Intergroup Attitudes and Competition Over Limited Resources

by

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Abstract

According to realistic conflict theory (RCT), people develop negative attitudes towards others as a result of competition with those others over limited resources. I hypothesized that participants would change their opinions of others in a greater negative direction if those others were competitive in resource use than if those others are cooperative. Additionally, I hypothesized that the participants' own resource use would influence how they changed their opinions of the others. Participants were asked to complete a ten-item trait-rating questionnaire before and after competing in a simulated fishing environment against a simulated group that fished either a little (cooperative opponent) or a lot (competitive opponent). As predicted, when fishing against competitive opponents, participants changed their ratings in a more negative direction than when fishing against cooperative opponents. In addition, participants' own fishing behaviour influenced some of their rating shifts. I discuss an alternative explanation of the results as based on group identity processes (Tajfel & Turner, 1979), and suggest that the effects of such processes should be directly compared with competition over resources in the same study. Limitations of the study are discussed along with potential solutions.

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The world is increasingly characterized by economic and social interaction between diverse groups of people. Such intergroup contact may be friendly or simply indifferent, but relations are often hostile. Inter-group strife has been manifested throughout human history in many ways, the most obvious being wars between nations. Such negative relations are usually accompanied by negative attitudes held by groups against each other. A lot of psychological research has been done with a focus on relations between individuals but recently psychologists have been also focusing on inter-group relations (Sherif, 1953; Tajfel & Turner, 1979).

One important theory of inter-group relations was first put forward by Muzafer Sherif (1953; 1966), who proposed that intergroup hostility, both behavioural and attitudinal, is a result of competition over scarce resources. Campbell (1965) called this realistic conflict theory (RCT). RCT is unique because it proposes that concrete scarce resources, such as crude oil, are considered potential important factors in intergroup relations. Many other psychological theories focus on cognitive factors, such as the experience of belonging to a group (Tajfel & Turner, 1979; Rothbart, 1993). The resources do not have to be tangible, as power and status can be considered scarce resources.

Development of Realistic Conflict Theory

Sherif (1953; 1966) developed a model of intergroup relations in which groups may have either compatible or incompatible goals concerning the attainment and maintenance of scarce resources. According to the model, if groups have compatible goals, they are acquiring as much of a resource as they need without decreasing the amount left for each other. If they have incompatible goals, each group's acquisition of resources will reduce the amount that the other group can acquire. Such competition has been suggested

as leading to historical intergroup hostility. Klare (2001) suggests, for example, that access to water has been a major reason for warfare throughout history. He gives the example of the Arab-Israeli War of 1967 as being one that was fought over control of water from the tributaries of the Jordan River. There is still conflict in the region between Israelis and Palestinians, and it can be presumed that much of that conflict is over one major resource, namely, land.

In support of his theory, Sherif (1953, 1966) conducted classic field studies that examined the development of intergroup hostilities among pre-adolescent (12 years of age) boys at summer camps in the United States. He directly manipulated group membership by assigning the boys to different groups. He manipulated intergroup competition among the boys by engaging them in team sports and other events in which the two groups were competing with one another for prizes. He found the predicted effects. During the group formation phase, the boys showed only mild interest in the group they did not belong to, and the interactions were neither overly negative nor positive. During the intergroup competition phase, the groups of boys became increasingly hostile to one another in action and in attitude.

Since Sherif's (1953, 1966) seminal work, many studies have specifically examined the relations between competition for resources and intergroup attitudes and perception. Correlational field research has shown that prejudice and discrimination are related to competition over scarce resources (Bobo, 1983; Brown et al., 1986; Ghosh & Kumar, 1991; Duckitt & Mphuthing, 1998; Corenblum & Stephan, 2001; see also the review by Jackson, 1993). For example, Bobo (1983) found that opposition to one desegregation method (transporting Black American students by bus to mainly White

American schools) was most strongly predicted by the belief that the pace of desegregation was threatening White individuals' valued resources and goals. White Americans in his sample were opposed to the desegregation method even when their responses to attitude measures indicated they supported the civil rights movement generally.

Also, researchers comparing the effects of conflict and social identity found that perceived intergroup conflict of interest (i.e., conflict over resources) predicted intent to aggress more strongly than group identity. This effect remained significant even when mediating variables, namely dehumanization of the out-group and sharpness of distinction between in-group and out-group, were taken into account. The researchers believed these mediators were the results of perceived conflict, in turn causing an increase in the intent to aggress (Struch & Shwartz, 1989).

