

Personality,
Organizational Culture,
and Cooperation:
Evidence from a
Business Simulation

Jennifer A. Chatman

*University of California,
Berkeley*

Sigal G. Barsade

Yale University

Deriving predictions from congruence theory, we explored the personal and situational sources of cooperation by contrasting behavior under conditions of personality fit and misfit with culture in an organizational simulation. We assessed MBA students' disposition to cooperate and randomly assigned them to simulated organizations that either emphasized collectivistic or individualistic cultural values. We found that cooperative subjects in collectivistic cultures were rated by coworkers as the most cooperative; they reported working with the greatest number of people, and they had the strongest preferences for evaluating work performance on the basis of contributions to teams rather than individual achievement. Results also showed that cooperative people were more responsive to the individualistic or collectivistic norms characterizing their organization's culture: They exhibited greater differences in their level of cooperative behavior across the two cultures than did individualistic people. We discuss the organizational implications of the conditions influencing behavioral expressions of personal cooperativeness.

Most researchers in organizational behavior and psychology now accept that behavior is a function of characteristics of the person and the environment (Lewin, 1935) and reject the extreme views that either personal characteristics, such as dispositions, or situational characteristics, such as organizational culture, entirely predict behavior. A current challenge stemming from this interactional perspective is to understand when and why certain people's behavior corresponds to or deviates from their personality across time or situations. This is particularly important to understanding cooperation at work—why some people cooperate with their coworkers and others don't.

Workplace cooperation has been conceptualized as the willful contribution of employee effort to the successful completion of interdependent organizational tasks (Wagner, 1995: 152). Cooperative behavior is often manifested in members' willingness to work with others, even when it is not formally demanded, and in preferences for being rewarded for working alone or in groups (e.g., Wageman, 1995). Identifying the conditions under which members are likely to display cooperative behavior is difficult, however, since cooperative behavior can be influenced both by personality, or one's tendency to pursue individualistic or collective goals (e.g., McClintock and Liebrand, 1988), and by formal and informal control systems that reward individual achievement or cooperative efforts (e.g., Petersen, 1992). Further, understanding cooperative behavior not only requires knowledge of an individual's propensity to cooperate and the situational inducements to cooperate, but also how these factors combine. Our objectives in this study are to add to research that clarifies the conditions under which we should and should not expect to predict behavior from personality and to increase our understanding of the sources of cooperative behavior in organizations. We examine people's disposition to cooperate and the organizational culture in which they act as relevant personal and situational characteristics and then suggest how these

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may interact to influence cooperative behavior in organizations.

Cooperative and Individualistic People and Organizational Cultures

Cooperative and individualistic orientations are shaped through dispositions and developmental experiences (Liebrand and McClintock, 1988). A person with a high disposition to cooperate places priority on associating with others for mutual benefit, gaining social approval, and working together with others toward a common end or purpose, while a person with a low disposition to cooperate places priority on maximizing his or her own welfare regardless of others' welfare (e.g., Argyle, 1991). Personal cooperativeness, as examined here, is a single-dimension personality characteristic varying from high personal cooperativeness, at one extreme, to low personal cooperativeness, or individualism, at the other extreme.

A comparable construct at the organizational level is the extent to which organizational cultures emphasize individualistic or collectivistic values. The individualism-collectivism dimension is usually examined at the societal level, but because it is central to characterizing how work is conducted, it is also relevant at the organizational level (e.g., Earley, 1993). Organizational cultures emphasizing individualistic values place priority on pursuing and maximizing individuals' goals, and members are rewarded for performance based on their own achievements (e.g., Triandis, 1989). In collectivistic organizational cultures, priority is placed on collective goals and cooperative action, and members are rewarded for joint contributions to organizational accomplishments. An organization's emphasis on individualism or collectivism typically depends on factors such as its task environment, history, industry, and the primary nation in which it operates, but both ends of the spectrum are considered legitimate and effective models of organizational functioning (e.g., Lincoln, Olson, and Hanada, 1978; Chatman and Jehn, 1994). Research suggests that personal cooperativeness and an organization's emphasis on collectivistic or individualistic values may each contribute separately to cooperative behavior. But they may also interact to influence members' cooperative behavior. The result of this interaction can depend on the match or mismatch between a person's individual disposition to cooperate and the individualism or collectivism of the organization's culture.

Cooperative Behavior Resulting from Person-Culture Matches

The degree of similarity, fit, or match between two conceptually distinct but comparable person-and-situation constructs is typically referred to as person-situation congruence (e.g., Edwards, 1994). Congruence theories draw on interactional psychology in that they consider how individual and situational characteristics combine to influence a person's affective or behavioral response in a given situation. Situations place different demands on people, and those with the skills necessary to meet these demands are more likely to behave in predictable ways (Wright and

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Mischel, 1987; Cantor and Kihlstrom, 1989). Further, people tend to be happier when they are in settings that meet their particular needs or that are congruent with their dispositions (Diener, Larsen, and Emmons, 1984: 582). Greater person-situation congruence thus increases individuals' effectiveness in that situation and their tendencies to seek out such situations in the future. To predict behavioral outcomes such as job choice and job longevity, organizational researchers have typically compared characteristics of people, such as abilities, preferences, and personality, and characteristics of organizational contexts, such as job demands and organizational or occupational values. Greater fit between a person's values and his or her organization's culture, for example, is associated with behavioral and affective outcomes such as better job performance, longer tenure, and greater commitment to the firm (e.g., O'Reilly, Chatman, and Caldwell, 1991). The congruence between personal values and organizational culture has also been shown to be a better predictor of performance, commitment, and length of stay than either characteristic alone (Chatman, 1991).

