's traits, tendencies, likes.
Elaboration/Interpretation	Attempt to interpret what information means or its implications.
Evaluations	Evaluation without interpretation.
Hedging	Comment not directed at anything particular. Fills in pauses with "well....uh."
No comment	No comment made or subject says "no comment."
Repetitions/paraphrasing	Repeat verbatim or paraphrase.
Self-reference	Self comparisons, reference to self, opinions.

a. Low-confidence Subjects



b. High-confidence Subjects



Bonferroni t-tests assessed differences among means. Means not sharing a common subscript differ at  $p < .05$ .

Figure 2. Dispositional Inferences about Consistent and Inconsistent Information Made by High- and Low-Confidence Competitors and Noncompetitors.



## CHAPTER 3

### EXPERIMENT 2

#### Method

##### Overview

In an experimental situation similar to that in Experiment 1, subjects expected to compete or not compete with another subject who was apt to be either slightly better or slightly worse at the task than themselves. In addition to expectancy-consistent and expectancy-inconsistent information, subjects also read task-irrelevant information about the fictitious fellow subject. To the extent that competitors' goals are to assess an opponent's task ability, task-irrelevant information is of limited utility. Hence, competitors should attend little to and rarely comment about task-irrelevant information. However, in the event competitors do consider task-irrelevant information, it might be for the purpose of derogation.

In either event, inconsistent information again should be preferred by competitors, in favor of other types of information. Planned orthogonal comparisons tested how attention to and dispositional comments about the three types of information differed at the two levels of competition.

##### Subjects

Thirty-two female and 8 male undergraduates at the University of Massachusetts at Amherst received credit in their psychology course and were promised an opportunity to win a \$15 prize.<sup>4</sup> Subjects were randomly assigned to one of the four experimental conditions, with equal proportions of males and females in each condition. No

discernable sex differences were found. The data of three women who were suspicious about the procedures were omitted from all analyses, as were the data of one woman who comprehended English poorly.<sup>5</sup>

### Procedure

As in Experiment 1, subjects expected to meet a fellow subject of the same sex who had already begun the initial stages of the experiment in an adjacent lab. Again, the cover story involved the investigation of how the presence of another person might affect performance on a task.

A recreational game using the wind-up toys was described as follows. Sitting across a table from each other, but working individually, the two subjects would have exactly twenty minutes to write down ways to demonstrate various simple ideas and concepts, using the wind-up toys as props. Once subjects thoroughly understood the game and scoring, they completed a brief practice trial to give them "hands on" experience with the game.

In order to manipulate subjects' confidence in playing the game, the experimenter told subjects that competence and scores at a certain brief game were excellent predictors of competence and scores at the twenty-minute game they would play with the fictitious subject. She asked subjects to locate words at least 4 letters long hidden in the names of the wind-up toy animals. For example, in 'orange boxing kangaroo' can be found the words 'king' and 'brink.' After counting the number of words subjects found, the experimenter told them "that's about how most people have been doing." After making some bogus calculations, all subjects learned that they could expect to obtain

between 22 and 27 points in the 20 minute game, again described as "about how most people have been doing." The experimenter wrote this predicted range on a slip of paper, and then asked subjects to write their first names above their predicted scores.

The experimenter reminded subjects that, on their statements of informed consent, they agreed to provide information about themselves. She gave subjects 15 cards with bipolar adjective pairs printed on them. On each card, subjects circled the word that best described them, and wrote an idiosyncratic example of how it applied to them. When subjects finished writing, the experimenter proposed to exchange subject information, according to procedures reported in Experiment 1.

Competition Manipulation. To manipulate whether subjects expected to compete or not, the experimenter announced that subjects could win one of two \$15 prizes. In the competition condition, subjects discovered that their performance relative to their opponents' performance determined their chance to win a prize. Subjects wrote their names on a raffle ticket with space provided for both subjects' names, telephone numbers, and scores. The experimenter explained that if that ticket was drawn in the raffle, the subject who had obtained the higher score would receive \$15. She further indicated that, if scores were equal at the end of the game, a tie breaking question would be introduced.