Further experimental research has been recently conducted in support of RCT. For example, researchers in Canada recently examined the effect of making competition for jobs salient for attitudes toward immigrants and immigration (Esses, Jackson & Armstrong, 1998; Esses, Dovidio, Jackson & Armstrong, 2001). They found that increasing the salience of the success of immigrants in filling jobs resulted in greater opposition to immigration, less favourable views of immigrants, and greater opposition to empowerment of immigrants. Esses et al. suggest that opposition to empowerment is indicative of fear of further competition. Empowered immigrants would be able to compete successfully for scarce resources, especially jobs. Thus, there would be fewer jobs and other resources for non-immigrants. Other researchers have found that white landlords are more willing to rent to some ethnic groups (English Canadians) than others (Haitians, Asian Canadians, and

Italian Canadians) as a result of the perceived value of those other groups to the landlords themselves (Hilton, Potvin, & Sachdev, 1989).

Additional research that bears on the issue has been conducted using social dilemmas, situations in which participants must choose between maximizing their own interests and maximizing collective interests (Komorita & Parks, 1994). The original version of the prisoner's dilemma involved two hypothetical prisoners who have just committed a burglary together and must choose to either implicate the other prisoner (defection) in the burglary or not (cooperation). The payoff schedule can be viewed as a matrix of choices, as shown in Figure 1. The numbers represent the number of years each prisoner will get in jail for their part in the crime, given each prisoner's choice to implicate or not implicate their partner. The first number indicates years of incarceration for Prisoner 1; the second number indicates years of incarceration for Prisoner 2. As can be seen, if one prisoner implicates the other one (defects), and the other one does not implicate (cooperates), the first prisoner will receive no time in prison but the one who is implicated will receive a long sentence. If both implicate each other, they will both receive somewhat shorter sentences. If neither prisoner implicates the other, both will get a much lighter sentence. So defection by one prisoner is better for that prisoner, but if both prisoners defect, both will face severe consequences.

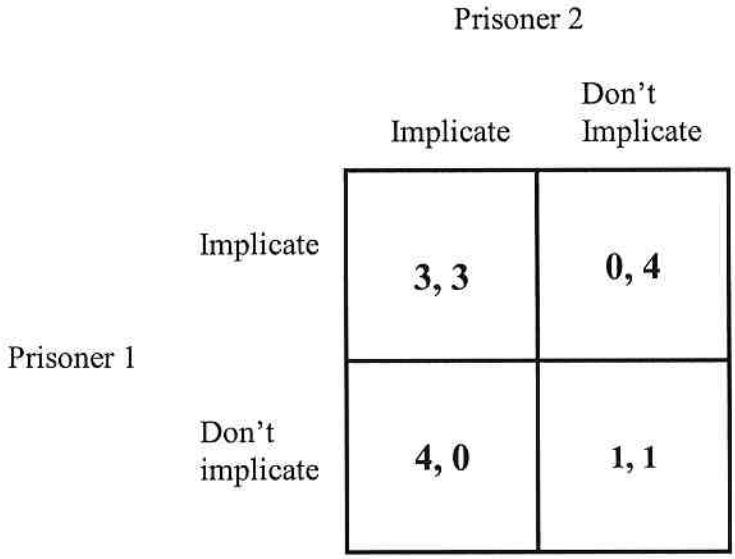

Figure 1. Example of Prisoner's Dilemma choice matrix and payoff schedule. The first number indicates years in prison for Prisoner 1 and the second number indicates years in prison for Prisoner 2.

The dilemma here is based on what is rational for each individual prisoner or what is rational for the prisoners as a team. By cooperating each prisoner risks being punished somewhat if his or her accomplice defects. The accomplice will get no punishment. Therefore, the rational thing for each prisoner to do is defect. However, if both decide to defect, they both run the risk of being punished even more. Thus, what is rational for each prisoner individually is not rational for the prisoners as a team.

A variation of the social dilemma is the resource dilemma (Komorita & Parks, 1994), in which participants choose how much of a simulated resource to harvest. They must choose between harvesting a little at a time, thereby making small personal gains and ensuring abundant future supply, and harvesting as much as possible at any given time, thereby depleting the resource much more quickly.

Another version is the public goods dilemma (Komorita & Parks, 1994), in which individuals choose whether or not to contribute their own resources to a public service or good, such as a hypothetical public broadcasting TV station. If they all contribute, the service or good is guaranteed to be provided. But what occurs is that some individuals may see that they don't need to give as much or at all, especially if the burden of contributions is divided over many contributors. They stop donating (defect). Others in the group notice the defection and decide that it is unfair for them to continue giving, so they also defect. The result may be too few contributions, and the service or good will not be provided, making everyone's situation worse off.

Studies employing variations of social dilemmas have shown that individual participants view competitive opponents as less attractive, less trustworthy, more potent, more fearful, and greedier, compared with cooperative opponents (e.g., Schlenker et al., 1973). They also report their opponent as being less intelligent and less concerned for others when the resource was rapidly depleting (Hine & Gifford, 1996). Results from these studies and other inter-individual focused research were thought by many researchers to generalize to the intergroup level (Jackson, 1993).