This logic can be applied to matches between cooperative people and collectivistic cultures. Since a collectivistic organizational culture rewards members for cooperating with others in meeting organizational objectives, people with a disposition to cooperate are likely to demonstrate well-practiced cooperative behaviors in this context, such as working with others rather than alone, and expressing preferences for rewards that are based on team accomplishments. In contrast, since an individualistic organization rewards individualistic members for focusing on their own work, individualistic people are most likely to demonstrate well-practiced individualistic behaviors in this context, such as working alone rather than with others, and expressing preferences for rewards that are based on individual accomplishments. When personality and culture are both oriented to cooperation, cooperative behavior should be higher than it is with any other combination of personality and culture emphasis, while when both personality and culture are oriented to individualism, cooperative behavior should be lower than it is with any other combination of these characteristics. More formally, we predict that personal cooperativeness and organizational culture will each influence cooperative behavior:

Hypothesis 1: People who have a high disposition to cooperate and who work in a collectivistic organizational culture will be the most cooperative, while people who have a low disposition to cooperate and who work in an individualistic culture will be the least cooperative.

Cooperative Behavior Resulting from Personality-culture Mismatches

Hypothesis 1 specifies the effects of matches between personal cooperativeness and cultural individualism or collectivism, but it does not specify the likelihood that those in cultures with which they are mismatched will behave in accordance with their personality or, instead, adapt their behavior to fit their organizational culture. Congruence researchers have tended to emphasize fit over misfit

(Schneider, Smith, and Goldstein, 1994) and treat personal and situational characteristics as additive: the better the fit, the happier and more competent the employee (Joyce, Slocum, and Von Glinow, 1982). Under this assumption, even extreme mismatches between personality and culture should result in equivalently "medium" levels of cooperative behavior. The level of cooperative behavior would thus be the same for those with a high disposition to cooperate in individualistic cultures as for those with a low disposition to cooperate in collectivistic cultures. But this may not be the most appropriate prediction. Related research suggests that cooperative people may adjust their behavior more than individualistic people to accommodate the cooperative or individualistic norms emphasized in different social settings. In Kelley and Stahelski's (1970a) two-person prisoner's dilemma games, subjects who had self-interested motives behaved individualistically, using an "always defect" strategy, regardless of whether their opponents behaved individualistically or cooperatively. In contrast, when more cooperatively oriented players were presented with a cooperative move, they responded cooperatively, and when presented with a self-interested move, they responded individualistically, using a tit-for-tat strategy. Cooperative subjects defected, in part, because continuing to cooperate with an individualistic opponent would result in the loss of important resources. While cooperators differentiated between their opponents' individualistic or cooperative behavior and responded accordingly, those with individualistic motives simply did not consider the possibility that other people could (or would) behave cooperatively and, thus, always behaved and responded individualistically. This suggests that people develop strategies for behaving that are based on their expectations of what other people will do. This same pattern may be generalized beyond individuals' expectations of a single opponent's behavior to their expectations of coworkers' behaviors in an organization. Organizational culture, defined as a form of social control that clarifies which behaviors and attitudes are more or less appropriate for members to display (O'Reilly and Chatman, 1996), may help individuals anticipate other members' likely reactions to their attitudes and behaviors.

Personality research also suggests that cooperative people are more likely to adjust their behavior to suit the situations in which they find themselves. Compared with individualistic people, they are more concerned about fitting in and are more willing to go along with others (John, 1990; Argyle, 1991). Individualistic people may have a limited ability to play cooperative roles. Robins (1994) found that financial customer service representatives who had higher (versus lower) dispositions to cooperate were also better at judging situational requirements, such as recognizing different customers' needs and preferences, and determining and enacting the most appropriate responses. Finally, national-level cross-cultural research helps explain why people with a disposition to cooperate would be more responsive to organizational cultures than would individualists. Members of individualistic and collectivistic societies have significantly different goals and perceptions of norms. Members of individualistic societies are more

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satisfied by activities requiring individual achievement and fulfillment of self-interested goals. In contrast, members of collectivistic countries gain satisfaction from collective action and the fulfillment of group goals and are more willing to subordinate their personal goals to the group's goals (e.g., Triandis et al., 1985; Diener and Diener, 1995).

Taken together, these perspectives paint a picture of people with a cooperative disposition as motivated to understand and uphold group social norms, satisfied by group interaction, and expecting cooperative behavior from others—but able to respond individualistically if others initiate such behavior. In contrast, individualistic people are more concerned with their personal goals and attitudes, expect that others will behave in a similarly self-interested manner, and are less flexible in their responses to others' behaviors. The combination of their self-interested orientation and their lack of cooperative behavior, even in response to cooperative behaviors by others, suggests that individualistic people will show less adaptation, or cooperative behavior, in response to the demands of a collectivistic organizational culture than will cooperative people. By contrast, those with a disposition to cooperate may be more malleable, behaving cooperatively in the collectivistic culture and behaving noncooperatively in the individualistic culture. This suggests that if the behavioral expression of personality dispositions is conditional on situations, rather than manifested similarly across all situations, changes in cooperative behavior are particularly likely in different situations (Wright and Mischel, 1987). More formally, we hypothesize:

Hypothesis 2: People with a high disposition to cooperate will behave more cooperatively in organizational cultures that emphasize cooperation than in organizational cultures that emphasize individualism, while individualists' lack of cooperative behavior will vary less across the two culture conditions.

We modified a business simulation to test the influence of personal cooperativeness and organizational culture on cooperative behavior. We used an experimental design so that we could better isolate culture and personality factors, compare them, and identify specific behavioral outcomes.

METHOD

Subjects

One hundred thirty-nine full-time first-year master's of business administration (MBA) students, enrolled in a mandatory introductory organizational behavior course at a midwestern university participated in this study. Twenty-seven percent were women, 70 percent were white, and 25 percent were not U.S. citizens. The subjects' mean age was 27.28 years, and they had an average of 5.05 years of full-time work experience. These subjects represented a subset (54 percent) of a larger study on organizational culture and group effectiveness. This subset consisted of those students who both participated in the larger study and who completed personality questionnaires relevant to this study. The subjects were unaware of any connection between the questionnaire and their participation in the

business simulation. The sample that participated in this study was similar to the larger sample and, more generally, to the average profile of MBA students enrolled in this graduate school. There were no significant differences between mean scores on data common to the smaller and larger sample, which includes all study variables except for the personality data.