In the no-competition condition, subjects learned of a random drawing for a \$15 prize for subjects who began in the first lab, and a separate random drawing for subjects who began in the fictitious second lab. The experimenter explicitly told subjects that

individuals participating in the study simultaneously could each win a \$15 prize. Subjects wrote their names, telephone numbers, and lab room number on a raffle ticket. After introducing the competition manipulation, the experimenter exited a second time, allegedly to exchange subjects' information. In the competition condition, she took the raffle ticket "for the other subject to complete," whereas in the no-competition condition, the experimenter intimated that she would place the ticket in the appropriate raffle box.

Expectancy Manipulation. Before returning to the lab, the experimenter randomly determined whether the Imaginary subject would be portrayed as slightly superior or slightly inferior to the actual subject. The predicted scores for the slightly superior and slightly inferior fellow subject ranged from 24-29 and 20-25, respectively. Both ranges overlapped somewhat with the subjects' predicted score range. Pretesting of these ranges indicated that for people expecting to obtain between 22-27 points, the perceived likelihood of scoring higher than a superior and an inferior person was approximately 41% and 63%, respectively.

Upon returning with the fictitious subject's cards, the experimenter produced a previously hidden tape recorder and explained that subjects' initial reactions to the exchanged information would be recorded. She explained that tape-recording would be more accurate than the experimenter taking notes, and that it could capture the spontaneity of subjects' comments. After reassuring subjects of the anonymity of their responses, especially with respect to their fellow

subject, the experimenter asked subjects to read each card aloud and comment about it.

Consistency of Information Manipulation. The first piece of information always contained the fictitious subject's name (Mike or Anne) and his or her predicted score range (20-25 or 24-29, depending on the expectation). With those exceptions, identical cards appeared across conditions. The adjectives supposedly chosen by the fictitious other subject, and his or her examples, were pretested so that one-third of the cards implied competency at the game, one-third implied incompetency, and one-third were task-irrelevant and neutral with respect to competency (see Appendix B). For subjects expecting to meet an inferior subject, incompetency information was consistent with this expectation whereas competency information was inconsistent, and vice versa if the fictitious subject was apparently superior. Each subject saw a different sequence of cards, random except for the stipulation that no more than two competency, two incompetency, or two task-irrelevant information cards appeared consecutively.

When subjects finished commenting on the fictitious subject's information, they completed a short questionnaire assessing their own expected competence and motivation levels, as well as how likable, fun, good at the game, and competent they perceived their fellow subject to be. All questions were presented along 15-point bipolar scales.

Although subjects in the no-competition condition were not explicitly instructed to compete, and although the reward structure did not require competition, noncompetitors might have conceivably



competed for the higher score. Consequently, the questionnaire contained an item concerning the extent to which subjects would like to beat the other subject's score.

After subjects completed the questionnaire, the experimenter probed subjects for suspicion, and thoroughly debriefed them. At the conclusion of the study, a random drawing was held to award a \$15 prize.

## Results

### Manipulation Checks

Data used for the manipulation checks were entered into 2 X 2 analyses of variance, competition (yes, no) by expectation (superior, inferior). Subjects rated the fictitious subject as likely to be better at the task when expecting a superior rather than an inferior fellow subject,  $F(1,32) = 6.72$ ,  $p < .01$ .

Apparently, subjects accepted their predicted score range computed by the experimenter. Self-reported score estimates did not differ significantly from 22 or 27, which were the extremes of the predicted score range, nor from 24.5, which was the mean of the predicted score range. In addition, differences in self-reported competence as a function of the manipulations were not detected.