More recently, inter-group research has shown changes in attitudes towards others who are perceived to be competitive. Goren (2001) used an intergroup version of the public goods dilemma. He operationalized competition as each group member contributing more to the in-group's pool, thereby increasing their in-group's profit. He found that participants attributed competitive motives to out-group members who were perceived to be competitive, but did not always attribute cooperative motives to out-group members who cooperated. The participants rated their opponents on whether they were motivated by in-

group interest or joint-group interest, in other words, characteristics that were behaviour-specific. Also, their ratings seemed to logically reflect what their opponents were actually doing: if the opponents contributed more as a group, they were perceived to be more competitive and attributed with in-group interest. That is, participants rated competitive opponents as being motivated by maximizing their in-group's profit and by increasing the difference in profit between the in-group and the out-group.

The Present Study

The present study was designed to further examine changes in intergroup attitudes as a function of competition over a simulated resource. Specifically, it was designed to examine shifts in ratings of out-group members on a scale of ten personal traits as a function of competition in a fishing simulation. A fishing simulation was chosen to make the simulated resource more relevant to participants, as fishing is a local British Columbia resource over which there is often conflict. Some of the personal traits used in the scale were more relevant to a competition situation, such as competitiveness, while others were not as obviously relevant, such as laziness. RCT predicts that participants' ratings will be more negative when the out-groups are competitive in fishing and take more fish than when they are cooperative and take less.

Hypotheses

The overall hypothesis was that participants' ratings of the simulated opposing group on a person perception scale would shift in different ways, depending on whether the opposing group was competitive or cooperative in fishing. These rating shifts are operationalized as difference scores (post-test minus pre-test) of the person perception scale. The following hypotheses may be stated more specifically:

1. The rating shifts will be more negative when participants face a competitive simulated opponent group than when they face a cooperative one.
2. Participants' own harvesting behaviour will moderate the relationship between rating shifts and the whether the opponent group is cooperative or competitive. This is to test the partial effects of opponent group competitiveness on rating shifts, controlling for harvesting behaviour.
3. Participants' own harvesting behaviour will be directly related to rating shifts. Competitive participants' rating shifts will be more negative, regardless of the competitiveness of the opponent group.
4. Participants facing the competitive opponent group will be more competitive in harvesting than participants in the cooperative opponent condition.

A model of the hypothesized relationships between variables is presented in Figure 2.

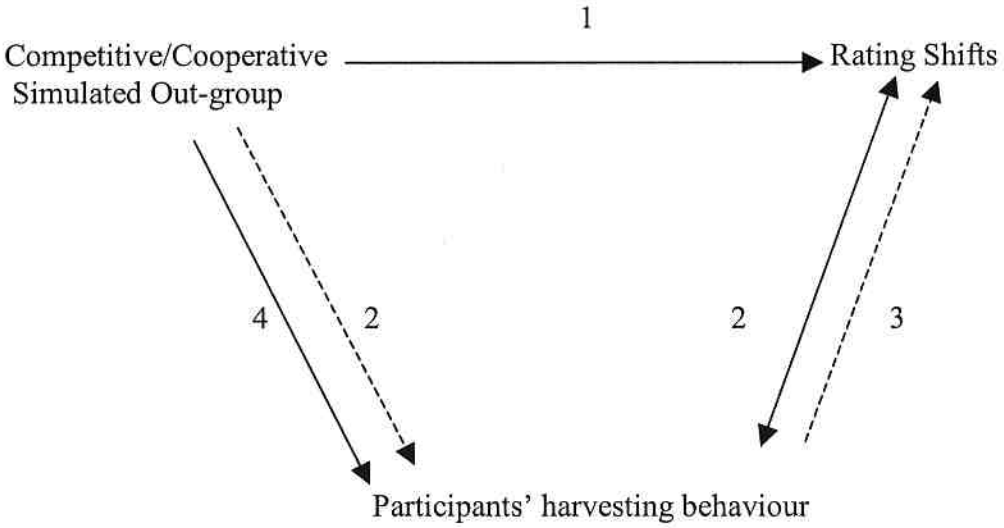

Figure 2. Hypothesized causal diagram of the relationships among variables. Numbers indicate the hypotheses represented.