The Looking Glass Simulation Procedure

We modified "Looking Glass Inc." (Lombardo, McCall, and DeVries, 1989), a business simulation, to test the hypotheses. This simulation, like the in-basket technique (Thornton and Byham, 1982), is a flexible and engaging way of assessing managerial behavior and potential and team effectiveness. Looking Glass Inc. is more realistic and involving than typical in-baskets because it allows participants to interact with one another during the simulation.

There are 20 managers in the Looking Glass Inc. simulated organization, ranging from plant managers to vice presidents. These managers are divided among three divisions: Advanced Products (seven managers), Commercial Glass (six managers), and Industrial Glass (seven managers). Equivalent numbers of subjects of the same sex, ethnic background, and citizenship were randomly assigned to a role within an organization without regard to their score on the personal cooperativeness measure.

The experimental manipulation was a between-subjects design. Subjects for whom we had collected personality data were randomly assigned (along with students from whom we did not collect personality data) to one of 14 simulated organizations. There were seven individualistic and seven collectivistic culture conditions, and each simulated organization had either a collectivistic or individualistic culture that was presented to all subjects in that condition. Thus, the subjects in each organization were interacting with other subjects who received the same culture manipulation. The 14 organizational simulations were run during two days within a single week. Subjects were asked not to discuss their activities with others who had not yet participated, and debriefing did not occur until all the simulations were complete.

Subjects were given their Looking Glass Inc. packet the night before participating in the simulation. Each packet contained their role assignment, detailed background information about the firm, memos (depending on the role assignment, packets included between 25 and 30 memos on which subjects needed to take action or make a decision, and 5 to 10 informational memos), procedural instructions for the next day, and the manipulation-check questionnaire. Subjects were instructed to review the materials to become familiar with their role, but they were not allowed to make any decisions or discuss the simulation with anyone before participating.

Upon arriving, subjects were directed to their assigned organization, were seated at a desk with their name and job title on it, and were provided with various office supplies.

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Subjects spent two and one-half hours dealing with issues from their in-basket in any way that they chose (written memos to others, conversations with others, on their own, etc.). A messenger service was available if subjects wanted to "mail" memos to other members of their organization. Experimenters' assistants who had been trained not to interfere with the experiment collected and delivered mail every 15 minutes during the simulation. Following the simulation, subjects completed an extensive survey requesting information about their experience during the simulation and asking them to rate their division coworkers, as described below.

Independent Variables

We used a pilot study to develop the personal cooperativeness measure and the culture manipulations. Pilot-study participants were 59 first-year MBA students from a West-Coast university. Nearly 35 percent were women, 29 percent were nonwhite, 40 percent were not U.S. citizens, their average age was 27.12 years, and they had an average of 4.44 years of work experience. Pilot-study participants were also enrolled in a mandatory organization behavior class and completed pilot instruments as part of their class requirements. All students in the class were assigned to a collectivistic or individualistic culture condition, with the exception of one student who was absent on the day of the culture manipulation pilot test.

Pilot-test participants completed an in-basket exercise, rather than the more elaborate Looking Glass Inc. simulation. All participants played the same role, that of a newly appointed plant manager of a hypothetical large electronics manufacturing firm. They were told that they were replacing the previous manager who had died suddenly, that the announcement of their placement had not yet been made, and that they were reviewing their in-basket on a Saturday before leaving for an international trip that could not be canceled. Thus, participants were not able to contact "coworkers," and each worked alone on his or her in-basket tasks.

Experimental manipulation of collectivistic and individualistic culture. We pilot tested three culture manipulations that were subsequently used in the Looking Glass Inc. simulation. First, the culture at Looking Glass Inc. (a different company name was used in the pilot test) was manipulated through the exercise instructions. In addition to providing various administrative information (e.g., organization chart, list of employees, calendar), we added the individualistic or cooperative version of the following paragraph to the company description appearing on the first page of each subject's materials:

The president and founder of Looking Glass Inc., M.L. Smith, is still the driving force of Looking Glass Inc.'s corporate culture. He and the founding senior managers are proud of LG Inc.'s reputation in the industry as an individualistic [or team] organization. At LG Inc. individual effort and initiative [or cooperation and teamwork] are highly valued and rewarded, and competition [or cooperation] among individuals and departments is considered to be the best road toward innovation and corporate success. Both employees and

outsiders categorize LG Inc. as having a very individualistic [or collectivistic] culture.

The second and third manipulations were interspersed between the 20 other items in the in-basket pilot study and between the 30–40 memos in packets distributed to subjects in the main Looking Glass Inc. study. The second culture manipulation consisted of an invitation to an “Individuals [or Teams] are the Reason for our Success” awards celebration. Award winners were listed on the invitation either with individual names (individualistic culture condition) or as entire work teams (collectivistic culture condition). Third, information about subjects’ compensation and bonus was manipulated. In the individualistic culture condition, subjects were informed that their bonus was “based on individual achievement and the individual’s contribution to Looking Glass Inc.’s performance,” and in the collectivistic condition the bonus was “based on teamwork and the team’s contribution to Looking Glass Inc.’s performance.”

To assess the effectiveness of these culture manipulations, pilot-test participants were asked to complete an “Organizational Culture Diagnosis Survey” immediately after turning in their in-basket materials. They rated 13 dimensions of the organizational culture, four of which were relevant to individualism-collectivism, on a 7-point Likert-type scale (from 1 = “extremely uncharacteristic” to 7 = “extremely characteristic”). An ANOVA showed a significant difference in the culture conditions, in the predicted directions. Pilot-test participants accurately assessed differences in how individualistic [$F(1,57) = 25.11, p < .000$] and in how competitive [$F(1,57) = 15.80, p < .000$] their culture was and in how collectivistic [$F(1,57) = 23.14, p < .000$] and team-oriented the culture was [$F(1,57) = 40.27, p < .000$].