Because the fictitious subject was portrayed as only slightly inferior or slightly superior to actual subjects, it is worth considering whether or not subjects perceived any appreciable dissimilarity in ability. The algebraic difference between subjects' estimates of their own scores and their estimates for the fictitious subject were computed; these data did not meet assumptions of

homogeneity of variance, and were therefore not analyzed. The difference between subjects' self-reported competence and ratings of the fictitious subject's competence met this assumption, however. ANOVA revealed no significant effects, suggesting that subjects accepted that their own ability was similar to that of the fictitious subject.

Relative to noncompetitors, subjects in the competition condition did not report a greater desire to beat the fictitious other subject's score,  $F(1,32) = 1.11$ ,  $p < .30$ . It is possible, of course, that subjects' responses may have been influenced by information about the target person, as well as by each manipulation itself. For example, competitors who concluded that the opponent would be a formidable adversary could have decided that they did not truly wish to win (i.e. sour grapes). Alternatively, for reasons of social desirability, competitors might not have accurately reported their desire to win.

#### Timed Attention

Attention was assessed as in Experiment 1. The total number of seconds subjects looked at consistent, inconsistent, and task-irrelevant information was entered into a  $2 \times 2 \times 3$  mixed-model analysis of variance, competition (yes, no), by expectation (superior, inferior) by information (consistent, inconsistent, irrelevant). ANOVA yielded a main effect of information,  $F(2,64) = 4.19$ ,  $p < .02$ , qualified by a significant competition-by-information interaction,  $F(2,64) = 4.02$ ,  $p < .02$ . As shown in Figure 3a, while competitors increased attention to inconsistent information, noncompetitors tended to increase attention to consistent information. Finally, relative to

noncompeting subjects, competitors reduced attention to task-irrelevant information.

Because primary theoretical interest lay with attention to consistent and inconsistent information as a function of competition, the data for task-irrelevant information were omitted from a second analysis. The competition-by-information interaction, without task-irrelevant information, is by itself significant,  $F(1,32) = 4.34$ ,  $p < .05$ .

The two degrees of freedom associated with the competition-by-information interaction allowed two a priori contrasts. It was anticipated that competitors, relative to noncompetitors, would favor inconsistent information over other types of information. A contrast comparing attention to inconsistent information with the average of attention to consistent and task-irrelevant information confirmed this prediction,  $F(1,32) = 6.74$ ,  $p < .01$ .

The second contrast tested the prediction that, compared to noncompetitors, competitors would attend to task-relevant (i.e. consistent and inconsistent) information longer than to task-irrelevant information. This contrast, in the expected direction, approached significance,  $F(1,32) = 3.55$ ,  $p < .07$ .

Attention to Positive, Negative, and Neutral information. The number of seconds competitors and noncompetitors attended to positive, negative, and neutral information were entered into a  $2 \times 2 \times 3$  ANOVA, competition (yes, no) by expectation (superior, inferior) by information (positive, negative, neutral). The three-way interaction among these variables was marginally significant,  $F(2,64) = 2.91$ ,

$p < .06$ . Relative to noncompetitors, who attended equally to all types of information, when expecting to meet a superior other competitors tended to drop their attention to all but negative information (i.e. inconsistent information). In contrast, relative to noncompetitors anticipating an incompetent other, competitors sharply increased attention to positive information (i.e. inconsistent information), but continued attending to negative information (i.e. consistent information).

For competitors anticipating a superior opponent, negative information affords the only glimmer of hope for success; it may be that they fixated on this information to the exclusion of other information because it alone increases predictability. In contrast, for competitors anticipating an inferior opponent, negative information continues to be attended to, perhaps due to wishful thinking. However, because they are motivated to be accurate and enhance predictability, competitors in this condition need to (and do) take positive information into account.

#### Think-aloud Protocols

As in Experiment 1, subjects' tape-recorded comments were content coded (see Table 1), with a second individual coding a subset of the protocols. Interrater reliability on comment types ranged from  $r(18) = .68$ ,  $p < .002$ , to  $r(18) = .93$ ,  $p < .001$ . The latter correlation represents interrater reliability on dispositional comments. On the average, interrater reliability was  $r = .83$ ,  $p < .001$ . For each comment type, the number of comments a subject made was entered into a  $2 \times 2 \times 3$  ANOVAS, using the independent variables noted above.