Participants face either a competitive simulated out-group or a cooperative one. The competitive out-group was programmed to fish up to 20 fish at a time and the cooperative one was programmed to fish as few as four fish at a time. Hypothetically, participants' experience of competition or cooperation from the simulated out-group would affect their post-simulation ratings of the out-group members. The effect would be that participants would change their ratings to more negative ones when facing a competitive opponent group; they would either not change their ratings at all or make their ratings more positive (less negative) when facing a cooperative opponent group (Hypothesis 1). Additionally, the competitiveness of the simulated group may have an effect on the actual fishing behaviour of the participant groups. Presumably, if they notice that their opponents are being competitive, that will drive them to be more competitive themselves. They may feel that, if their opponents are fishing too heavily, then they also have that right (Hypothesis 4). The hypothesized moderating effect of participants' fishing behaviour on the relationship between out-group competitiveness and rating shifts

is such that that relationship would strengthen, weaken, or disappear altogether (Hypothesis 2). No specific prediction was put forward as to which of these three possibilities would emerge. A final hypothesized effect is the correlation between participants' own fishing behaviour and rating shifts. Rating shifts were hypothesized to become more negative as participants would compete in fishing than when they would cooperate (Hypothesis 3).

In addition to the main hypotheses already discussed, it was hypothesized that there would be no sex differences in shifts in trait ratings in either experimental condition. Research has shown that small gender differences do exist in some behavioural dimensions, but these differences are often exaggerated (Oliver & Hyde, 1993; Feingold, 1994).

Method

Participants

One hundred eighty-six students from an introductory psychology course at the University of Victoria participated in this research, 39 males and 147 females; all were approximately 18 to 25 years of age. They participated in 62 groups of three participants each; 30 groups faced a competitive opponent and 32 groups faced a cooperative opponent. Each participant received three course credits for participation.

Materials

Resource use simulation. A computer-based resource-use microworld (Gifford & Gifford, 2000) called FISH 3.1 was used. The program depicts a resource pool of fish, the size of which was programmed to be 300 at the beginning of the simulation. The maximum number of rounds, or seasons, that could be completed was ten, although participants were

not told this. However, the number of seasons actually completed depended on whether or not the resource was depleted prior to completion of the ten rounds. At the end of each round of the simulation, the number of fish left was doubled for the beginning of the next round, up to a maximum of 300. However, if the fish stock was totally depleted before ten rounds were completed, the simulation ended.

The participants were to harvest fish as a group and so were treated as a single fisher. They were fishing at the same time from the same ocean as a fictitious (computer-simulated) group that also acted as a single fisher. The simulated fishers' group was given a programmed 'greed' level of 0.2 or 0.55 (minimum 0.1, maximum 1.0). The 0.2 greed level simulated group harvested about 4 fish at a time, and the 0.55 greed level simulated groups took approximately 20 fish at a time. This was also the way in which the state of the fish stock was controlled. The more the simulated group was programmed to take, the faster the resource depleted. Both the real and simulated groups were permitted to harvest up to 20 fish at a time during any given round and could make as many harvests as they wish until the end of each round.

The simulated group was designated as Group 2 on the screen and this group's activity status ('Fishing' or 'At Port') was given. 'At port' meant that the simulated group was not fishing. Participants were not given any harvesting information (number of fish caught) for Group 2. However, because the number of fish left in the ocean was provided at all times, the participants could infer how many fish Group 2 was taking by observing the change in fish stock, apart from their own harvests.

Person perception measure. The main dependent measure was a scale of ten adjectives or adjective phrases (see Appendix B). These trait items were chosen so that

some were relevant to a competition situation, such as greediness, whereas others were not directly related to competition, such as laziness. Participants were asked to rate how much they agree with the opinion that the opposing group's members all possess each one of the ten traits. Each trait was rated on a seven-point scale, ranging from *strongly agree* (3) to *strongly disagree* (-3).

Introduction questionnaire. A short questionnaire asked the participants their academic major, favourite academic course taken so far, travel preferences, and interest in fishing and boating. Previously completed fictitious copies purporting to be from the other group were given to the actual participants to convince them of the existence of the other group, and to give them an idea with whom they were harvesting. Three acquaintances of the experimenter completed these questionnaires. These questionnaires allowed participants to have some information on their opponents as a basis for their pre-simulation completion of the trait ratings. (See Appendix A for questionnaire).

Procedure

The participants came into the lab in groups of three. After reading and signing the consent form, they were told they would be participating in a study on intergroup attitudes and how they might be affected by use of a shared resource. They were also told they would be participating in the study with another group that was working on another computer in the same building.

Second, they were given the short introduction questionnaires to complete. Upon their completion, the experimenter collected the questionnaires and left the room for five minutes. After returning, she gave the participants the fictitious questionnaires that she said were completed by the other group. Two planned majors were psychology and the final one

was anthropology. One simulated participant was interested in both fishing and boating, one was interested in boating but not fishing, and the final one was not interested in either. The participants were instructed to look over these completed questionnaires and use them as a basis on which to form their initial impressions of and to rate the other group. This was also done to make the other group believable.