Personality measures of cooperation. We also used the pilot study to gather reliability and validity information on the personal cooperativeness measure. We used both self- and peer ratings to develop the measure. While there are existing measures of a closely related construct, individualism-collectivism, we chose to develop our own measure of the disposition to cooperate because existing individualism-collectivism scales do not focus on aspects of a cooperative personality. For example, Wagner and Moch’s (1986) scale assessed attitudes, values, and norms, Erez and Earley’s (1987) scale measured cultural values, and Triandis et al.’s (1988) measure, augmented by Hui’s (1988) scale, examined concern for others in an in-group, differentiation between others in an in-group, and self-reliance. Because the extent to which these measures are independent or overlapping is unclear (Wagner, 1995), and because we were interested in focusing on personality, we preferred to use preexisting measures that were developed and tested explicitly for assessing personality.

Pilot-study subjects were given a take-home packet of paper-and-pencil personality inventories during the seventh week of their school term. Each also completed these inventories for three preassigned classmates with whom he or she was well acquainted (friendship ties were assessed in

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a prior class). Pilot-study subjects were also unaware of any connection between these inventories and their participation in the in-basket exercise and unaware of the study hypotheses.

Personal cooperation was constructed from Likert responses (using a 5-point scale from 1 = "strongly disagree" to 5 = "strongly agree") to two self-assessment measures: (1) the 11-item School Cooperativeness Scale (Roberts, 1991), which assessed subjects' feelings about cooperative behavior in their general study practices and in group projects (e.g., "I find more satisfaction working towards a common group goal than working alone," and "I think cooperation helps everyone in the group"); and, (2) the 12-item Agreeableness Scale from the NEO Five-Factor Inventory (Costa and McCrae, 1985). Sample items include "I would rather cooperate with others than compete with others," and "I believe that most people will take advantage of you if you let them" (reverse-coded). Past research often equates agreeableness and cooperativeness and shows that agreeableness predicts behavioral cooperativeness in work situations (Argyle, 1991; Barrick and Mount, 1991). The internal consistency, or alpha coefficient, for the 23-item personal collectivism scale from the pilot study was .81.

Two indicators provide evidence for the validity of the personal cooperativeness scale. First, convergent validity could be demonstrated by relating this scale to similar person-based constructs. Therefore, four raters (two from industry and the authors) independently sorted the Organizational Culture Profile (O'Reilly, Chatman, and Caldwell, 1991) according to how characteristic each of 54 values would be in an organizational culture emphasizing cooperation as compared with one emphasizing individualism. The raters sorted the values quite similarly (Spearman-Brown prophecy formula for rater agreement = .91, average interrater correlation = .53), and the four profiles were combined to create a template of a cooperative culture. Pilot-study subjects Q-sorted the same 54 values in terms of how desirable each would be in their ideal organizational culture. As predicted, the more cooperative subjects were, the more they desired an organizational culture emphasizing cooperation ($r = .33$, $p < .005$).

Second, we viewed the correlation between self- and peer ratings as representing, in part, the extent to which others recognized the cooperative disposition in a focal person. We computed a mean of the three peer-assessment ratings of the combined 23-item personal cooperativeness scale (interrater reliability = .68). The combined peer-assessment cooperation scale was then correlated with the self-report personal cooperation measure ($r = .48$, $p < .001$). This correlation is higher than typical correlations found between self and peers, which is generally below $r = .30$ (Funder and Colvin, 1988: 152), providing evidence that a cooperative disposition is recognizable and that the scales used to measure it are valid.

For the main study, personal cooperativeness was measured with the self-report version of the scale described in the pilot

study, consisting of the mean of the School Cooperativeness Scale (Roberts, 1991) and the Agreeableness Scale from the Big Five Factor Inventory (John, 1990). We standardized the means of each of the subscales and computed the overall mean. The nonstandardized mean for the scale was 4.94 (s.d. = .64) on a scale of 1 through 7. The interitem reliability of the self-report personal cooperativeness scale was, again, .81. For the analysis of covariance (ANCOVA) described in the results section, we dichotomized personal cooperativeness scores by splitting the sample at the median (z-score median = .011). Thus, the pilot study used peer measures to determine the validity and reliability of the scale, while the main study used only the self-report measure to assess personal cooperativeness, to avoid overburdening subjects.

As described above, subjects were assigned to either a collectivistic or an individualistic culture condition without regard to their personal cooperativeness scores. A *t*-test confirmed that there were no significant differences ($t = -.02$, n.s.) in the level of personal cooperativeness between subjects in the individualistic condition (nonstandardized mean = 4.94, s.d. = .66) and subjects in the collectivistic condition (nonstandardized mean = 4.94, s.d. = .62).

Dependent Variables: Assessing Cooperative Behavior

Three dependent variables, drawn from different sources and methods, were used to assess cooperative behavior in the main study. First, on the follow-up survey each subject assigned a rating from 1 (extremely low) to 7 (extremely high) on a single item that asked how "affiliative, cooperative, and interested in teamwork" each of the other five or six members of their division, including themselves, was during the simulation. Subjects' behavioral cooperativeness during the simulation was calculated as the mean performance evaluation generated by the five or six other division members, excluding each subject's self-rated cooperativeness score. Cronbach's alpha can provide a reliability of the mean of the judges by treating raters as items making up a scale and ratees as cases (e.g., Cronbach, 1951; Nunnally, 1978). The alpha coefficient representing the internal consistency of the five or six ratings by other division members of focal individuals' cooperative behavior was .46.

Second, subjects were asked to report the number of people they met with to address four priority items during the simulation. Because subjects were not instructed to meet with others during the simulation, meeting with a greater number of people may represent a willingness to cooperate to resolve problems. The mean of these four scores was averaged into one scale and used as a self-reported behavioral measure of cooperativeness.