Dispositional Comments. ANOVA revealed a main effect of Information,  $F(2,64) = 3.45$ ,  $p < .04$ , clarified by a significant competition-by-Information interaction,  $F(2,64) = 3.34$ ,  $p < .04$  (see Figure 3b). As with timed attention, upon excluding task-irrelevant information, the interaction of Interest remains significant,  $F(1,32) = 7.88$ ,  $p < .008$ . Competitors made dispositional comments in response to inconsistent information, whereas noncompetitors made dispositional comments about consistent information.

The contrasts performed on timed attention were also performed on dispositional comments, with identical predictions. The contrast comparing dispositional comments about inconsistent information with the average number of dispositional comments made about consistent and task-irrelevant information confirmed predictions,  $F(1,32) = 7.00$ ,  $p < .01$ . The second contrast, that competitors would make more dispositional inferences about task-relevant than task-irrelevant information, was not significant,  $F(1,32) = .24$ ,  $p < .63$ .

Other Comments. Hedging was less frequent in the competition condition,  $F(1,32) = 6.62$ ,  $p < .01$ . In fact, subjects expecting to compete with a less competent opponent hedged very little,  $F(1,32) = 4.40$ ,  $p < .04$ . Hedging was defined as uttering words with no evident meaning, filling in gaps between actual comments, as if searching for a comment to make. Competitors, then, apparently did not need to search for something to say. As reflected in the patterns of "No comments," competitors either made a meaningful comment about an attribute, or skipped that attribute entirely.



Subjects primarily declined to comment about inconsistent information,  $F(2,64) = 4.87$ ,  $p < .01$ . This result is explained by the competition-by-information interaction,  $F(2,64) = 3.83$ ,  $p < .03$ . Noncompetitors refrained from commenting mostly about inconsistent information, whereas competitors refrained from commenting on consistent information. Though not explicitly predicted, this result is not surprising. Because consistent information would be less useful to competitors, they apparently skipped over it. In contrast, noncompetitors appeared unwilling to exert effort to reconcile inconsistencies, which would be expected for individuals using more expectancy-based processes in impression formation.

#### Derogation

Although collapsed in the analyses above, the valence of each comment was noted on dispositional, elaborative, and evaluative comments. The number of positive, negative, and non-valenced comments subjects made were first summed, and then submitted to ANOVAs. Analysis of negative comments about task-irrelevant information revealed a non-significant effect of competition in the expected direction,  $F(1,32) = 1.76$ ,  $p < .19$ , namely that competitors would tend to make more derogatory comments. In addition, no differences in reported liking for the fictitious subject were reported on the questionnaire. Thus there is little support for hypotheses about derogation.

#### Adherence to Expectancies

As in Experiment 1, it was predicted that competitors' ratings of their opponents' competency might be more variable than

noncompetitors' ratings. For the simple questions concerning the fictitious subject's competence at the task and likelihood of being good at the task, nor the aggregate measure of the two, homogeneity of variance tests revealed no significant differences in variability.

However, considerable variability was detected among estimates of the fellow subject's final score in the game, which was the actual expectation. The homogeneity of variance test revealed significantly more variability in competitors' estimates ( $SD = 7.30$ ) than noncompetitors' estimates ( $SD = 4.83$ ),  $F(17,17) = 2.23$ ,  $p < .05$ , suggesting that competitors vary considerably in their final assessments of opponents.