Next, the participants completed one copy each of the person perception questionnaire. They rated the opponent group as a whole based on their overall impression of that group. To ensure anonymity, they deposited their copies into a drop box.

Then the experimenter went over the simulation instructions and added information about the harvest limit. After this, she left the room for another five minutes, told the participants she was checking up on the other group, and told them not to start the simulation until she returned. When she returned, the participants completed the simulation.

In groups of three, participants harvested fish over several rounds (seasons) in FISH 3.1, the ocean fishing microworld. During the simulation, they were given continuous feedback as to the state of the fish stock, that is, informed either of rapid depletion or of continued abundant supply.

Measures were taken of the participants' own harvesting behaviour in the form of individual restraint, individual efficiency, total number of fish caught, total amount of money made, and number of seasons completed. Although these measures are individual-based, they were taken for each participant group as a whole because each group acted as one fisher.

Individual restraint (IR) is a measure of cooperation in terms of the number of fish the participant group took during the simulation. A score of 1 indicates full restraint (no

fish taken at all by the participant group), zero indicates that the participant group has taken just enough for the stock to regenerate to its original size, and score of –1 indicates that the participant group has taken all of the fish that are left after the simulated group takes its share. This is referred to as 'maximum greed'. The result is that there are no fish left to allow for regeneration, so the resource is completely depleted (Gifford & Hine, 1997).

Individual efficiency (IE) refers to the number of fish that a participant group can take and still allow for regeneration of the stock to its size at the beginning of a trial. A score of 1 indicates greatest efficiency, with a range of –0.5 for maximum over-harvesting (taking all the fish) and 1.5 for maximum under-harvesting (taking nothing) (Gifford & Hine, 1997). Although taking nothing implies total conservation, it is not ideal in terms of efficiency. Efficiency can be thought of as sustainable resource use, so participant groups can still fish as long as they leave enough fish to replenish to its pre-season size. These individual-based measures were used because each group of participants was considered one fisher.

After the simulation, the participants individually completed a second copy of the person perception questionnaire and also put it into the drop box. Once the study was completed, participants were asked whether or not they would like to meet the other fisher group, and why or why not. This was a way to test their belief in the existence of the other group. Then they were debriefed. Finally, the participant groups were given five cents per fish for the total harvest as was explained to them before they completed the simulation. The money was equally divided among the three group members.

Results

One participant in the cooperative condition did not complete the post-test copy of the questionnaire and so her data was not used. That left 95 participants in the cooperative condition and 90 in the competitive condition.

Of the 185 participants, 27 did not appear to believe that the opponent group was real. This high rate of non-belief is likely because of insufficient measures to make the opponent group believable. This limitation of the study, along with a possible remedy, is discussed in the discussion section of the paper. Examination of the data revealed a difference in results when these 27 cases were excluded. Therefore, it was determined that these 27 cases would be excluded from the main reported results. Results including these cases are contained in Appendix C.

Of the remaining 158 participants, 127 were female and 31 were male. The reason for this gender disparity may be the computerized self-registration system used to recruit first-year psychology students for participation in psychology experiments. More females than males registered to participate in this study. Eighty participants were placed in the cooperative condition and 78 were placed in the competitive condition.

Preliminary Analyses of Harvesting Data

The participant groups' harvesting data were collected and analyzed as a first step. These data are missing for fifteen participants due to clerical error on the part of the researcher; hence any analyses of these variables included 143 participants, 71 in the cooperative condition and 72 in the competitive condition. Most of the 53 groups completed the maximum number of rounds allowed ($M = 8.3$). The participants were generally restrained ($M = .34$) and efficient ($M = .56$) in their harvesting. They were also somewhat efficient, harvesting as much as they could without over-fishing. The means and

standard deviations for the harvesting variables compared by experimental condition are presented in Table 1.

Table 1

Fishing Simulation Descriptive Statistics

	Competitive[a]		Cooperative[b]	
Variable	*M*	*SD*	*M*	*SD*
Restraint	.36	.24	.05	.38
Efficiency	.43	.30	.02	.73
Seasons completed	7.75	2.85	8.86	3.02
Total fish caught	326.29	75.06	809.49	282.38
Total profit	16.39	3.71	40.47	14.12

Note. Total profit is the money made at the end of the simulation by the group (Canadian funds).

[a]n = 72

[b]n = 71

Participant groups facing cooperative opponents were generally less restrained and efficient than those facing competitive opponents. In addition, participants facing cooperative opponents completed more seasons, caught more fish, and made more money than participants facing competitive opponents. Completing more seasons means that there are more opportunities for participants to catch fish, and so the total harvest at the end of the simulation may indeed be larger when participants complete more seasons. These differences were analyzed as part of the main tests of hypotheses.