Finally, subjects completed an appraisal-weights task, which involved their responding to a request from the CEO and the Human Resources Department to provide input on how the company's performance appraisal form should be revised. Subjects decided how heavily to weight each of nine characteristics on the performance appraisal form by allocating any number of points to each (including "0")

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points), as long as the nine combined categories added up to 100 points. The performance appraisal categories were as follows: analytic/systematic thinking, communication skills, conceptual thinking, influence, organizational astuteness, planning and organization, results orientation, teamwork, and individual contribution. We then created a ratio of the number of points given to teamwork ("Works effectively with others to create and/or accomplish a shared goal or mission." "Works effectively in a group.") as compared with the number of points given to individual achievement ("Works effectively alone to create and/or accomplish his/her goals and responsibilities." "Takes independent action to address critical issues."). A higher score indicated a greater orientation toward collectivism than individualism.

Control Variables

Since subjects' race, sex, and citizenship could affect their propensity to behave cooperatively, we created dichotomous variables for each and included them as control variables in the analyses. Additionally, because subjects interacted with others, their behavior could be affected by other group members' behaviors. Research has shown that demographic differences among group members causes in-group/out-group biases (Brewer, 1979). Those who are most different in terms of various demographic characteristics, or who are out-group members, are also viewed as less cooperative (Tsui, Egan, and O'Reilly, 1992). Cox, Lobel, and McLeod (1991) found greater cooperative behavior among groups from mixed races or collectivistic traditions than from homogeneous races that emphasized individualistic traditions. Therefore, in addition to measuring simple demography variables, we calculated relational demography scores and included these as controls in all equations. A relational demography score is the difference between a subject and all the other subjects in his or her division on race, sex, and citizenship. Each difference is represented by a score ranging from 0 to 1, and higher scores represent greater differences between the person and other division members on each dimension.

Following Tsui, Egan and O'Reilly (1992), we measured relational demography using the equation $[1/n\sum(x_i - x_j)^2]^{1/2}$ where x_i = the focal individual's score on the dimension (e.g., 0 = male, 1 = female), x_j = each other member's score on that dimension, and n = the number of subjects in the division. For example, in a group of five people with two male, white U.S. citizens and three female, white U.S. citizens, each man would have a relational score for the gender dimension of .78, and each woman would have a gender relational score of .63:

$$\text{Men: } [1/5\sum(0 - 0)^2 + (0 - 0)^2 + (0 - 1)^2 + (0 - 1)^2 + (0 - 1)^2]^{1/2} = (3/5)^{1/2} = .78$$

$$\text{Women: } [1/5\sum(1 - 0)^2 + (1 - 0)^2 + (1 - 1)^2 + (1 - 1)^2 + (1 - 1)^2]^{1/2} = (2/5)^{1/2} = .63.$$

Manipulation Check

As in the pilot test, subjects in the main study completed the Organizational Culture Diagnosis Survey. This was done the night before the simulation, after they reviewed the materials but before they participated in the simulation.

ANOVA results showed significant differences in the expected directions between the culture conditions. Subjects' perceptions of their cultures differed according to their experimental condition, as shown in the two single-item manipulation check measures of individualism: how individualistic the culture was [individualistic culture $x = 5.90$, collectivistic culture $x = 3.81$; $F(1,137) = 52.49$, $p < .000$] and how competitive the culture was [individualistic culture $x = 5.92$, collectivistic culture $x = 4.56$; $F(1,137) = 29.74$, $p < .000$]; and collectivism: how collectivistic the culture was [individualistic culture $x = 4.32$, collectivistic culture $x = 5.35$; $F(1,137) = 11.51$, $p < .001$] and how team-oriented the culture was [individualistic culture $x = 3.93$, collectivistic culture $x = 5.81$; $F(1,137) = 41.97$, $p < .000$].

Subjects also completed the Organizational Culture Diagnosis Survey after participating in the Looking Glass Inc. simulation. The results of this second manipulation check were also significant, in the same direction, for the organizational characteristics described above. Subjects differed across the two culture conditions in their perceptions of how individualistic the culture was [individualistic culture $x = 5.69$, collectivistic culture $x = 3.77$; $F(1,137) = 51.27$, $p < .000$]; how competitive the culture was [individualistic culture $x = 5.07$, collectivistic culture $x = 4.06$; $F(1,137) = 13.73$, $p < .000$]; how team-oriented the culture was [individualistic culture $x = 4.19$, collectivistic culture $x = 5.67$; $F(1,137) = 31.00$, $p < .000$] and how collectivistic the culture was [individualistic culture $x = 4.34$, collectivistic culture $x = 5.40$; $F(1,137) = 16.24$, $p < .000$].

RESULTS

Table 1 reports the descriptive statistics and zero-order correlations among the variables. Correlations among dependent variables reveal some evidence of convergence. For example, rated cooperative behavior was positively correlated with interaction with others and the appraisal-weights task.

Hypothesis Tests

We used ANCOVA to examine the influence of personal cooperation (high or low), organizational culture (individualistic or collectivistic), and the interaction of the two, on the three dependent variables measuring subjects' cooperative behavior during the simulation. Control variables entered in all of the analyses consisted of simple demography variables (sex, age, and citizenship), as well as comparable relational demography variables measuring subjects' similarity to others.

Hypothesis 1 predicted two effects: (1) that cooperative subjects in the matched cooperative condition would behave significantly more cooperatively than would subjects in the other three conditions, and (2) that individualistic subjects in the matched individualistic condition would behave significantly less cooperatively than subjects in each of the other three conditions. These effects were tested using a priori contrasts comparing the two matched groups,

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Table 1

Means, Standard Deviations, and Correlations among Variables

Variable	N	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
Simple demography													
1. Race	139			-									
0 = White		69.8%	-										
1 = Non-white		30.2%	-										
2. Sex	139			-.04	-								
0 = Male		73.4%	-										
1 = Female		26.6%	-										
3. Citizenship	139			.52*	-.05	-							
0 = U.S.		74.8%	-										
1 = Other		25.2%	-										
Relational demography													
4. Race	138	.42	.39	.67*	-.13	.46*	-						
5. Sex	138	.22	.31	.46*	.19*	.43*	.53*	-					
6. Citizenship	138	.34	.34	.60*	-.23*	.62*	.83*	.51*	-				
7. Disposition to cooperate	139			.07	.05	.02	.00	-.02	.03	-			
0 = Lower (individualistic)		50.4%	-										
1 = Higher (cooperative)		49.6%	-										
8. Culture	139			.09	.02	.06	.08	.25*	.03	-.11	-		
0 = Individualism		42.0%	-										
1 = Collectivism		58.0%	-										
9. Cooperative behavior as rated by coworkers	138	5.07	.83	.06	.10	.04	-.04	-.01	-.07	.19*	.31*	-	
10. Interaction with others	137	3.55	1.94	-.10	.10	-.22*	-.15	-.19*	-.19*	.25*	.08	.21*	-
11. Appraisal-weights task	99	1.98	1.78	.17	-.08	.05	.12	.09	.08	.00	.49*	.26*	.15

* $p < .05$, two-tailed test.

respectively, with each of the three other conditions. Each comparison is presented in the last column of Table 2.