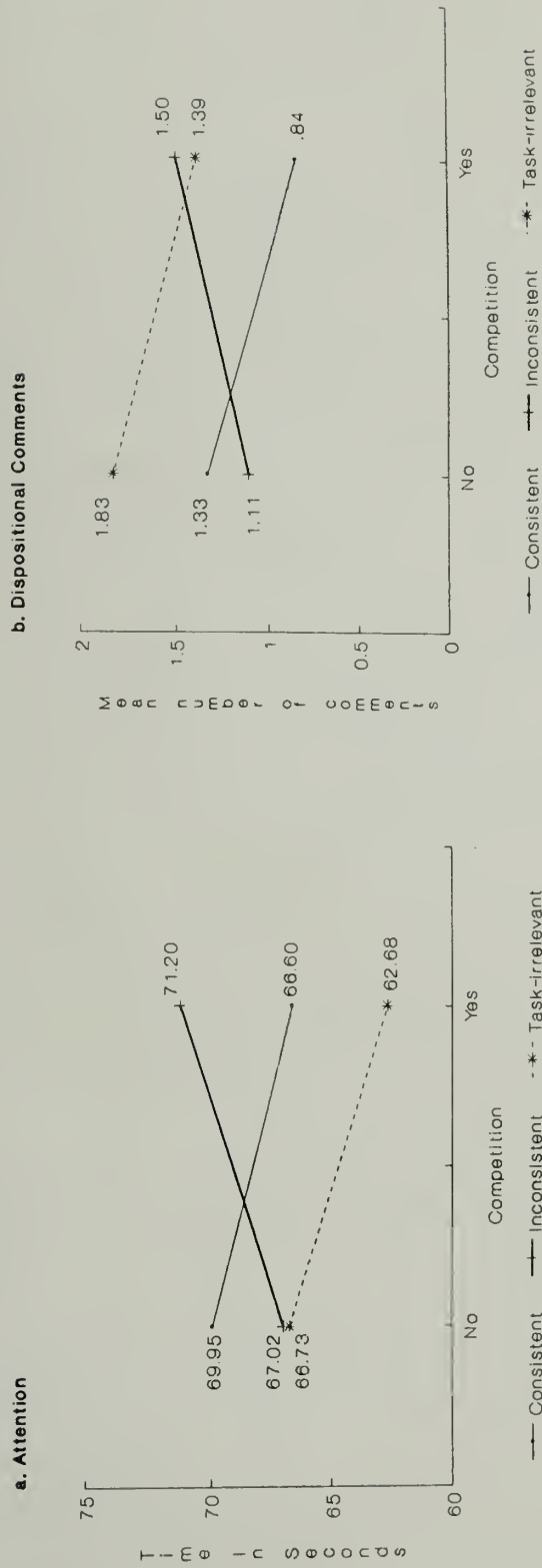


Figure 3. Competitors' and Noncompetitors' Attention to and Dispositional Inferences about Inconsistent, Consistent, and Task-irrelevant Information.

## CHAPTER 4

### DISCUSSION

The results of both experiments suggest that competing individuals attend to and make dispositional inferences about information inconsistent with initial expectations about opponents, at least in situations in which there is a reasonable chance of success. Of special importance is the increase in attention, a necessary condition for more individuating processes. Moreover, as shown by the increased variability of competitors' resulting impressions, attention apparently leads competitors to rely less heavily on prior expectancies.

The consequences of uncertainty regarding the outcome of a competition generalized across the two experiments. In Experiment 1, in which uncertainty varied naturally, individuating processes (i.e. increased attention to and dispositional inferences about inconsistencies, and more varied resulting impressions) were most pronounced for competitors in the conditions in which the outcome was uncertain (i.e. for high-confidence competitors). And, when uncertainty was independent of subject variables in Experiment 2, such individuating processes were manifested again.

An interesting difference between the results of the two experiments is that, in Experiment 1, attention to consistent information changed little as a function of competition. This result agrees with previous findings on attention and consistency of information (Erber & Fiske, 1984; Neuberg & Fiske, 1987), suggesting

that expectancy-consistent information does not cease to be used, but merely decreases in importance (see Fiske & Neuberg, in press).

In Experiment 2, however, competitors actually decreased attention to consistent information, a result which had not initially been anticipated. These competitors apparently chose to ignore consistent information and focus almost exclusively on inconsistencies. In addition, competitors frequently refrained from commenting about consistent information. Perhaps competitors felt compelled to be particularly discriminating in attending to opponent information, because a competition with an opponent of equal ability is the epitome of an uncertain situation.