Transformation and Reliability Analysis of Rating Data

As a first step in the main analyses, the raw scores for the negatively worded items aggressive, competitive, reckless, greedy and lazy were recoded so as to create an overall scale measuring positive person perception. For example, if reckless was rated as –3, it became 3, and vice versa. This created a measure in which a rating score of -3 indicated the most negative rating on any of the ten trait items and 3 indicated the most positive rating.

Using Cronbach's alpha, internal reliability for the pre-test and post-test were .58 and .83 respectively. The lower reliability for the pre-test may have been because participants had very little information about their opponents. All they knew was on the completed introduction questionnaires given to them before completing the person perception scale pre-test. They may have been reluctant to make any distinct judgments based on the information given and so their ratings were random.

The ten items were then transformed into difference scores by subtracting the pre-test scores from the post-test scores to determine the shift in rating from before to after the simulation. This created a measure in which a larger negative difference score indicated a more negative shift in rating. These difference scores were used in all subsequent analyses. The means and standard deviations for the difference scores in the cooperative and competitive opponent group conditions are given in Table 2. Cronbach's alpha for the difference score scale was .77.

Table 2

Person Perception Scale Difference Scores

	Competitive[a]		Cooperative[b]	
Variable	*M*	*SD*	*M*	*SD*
Helpful	-1.76	1.67	-0.09	1.41
Intelligent	-2.15	2.03	-1.68	1.58
Friendly	-1.23	1.44	-0.40	1.33
Concerned for others	-1.63	1.70	0.28	1.42
Open-minded	-1.56	1.37	-1.13	1.55
Aggressive	-1.24	1.73	0.44	1.90
Lazy	-0.41	1.87	-0.68	1.67
Greedy	-1.85	1.82	0.45	1.86
Reckless	-1.73	1.72	0.31	1.67
Competitive	-0.69	1.44	1.31	1.85
Total	-14.26	8.25	-1.18	7.90

Note. The values in this table are for difference scores (post-test – pre-test).

[a] n = 78. [b] n = 80.

Participants generally shifted their ratings in a more negative direction when rating competitive opponents than when rating cooperative opponents. The exception is for rating shifts for laziness. The ratings shifts of laziness of cooperative opponents appear to be slightly more negative than laziness rating shifts of competitive opponents. These differences will be analyzed as part of the main analyses.

Hypothesis Tests

The experimental condition had two levels. Participant groups faced either a competitive or cooperative fishing opponent group. Hypothesis 1 specified that participants would rate competitive opponent groups more negatively than cooperative opponent groups. To determine whether there was an overall difference in rating shifts between the two experimental levels, and to examine gender effects, a 2-way ANOVA was computed on the summed difference scores. Significant effects of condition were found, $F(1, 154) = 67.69$, $p < .001$, but not of gender, $F(1, 154) = 2.31$, $p = .13$, or the interaction, $F(1, 154) = .03$, $p = .87$. Participants in the competitive condition changed their ratings to more negative ones overall (competitive $M = -14.26$ and cooperative $M = -1.18$).

Next, a 2-way MANOVA was computed on the individual scale items, using condition and gender as factors. Using Wilks' criterion, the combined scale difference scores were significantly affected by condition, $F(10, 145) = 9.18$, $p < .001$, but not by gender, $F(10, 145) = 1.52$, $p = .14$. The interaction was also not significant, $F(10, 145) = .75$, $p = .67$. That is, participants changed the ten trait ratings of competitive opponents in a more negative direction overall, regardless of gender.

Univariate results for the experimental condition are presented in Table 3. Participants did not change their ratings of competitive and cooperative opponents differently on intelligence, open-mindedness or laziness (all $ps > .05$). The rating shifts of competitive opponents were more negative on the remaining seven person perception items (all $ps < .05$). Gender had no effect on rating shifts: men and women did not differ in how their ratings of their opponents shifted. None of the interactions were significant, possibly due to the fact that gender had no effect.

Table 3

Multivariate Analysis of Variance for Person Perception Ratings

Source	*Variable*	*Univariate F*
Condition	Helpful	28.08**
	Intelligent	.83
	Friendly	11.05*
	Concerned for others	35.60**
	Open-minded	.38
	Aggressive	27.88**
	Lazy	2.33
	Greedy	50.13**
	Reckless	44.19**
	Competitive	49.97**
Gender	Helpful	2.02
	Intelligent	0.12
	Friendly	1.60
	Concerned for others	1.87
	Open-minded	1.39
	Aggressive	.27
	Lazy	.95
	Greedy	.42
	Reckless	.96

Source	*Variable*	*Univariate F*
Condition X Gender	Competitive	2.24
	Helpful	.06
	Intelligent	2.84
	Friendly	.23
	Concerned for others	.05
	Open-minded	2.40
	Aggressive	1.22
	Lazy	1.83
	Greedy	1.92
	Reckless	1.29
	Competitive	2.40