Table 2 shows that cooperative subjects in the collectivistic culture (group 4) were significantly more cooperative than individualistic subjects in the individualistic culture (group 1), as indicated by their coworkers' ratings of cooperativeness ($F = 17.03, p < .001$), the number of people they reported interacting with ($F = 12.60, p < .001$), and their preference for collectivism over individualism in the appraisal-weights task ($F = 16.79, p < .001$). The matched cooperative subjects (group 4) also demonstrated significantly more cooperative behavior than did individualistic subjects in the collectivistic culture (group 2) for rated cooperative behavior ($F = 11.68, p < .001$), interactions with others ($F = 6.07, p < .05$), and the appraisal-weights task ($F = 3.98, p < .05$). The matched cooperative subjects (group 4) demonstrated significantly higher cooperative behavior than the mismatched cooperative subjects (group 3) for cooperativeness rated by coworkers ($F = 20.40, p < .001$) and the appraisal-weights task ($F = 29.73, p < .001$), but only a marginally significant difference emerged for the number of people subjects interacted with ($F = 1.93, p < .10$).

Subjects in the matched individualistic condition (group 1) behaved less cooperatively than the subjects in the matched cooperative condition (group 4) across the three dependent variables, as reported above. They were also significantly less cooperative than individualistic subjects in the collectivistic culture (group 2) on the appraisal-weights task ($F = 6.80, p < .01$). Only a marginally significant difference emerged for the number of people subjects interacted with

Table 2

Analysis of Variance of Personal Cooperativeness, Organizational Culture, and Subjects' Cooperative Behavior*

Dependent Variable	Overall mean	Low Personal Cooperativeness		High Personal Cooperativeness	
		Individualistic culture (1)	Collectivistic culture (2)	Individualistic culture (3)	Collectivistic culture (4)
1. Cooperative behavior as rated by coworkers	5.07 (.83)	4.77 (.65)	5.02 (.84)	4.75 (.86)	5.61 (.64)
		<i>N</i> = 25	<i>N</i> = 43	<i>N</i> = 33	<i>N</i> = 37
2. Mean self-reported interactions per issue	3.55 (1.94)	2.63 (1.29)	3.32 (1.72)	3.72 (1.50)	4.35 (2.56)
		<i>N</i> = 25	<i>N</i> = 42	<i>N</i> = 33	<i>N</i> = 37
3. Appraisal-weights task	1.98 (1.78)	1.15 (1.35)	2.39 (1.57)	.69 (.53)	3.22 (2.17)
		<i>N</i> = 17	<i>N</i> = 35	<i>N</i> = 23	<i>N</i> = 24

* $p < .05$; ** $p < .01$; *** $p < .001$; two-tailed tests.

* Adjusted means are reported, controlling for race, sex and citizenship using both simple and relational demographic measures.

† Comparisons are all a priori with the exception of the comparison between groups 2 and 3, which was not used in any hypothesis test and was tested with Scheffe's post-hoc test.

‡ $p < .05$, Scheffe post-hoc test.

($F = 2.10, p < .10$), and no significant difference emerged for rated cooperative behavior ($F = 1.49, n.s.$). Finally, subjects in the matched individualistic condition (group 1) reported interacting with significantly fewer people than cooperative subjects in the individualistic culture (group 3) ($F = 4.94, p < .05$), but no significant differences emerged for rated cooperativeness ($F = .01, n.s.$) or for the appraisal weights task ($F = .83, n.s.$). Of the 15 nonredundant comparisons predicted in hypothesis 1 (counting the comparison between the matched groups 1 and 4 only once), 10 are significant in the predicted direction, two are marginally significant in the predicted direction, and the remaining three are not significant. Hypothesis 1 is, therefore, partially supported.

Testing hypothesis 2 takes the analyses in hypothesis 1 a step further by examining the interaction of personal cooperativeness and culture. We compared the difference in level of cooperative behavior between those with a high disposition to cooperate in the two culture conditions (groups 3 and 4) with the difference between those with a low disposition to cooperate in the two culture conditions (groups 1 and 2). As shown in Table 2 and Figure 1, subjects' cooperative behavior as rated by coworkers is lower and does not differ significantly for individualistic subjects, regardless of whether their organizational culture emphasized individualism or collectivism. In contrast,

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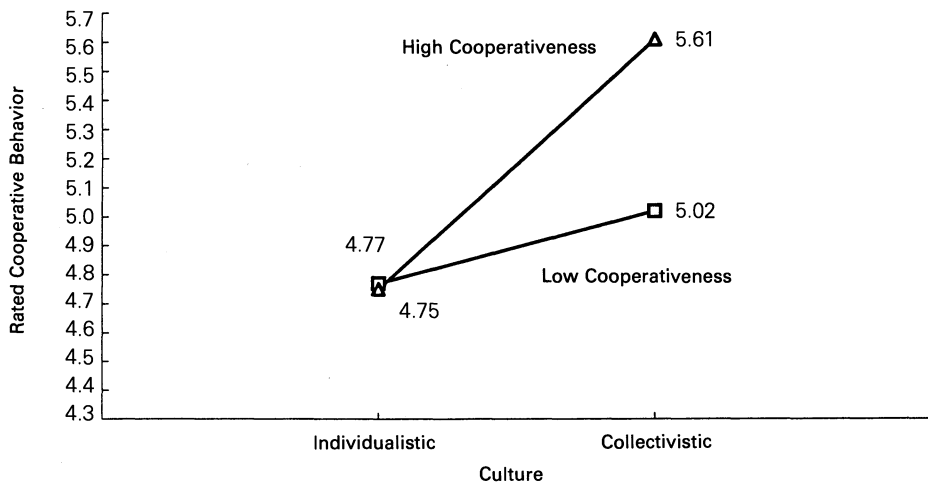
Table 2 (Continued)