#### Expectancy-based to Attribute-based Impressions

This finding is not, however, entirely inconsistent with the results of Experiment 1, nor with Fiske and Neuberg's (in press) continuum model of impression formation. In both experiments, noncompetitors tended to favor consistent information over inconsistent information, with the converse being true for competitors.

According to Fiske and Neuberg's continuum model, individuals operate as "cognitive misers," preferring to form the simplest coherent impression that will serve present purposes. The simplest impressions available to noncompetitors were those based exclusively on the expectation; due to nondependence, pure expectancy-based impressions would be preferable. Perhaps left to their own devices, noncompetitors would have accepted the expectancy at face value, by not even glancing at the fictitious subject's attribute information.



However, the experimental situation demanded noncompetitors to read the information; in effect, noncompetitors were instructed to attend to the other person.

Even when given some motivation to attend, individuals continue to function as cognitive misers, expending as little energy as possible to form an impression. If an individual chooses to attend to a target, the simplest strategy is to attempt to reconfirm expectations (Fiske and Neuberg, *In press*), a task most easily completed by attention to expectancy-consistent information. And it was indeed to expectancy-consistent information, the stuff that stereotypes are made on, that noncompetitors primarily attended. Thus noncompetitors' efforts to reconfirm the expectation could account for their relatively greater attention to expectancy-consistent information.

Of course, competitors also sought impressions sufficient for their present purposes, although their purposes were to predict the opponent and to win the competition. Impressions suited to these purposes required more effort of competitors, hence their relatively greater attention to expectancy-inconsistent information. In Experiment 2, increased effort in forming an impression is reflected in competitors virtually ignoring the easily integrated expectancy-consistent information. It is almost as if competitors bet against the accuracy of their prior expectancies. If a prior expectancy may be construed as a hypothesis, competitors in Experiment 2 subjected that hypothesis to a most rigorous testing.

### Intergroup Versus Interpersonal Competition

This paper opened with an apparent paradox: predictions from the desegregation literature seemed to contradict predictions from interdependence theory, from the impression formation literature, as well as from our own intuitions. Despite the slight difference between the two experiments, the results as a whole suggest that impression formation in a competing dyad is not what literature about competing groups may have initially suggested. There are several reasons why differences in impression formation might exist. First, and most obviously, when an individual joins fellow group members to compete as a team, rather than being one half of an isolated dyad in competition, group membership is likely to be salient. And, as a function of Gestalt principles such as proximity, similarity and common fate, each individual is construed as a part of that group (Brown & Turner, 1981).

Second, opportunities to attend to a particular opponent's individual attributes are considerably diminished by group competition; contact with out-group members is probably brief and infrequent. As a result, it is less likely that individuating information about an individual will be noted and integrated into impressions. Although members of a competing dyad may compete once, and once only, for the duration of the competition the two are in close contact with one another. Merely by dint of this contact, individuating information has an increased probability of being noticed.

Third, although competing groups are interdependent, individual members of each particular group are interdependent upon one another. That is, in addition to competitive interdependence between groups, individuals are cooperatively interdependent upon teammates within their in-group. These two simultaneous interdependencies create two possible foci of attention: Members of the out-group, and the members of the in-group. Frequent and long term contact is likely more to be prevalent among in-group members, factors which often serve to heighten interdependence (Kelley & Thibaut, 1978). Indeed, people are less likely to individuate members of an out-group than members of the in-group. People construe the out-group as more homogeneous, tending to be less favorably disposed toward them (see Brewer, 1979; Mullen & Hu, in press; Turner, 1981 for reviews). Possibly, competition between groups reduces attention to out-group members in favor of attention to in-group members.