*p < .05

**p < .001

The hypothesized moderating effect of participants' own fishing behaviour on the relationship between shifts in their ratings and condition was examined (Hypothesis 2). Partial correlation analyses were computed between experimental condition and the ratings, controlling for restraint and efficiency in harvesting, the number of simulation seasons completed, and the total number of fish caught during the simulation. Pearson correlations without any control variables were computed to provide results for comparison. The competitive out-group condition was given the categorical value of two and the cooperative

out-group condition was given the value of one. Thus, as out-group competitiveness increased from one to two, it was possible to determine if rating shifts increased in negativity or became more positive. The participants' harvesting behaviour variables were partialled out to examine if their exclusion would affect the correlations. The relationship between the summed rating change and condition was not affected when the four harvesting behaviour measures were controlled for (Pearson $r = -.64$, $p < .001$, partial $r = -.38$, $p < .001$). This is the same result that was obtained from the univariate analysis of variance. The Pearson and partial correlations for the ten person perception items are shown in Table 4.

Table 4

Correlations Between Ratings and Opponent Group Competitiveness

Variable	*Pearson r*[a]	*Partial r*[b]
Helpful	-.49***	-.18*
Intelligent	-.18*	-.14
Friendly	-.32***	-.15
Concerned for Others	-.54***	-.28**
Open-minded	-.15	-.02
Aggressive	-.39**	-.28**
Lazy	.09	.13
Greedy	-.52***	-.35***
Reckless	-.52***	-.30***
Competitive	-.50**	-.32***
Total	-.64***	-.34***

Categorical value for cooperative out-group is 1; for competitive out-group is 2

[a] No harvesting variables controlled for.

[b] Controlled for efficiency, restraint, number of seasons completed, and total number of fish caught by the participant group

*p < .05

**p <.01

***p < .001

n = 143

When comparing the analysis of variance results with the partial correlation, it appears

that the only moderated difference in rating shifts is for friendliness (partial $r = -.15$, $p = .08$).

When participants' own fishing behaviour was controlled for, they changed their friendliness ratings in the same way regardless of the competitiveness of the opponent group. None of the other relationships between rating shifts and condition were affected by the harvesting variables. When comparing the partial correlation with the Pearson correlations, relationships between condition and both friendliness and intelligence rating shifts are moderated by the harvesting variables. This is because a significant Pearson correlation was obtained between condition and shifts in ratings of intelligence (Pearson $r = .18$, $p < .05$). Such a relationship was not found using the multivariate analyses of variance.

Computing Pearson correlations between the rating difference scores and the four harvesting variables included previously provided a test of Hypothesis 3 that a relationship between these two sets of variables would exist. The correlations were significant between the summed change in ratings and restraint ($r = -.30$, $p < .001$), efficiency ($r = -.23$, $p < .01$), and total number of fish caught ($r = .48$, $p < .001$). The correlation between the summed change in ratings and number of seasons completed was non-significant ($r = .03$, $p = .74$). When participants were more restrained and efficient, and caught more fish, their ratings shifted more negatively overall. The number of seasons made no difference in the rating shifts. Intercorrelations between all the dependent variables are presented in Table 5.

Table 5

Intercorrelations Between Dependent Variables

Variable	Pearson r							
	Restraint	Efficiency	Seasons Completed	Total Fish Catch	Helpful	Intelligent	Friendly	Concerned for Others
Restraint	–							
Efficiency	.96***	–						
Seasons Completed	.70***	.70***	–					
Total Fish Catch	.05	.19*	.51***	–				
Helpful	-.29***	-.22**	-.04	.40***	–			
Intelligent	-.24***	-.20*	-.19*	.06	.47***	–		
Friendly	-.13	-.09	-.07	.25**	.45***	.16*	–	
Concerned for Others	-.21*	-.13	-.11	.43***	.48***	.18*	.42***	–
Open-minded	-.20*	-.14	-.17*	.13	.34***	.29***	.13	.16
Aggressive	-.07	-.06	.14	.29**	.28**	-.04	.41***	.51***
Lazy	.00	-.01	-.01	-.07	-.06	.19*	-.01	-.21*
Greedy	-.22**	-.18*	.04	.36***	.33***	-.08	.35***	.49***
Reckless	-.16*	-.11	.09	.44***	.42***	.07	.31***	.52***
Competitive	-.19*	-.16	.09	.35***	.24**	-.12	.26**	.48***