F-test for Personal Cooperativeness	F-test for Organizational Culture	F-test for Interaction	Comparison of Meanst
4.59*	15.56***	5.18*	1 vs 2 1 vs 3 1 vs 4*** 2 vs 3 2 vs 4*** 3 vs 4***
10.85***	3.92*	.01	1 vs 2 1 vs 3* 1 vs 4*** 2 vs 3 2 vs 4* 3 vs 4
.32	31.27***	3.92*	1 vs 2** 1 vs 3 1 vs 4*** 2 vs 3† 2 vs 4* 3 vs 4***

cooperative subjects in collectivistic cultures were rated as significantly more cooperative in the collectivistic culture condition than comparable subjects were in the individualistic culture condition. This comparison ($x_1 = 4.77$ vs. $x_2 = 5.02$; $F = 1.49$, n.s.; compared to $x_3 = 4.75$ vs. $x_4 = 5.61$; $F = 20.40$, $p < .000$) is significant, as shown by the significant interaction term in the ANCOVA analysis ($F = 5.18$, $p < .05$).

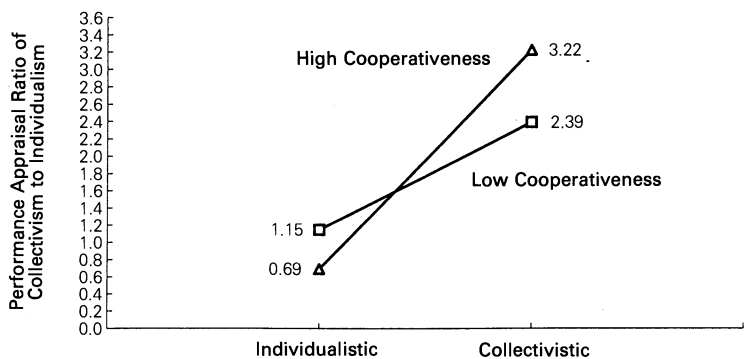
As shown in Figure 2, a similar pattern emerged for the extent to which subjects preferred rewarding collectivistic or individualistic behaviors when revising the company's

Figure 1. Interaction of personal cooperativeness and organizational culture on cooperative behavior as rated by coworkers.



performance appraisal form in the appraisal-weights task. Subjects with a higher disposition to cooperate emphasized collectivism in their appraisal-weights task significantly less⁴ in an individualistic organizational culture than in a collectivistic culture. Subjects with a low disposition to cooperate in the two conditions also differed in their relative emphasis on collectivism versus individualism in the appraisal-weights task but did so significantly less than the subjects with a high disposition to cooperate ($F = 3.92$, $p < .05$). Taken together, results for these two dependent variables show that subjects with a high disposition to cooperate behaved more consistently with their culture condition, cooperatively in the collectivistic culture and individualistically in the individualistic culture. Individualistic people, however, showed more consistent levels of individualistic behavior regardless of whether their culture emphasized individualistic or collectivistic norms. No significant interaction effect emerged for the number of people subjects reported interacting with ($F = .01$, n.s.); thus hypothesis 2 was also partially supported.

Figure 2. Interaction of personal cooperativeness and organizational culture on the appraisal-weights task.



DISCUSSION AND CONCLUSIONS

Hypothesis 1 focused on the level of cooperative behavior emerging from person-situation matches. When subjects and the simulated organizational culture they worked in were both more cooperative than individualistic, these cooperative subjects were rated by coworkers as behaving more cooperatively, met and worked with more of their coworkers, and emphasized collectivism over individualism in recommendations for revising the organizations' performance appraisal rating criteria. When both the person and situation emphasized less cooperativeness, however, lower cooperative behavior emerged for some indicators, (as predicted) but not for coworkers' ratings of cooperative behavior. These findings are somewhat consistent with typical congruence findings in that person and situation characteristics had a stronger combined effect than either alone, particularly when personality and organizational culture both emphasized cooperativeness. But the mixed findings here also require considering the interaction between personal cooperativeness and organizational culture, as specified in hypothesis 2.

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Hypothesis 2 predicted that individualists would vary their cooperative behavior less than cooperative people across the two organizational cultures, a pattern that we found for the appraisal-weights task, and coworkers' ratings of subjects' cooperative behavior. Coworkers also rated the two groups of individualists similarly, regardless of organizational culture, which is consistent with hypothesis 2 but is only partially consistent with hypothesis 1, which predicted a difference between the individualists matched with and those mismatched with culture. Hypothesis 2 was not supported for the variable examining the number of people subjects interacted with. Because no differences emerged either between cooperative people in the two cultures or between individualists in the two cultures, the interaction assessing the relative difference between these personality types was not significant. It appears that interacting with others is more closely related to one's personality (those with higher dispositions to cooperate interact more with others) than to the demands of the situation.

The Influence of Situations on the Relationship between Personality and Behavior

Why did individualists in the collectivistic culture display less cooperative behavior, consistent with their personality? And why did subjects with a high disposition to cooperate show relatively low levels of cooperative behavior in the individualistic culture, consistent with situational norms? Kelley and Stahelski (1970b) in research on two-person prisoner's dilemma games, argued that individualists failed to behave more cooperatively in response to cooperative moves by an opponent because they failed to perceive the differences in opponents' self-interested and cooperative behavior; while cooperative subjects adjusted their behavior to the individualistic culture because they were more accurate in discriminating among cooperative and individualistic moves by opponents. But results from our culture manipulation check do not support Kelley and Stahelski's interpretation. The Organizational Diagnosis Survey showed no difference in the accuracy with which subjects high and low on the disposition to cooperate perceived the emphasis in each of the two cultures. This suggests that individualistic subjects distinguish the culture cues as accurately as cooperative subjects, but they do not respond to the collectivistic norms.