When two individuals compete one-on-one, however, the salient interdependence is the competitive one. Even though each individual may remain part of a larger group, and continue to identify with that group, neither individual directly depends on the behaviors or outcomes of in-group members for success in the competition. Thus competing individuals should attend to one another, and as a consequence, their impressions can become less expectancy-based. Doubtless, however, a direct comparison of impression formation during intergroup competition with impression formation during interpersonal competition is needed to fill the empirical gaps.

Frequently, categories such as race, sex, or religious affiliation serve as expectancies in intergroup and interpersonal encounters. Although the expectancies employed in this investigation were not social categories of this type, attention to expectancy-inconsistent information during interpersonal competitive situations should generalize to such categories. More to the point, implicit in many social categories are expectations of competence in particular domains. A woman, for example, might be stereotyped as competent at certain activities, but as incompetent at others. Interpersonal competition demands her opponent to attend to information inconsistent with the female stereotype, information that might remain unnoticed in an intergroup competition, or in nondependent situations.

Unfortunately, well defined expectancies, such as domains of competence inherent in gender-role stereotypes, are resistant to change. Having engaged in interpersonal competition, individuals may not be stereotyped by their opponents, which is generally a positive consequence. However, a single, isolated incident of competing against one category member is unlikely to lead individuals to modify or discard their stereotypes of the entire group. Indeed, the very task orientation of a competitive encounter may work against this (cf. Miller, Brewer, & Edwards, 1985). Thus those same individuals who cease to stereotype their opponent will continue to stereotype other members of their opponent's category. Any positive effects of interpersonal competition may therefore be limited to the individuals involved.

### Task-Relevancy of Information Attended

The results of this investigation may diverge from results implied by the intergroup competition literature for reasons other than, or in addition to, the distinction between intergroup and interpersonal competition. Although competitors attend primarily to inconsistent information, certain attributes are relatively more important than others. Specifically, attention to information pertinent to the task potentially offers the best opportunity to enhance perceived control over outcomes. In these two experiments, the attributes competitors attended to most were both expectancy-inconsistent and relevant to the task.

To the extent that expectancy-inconsistent, task-relevant information is attended to most, competitors conceivably individuate each other primarily along task-relevant dimensions, but continue to stereotype each other along task-irrelevant dimensions. For example, an American Olympic skater might individuate her Soviet opponent with respect to skill, confidence, and experience at their event, construing her as distinct from other Soviet skaters. However, she may continue to stereotype that opponent along other dimensions by failing to reconcile emergent inconsistencies in task-irrelevant attributes (e.g. along a social dimension).

Conceivably, intergroup competitors also individuate out-group members along task-relevant but not along task-irrelevant dimensions. Indeed, it is feasible that if intergroup competition researchers distinguished between task-relevant and task-irrelevant information, findings would be comparable to those of the current investigation.



Differential Individuation along task-relevant and task-irrelevant dimensions may reflect a critical difference between competitive and cooperative interdependence. As noted earlier, cooperators generally regard each other more positively than competitors. As cooperators facilitate each other's goals, enough positive affect might develop along task-relevant dimensions to carry over to other dimensions. Moreover, cooperation affords opportunities for individuation along other dimensions. For example, members of a team may take a coffee break together long enough to begin individuating along task-irrelevant dimensions.

This does not mean competitors cannot individuate along task-irrelevant dimensions. Instead, cooperation perhaps facilitates a more generalized individuation whereas competition presents obstacles to such individuation. For instance, Tesser (1988) demonstrated that, in order to maintain self-esteem, individuals derogated a close other who was skilled in their favored activity. Analogously, if a competitive task is equally important to the competitors, it may be difficult for friendship, which likely involves individuation along task-irrelevant dimensions, to form.<sup>6</sup>

Frequently, people seek out competition for pure enjoyment, or to test their skills. In addition, goal structures in various real world interpersonal situations (e.g. athletics, obtaining employment, prosecution versus defense lawyers) often are inherently competitive. As a result of such interpersonal competition, individuals may form more individuated impressions of each other than they might otherwise. Recognition of another's competence, which may be inconsistent with an

expectancy or stereotype, may even decrease discrimination at least along that dimension. However, it is not the intention here to offer competition as the desired alternative to cooperation. Instead, it is to suggest that, where it exists, interpersonal competition may have some beneficial, previously uninvestigated consequences.