This interpretation can be illustrated with a typical written explanation from a subject in an individualistic culture condition who had a disposition to cooperate. In response to the "Employee Appreciation" issue, he explained why he chose to give his employees a gift certificate (individualistic choice) instead of a plant picnic for the same cost (cooperative choice): "People like cash. Individuals probably don't like picnics together." Using the word "probably" suggests that the subject speculated about what motivates individualistic people, since it may not be what motivates him. But the comment also shows a willingness to adjust and make decisions based on what his employees would like, regardless of whether it coincides with his own preferences. This contrasts with typical comments from individualistic subjects in the collectivistic culture. For

example, in explaining why she chose the "Decision Making and Personal Growth Training Program" (individualistic choice) over the "Management Interaction–Team Training Program" (cooperative choice), one subject said: "Team orientation is already there, they need to know something about themselves." Her comment may reflect a willingness to go against what she knows is the prevailing "team" culture in order to impose her individualistic preferences. This interpretation is consistent with research showing that even when people understand the benefits of cooperation and the detriments of self-interest in interdependent settings, they often choose to behave individualistically. For example, economists were found to be significantly less likely to contribute to charities and more likely to defect in prisoner's dilemma games than noneconomists, despite their clear understanding of the benefits of cooperation (Frank, Gilovich, and Regan, 1993). This suggests that managers attempting to encourage cooperation need to realize that individualists may require greater persuasion and may never actually adapt to collectivistic demands.

Under what conditions might individualistic people respond to collectivistic demands? Axelrod (1984) suggested three ways of promoting cooperation. First, cooperation can be enhanced by changing payoffs to make cooperating more appealing and defection less attractive, for instance, by making individual rewards contingent on cooperation in teams. Thus managers should carefully construct reward schemes (e.g., Petersen, 1992). Second, cooperation can be reinforced by making the future more salient than the present and allowing members to use the threat of retaliation to reduce defection. This is consistent with research showing that longer time horizons, specifically manifested in lower employee turnover, contribute to cooperative decision making (e.g., Mannix and Loewenstein, 1994). Third, cooperative orientations can be enhanced by teaching people values, facts, and skills that will promote cooperation, such as the importance of reciprocity and how to recognize social norms.

This study adds to congruence research by showing that when people have the requisite skills, knowledge, and inclination to behave in accordance with situational demands, they will do so. It also adds to psychological research on the behavioral expression of personality by showing that people who tend to behave individualistically behave more consistently, even in situations emphasizing cooperation. One intriguing question is whether these results would differ if the same study were conducted in a country that emphasized collectivism rather than in the United States, which emphasizes individualism. The dominant response of those socialized and working in individualistic nations may be self-interest, while the dominant response of those socialized and working in collectivistic nations may be cooperation. This suggests that our second hypothesis may actually be reversed in collectivistic nations: People with a low disposition to cooperate may behave individualistically in response to an individualistic organizational culture and cooperatively in response to a collectivistic organizational culture, while people with a high disposition to cooperate

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may be the ones to show less variance in their highly cooperative behavior across the two types of organizations because they feel secure by adhering to the dominant norms of society.

Findings from this study raise a more general question about whether cooperative people are more malleable than others across a wide array of situations or whether these results are specific to the cooperative dimension examined here. One consideration is that cooperation is fundamental to how people approach interpersonal relationships, suggesting that our results may apply to other situations requiring interpersonal contact. Further, cooperative people reported interacting with more people in the Looking Glass simulation, regardless of their organizational culture. Greater interaction with others may provide more opportunities for cooperative people to be influenced by those around them. The disposition to cooperate may also be related to other characteristics that have been shown to relate to openness to situational influence. For example, self-monitoring (measured with Snyder's, 1987, 18-item, Likert-type self-monitoring inventory), which has been linked to openness to socialization among new organizational recruits (Chatman, 1991), was significantly correlated with personal cooperativeness among our pilot-study subjects ($r = .27$; $p < .04$). Other characteristics may be similarly related to behavioral plasticity. Research shows that people who are low on self-esteem are much more susceptible to situational demands than people high on self-esteem. People with low self-esteem are more negatively affected by chronic stressors such as role conflict, and their performance is more dependent on the supportiveness of their work group (e.g., Brockner, 1988). Future research might more directly investigate the extent to which cooperative people's behavior is more malleable than individualists'. There may be a set of characteristics, such as cooperation, self-monitoring, and self-esteem that contribute to how malleable people are across different situations. Identifying such characteristics could improve predictions of the behavioral expression of personality both across time and situations and, in particular, the extent to which the content of an organization's culture and certain organizational processes will influence members' behaviors.

Future research might also investigate other matches and mismatches to understand how different situations influence the relationship between dispositions and behavior. For example, will less creative people become more innovative in organizations that emphasize creativity and risk taking, or will creative people become less creative when organizational cultures discourage new ideas and taking risks? Similarly, examining mismatches between honest people and dishonest organizations may help to identify if and when good people "turn bad." Findings from this study suggest that investigating such questions requires examining the specific personal and situational characteristics to predict how their combined effects will influence behavior. Uncreative people working in a creative organization, for example, may increase their creativity less than creative people working in uncreative organizations will reduce their

creative behavior (e.g., Amabile, 1988). And the societal stigma and potential punishment (e.g., going to jail) may be strong enough that honest people may resist becoming dishonest even when dishonesty is promoted in their surroundings, while dishonest people may become much more honest when strong norms for honesty exist. Studying these kinds of matches between personality and culture could reveal aspects of organizational behavior and events that otherwise remain a mystery.

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