## APPENDIX A

### Stimuli for Experiment 1

My boss thinks I'm pretty conscientious.

I try to be thorough and cover everything I should.

I think I make pretty efficient use of my time.

People say I seem relaxed when I speak in class.

I'm persistent in tackling problems.

Most of the time I get things done quickly.

I can be pretty irresponsible at times.

I've been told I can be kind of superficial in my work.

My thoughts seem a bit fuzzy when I write them down.

I'm a bit sloppy and my work suffers. Sometimes.

Yesterday a friend told me I was nitpicking.

Once in a while I argue a petty point.

## APPENDIX B

### Stimuli for Experiment 2

Sloppy – Not Sloppy. My handwriting is illegible, so I have to print.

Vague – Not Vague. I guess I'm sort of vague when I try to explain things.

Slow – Not Slow. It takes me forever to make a decision about homework.

Imaginative – Unimaginative. I can never think of anything to do my creative writing paper on.

Relaxed – Unrelaxed. When I got called on in class yesterday, I freaked out.

Clever – Not Clever. I'm quick with a pun or a clever comeback.

Unobservant – Observant. I notice the crucial clues in mystery/detective shows.

Smart – Not Smart. I usually get good grades; my GPA is important to me.

Persistent – Not Persistent. I like puzzles and brain teasers you have to work hard at.

Efficient – Not Efficient. I manage my time well, usually get homework done way ahead of time.

Friendly – Unfriendly. I like to spend time alone sometimes, so some people think I'm unfriendly.

Noisy – Not noisy. People can usually hear me coming down the hall.

Sympathetic – Unsympathetic. I really should've done work last night, but my roommate needed to talk.

Romantic – Unromantic. The other night we shared a banana split for two.

Unkind – Kind. We can't keep pets, but I've been feeding a stray dog lately.

## ENDNOTES

1. Two individuals in the competition-positive expectation, 3 from the competition-negative expectation, and 1 from each of the no competition conditions were deleted from analyses.
2. Eighteen subjects who were not participants in either experiment indicated on a 9-point scale the extent to which winning the prize was more likely in the competition condition, more likely in the no competition condition, or equally likely in both conditions. Winning the prize seemed an equally likely outcome in both conditions,  $t(17) = .45$ .
3. Several other significant interactions, theoretically uninteresting, are not discussed here. For example, target information may be viewed as conveying competency and incompetency information, as well expectancy-consistent and expectancy-inconsistent information. Interactions involving the expectation and information directly reflect this, and were found for Dispositions,  $F(1,36) = 11.12$ ,  $p < .002$ , Repetitions,  $F(1,36) = 20.64$ ,  $p < .0001$ , Evaluations,  $F(1,36) = 19.26$ ,  $p < .0001$ , and Attribute comments,  $F(1,36) = 4.74$ ,  $p < .0360$ .  
Three-way interactions between competition, expectation and subject-confidence were found for the dependent variables Time  $F(1,36) = 4.12$ ,  $p < .05$ , Dispositional comments,  $F(1,36) = 8.00$ ,  $p < .0076$  and Hedging,  $F(1,36) = 7.98$ ,  $p < .008$ . Because these were the between subjects variables, means are based on only 4 to 6 subjects per cell, and one is reluctant to draw conclusions about such results.
4. During Experiment 1 debriefing, subjects occasionally commented that \$50 seemed like a lot of money. In lieu of budget constraints, the amount of the prizes were reduced for Experiment 2.
5. Of subjects whose data were omitted from analyses, 3 were from the no competition-positive expectation condition and 1 from the competition-positive expectation condition.
6. This is perhaps one reason why, in Experiment 2, competitors did not derogate their opponents. Not only were competitors strangers, but it is unlikely that competence at that particular task was central to their identities.



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