Variable	Pearson r					
	Open-Minded	Aggressive	Lazy	Greedy	Reckless	Competitive
Restraint						
Efficiency						
Seasons Completed						
Total Fish Catch						
Helpful						
Intelligent						
Friendly						
Concerned for Others						
Open-minded	–					
Aggressive	.12	–				
Lazy	.19*	-.22*	–			
Greedy	.11	.61***	-.15	–		
Reckless	.06	.54***	-.09	.68***	–	
Competitive	-.04	.59***	-.23*	.61***	.61***	–

*$p \leq .05$

**$p < .01$

***$p < .001$

n = 143

As expected, there was no significant correlation between rating shifts of laziness and any of the harvesting variables. The number of seasons completed only affected shifts in ratings of intelligence and open-mindedness; efficiency had an effect on shifts in ratings

of helpfulness, intelligence, and greediness. Efficiency and restraint had similar effects on only three traits. Participants who were both more efficient and restrained in harvesting shifted their ratings of their opponents more negatively on intelligence, helpfulness, and greediness. The total number of fish caught was significantly correlated with seven out of the ten items, except for laziness, intelligence, and open-mindedness. This is a reversal of the pattern of correlations for number of seasons completed. Shifts in ratings of aggressiveness were only significantly correlated with total fish catch.

The above results were found without controlling for experimental condition. In order to test for the moderating effects of condition on the relationship between participants' own harvesting and the rating shifts of their opponents, correlation analyses were run on the rating difference scores and the four harvesting variables, controlling for competitiveness of the opponent group.

All correlations between the summed rating difference score and the four harvesting variables were non-significant (all *ps* > .1). The correlations for the ten items are presented in Table 6. Most of the previous significant correlations became non-significant when condition was added to the analyses. The only remaining significant correlations were between intelligence rating change and restraint, intelligence rating change and number of seasons, and open-mindedness and number of seasons completed. It appears, then, that the competitiveness of the opponent group affects the relationship between participants' harvesting and rating shifts very strongly.

Table 6

Correlations Between Ratings and Participants' Restraint, Efficiency, Number of Seasons Completed, and Total Fish Catch, Controlling for Opponent Group Competitiveness

Variable	*Partial r*			
	Restraint	Efficiency	Seasons Completed	Total Fish Catch
Helpful	-.10	-.06	-.16	.04
Intelligent	-.18*	-.15	-.23**	-.12
Friendly	.01	.03	.01	.01
Concerned for Others	.03	.07	.01	.05
Open-minded	-.15	-.09	-.20*	.02
Aggressive	.12	.09	.07	-.02
Lazy	-.05	-.04	.01	.01
Greedy	.01	.00	-.07	-.06
Reckless	.08	.10	-.01	.08
Competitive	.03	.02	-.01	-.06

Note. The categorical value for cooperative condition is 1 and for competitive condition is 2.

*p < .05

**p < .01

***p < .001

n = 143

Hypothesis 4 stated that condition would affect participants' own harvesting behaviour was tested using a one-way multivariate analysis of variance. Efficiency, restraint, and total number of fish caught, and the number of simulation seasons completed were all included as dependent variables. The total money made was not included in the analysis because it measured the same thing as total number of fish caught, only in different units. Using Wilks' criterion, the combination of all four measures was significantly affected by condition, $F(4, 138) = 224.49$, $p < .001$. The univariate effects of condition were significant for restraint, $F(1, 141) = 32.88$, efficiency, $F(1, 141) = 19.40$, number of fish caught, $F(1, 141) = 196.75$, and number of seasons completed, $F(1, 141) = 5.11$, all *ps* <.05. Participants facing a cooperative opponent harvested more than twice the amount of fish as those facing a competitive opponent but also completed more seasons. As was previously surmised, this may have happened because, over time, as more seasons were completed, participants had more chances to catch fish from a stock that was still in abundance. Participants facing a competitive opponent were more restrained in their harvesting than participants facing a cooperative opponent. This means that they took fewer fish per season. But participants facing a competitive opponent were also more efficient. This means that they took as many fish as they could per season, while attempting to leave as many fish as were needed for the stock to replenish to its pre-season size.

Additional Analyses

Effects of gender composition of participant groups were examined. These analyses were done to determine whether same-sex groups differed from mixed-sex groups on the dependent variables. Participants were categorized numerically according to whether they were in an all-female group, a group with one male, a group with two males, or an all-male

group. No significant effects of group composition on rating shifts or participants fishing choices were found.

Discussion

This study was conducted to determine whether competition over a scarce resource would produce a negative change in attitudes toward others with whom the resource is shared. Hypothesis 1 was generally supported. When participants faced competitive opponents, they changed their ratings in a more negative direction overall than when they faced cooperative opponents. Of the ten individual person perception items in the scale, changes in seven were significantly different between the two experimental conditions. For these items, participants shifted their ratings in a significantly more negative direction when rating competitive opponents than when rating cooperative opponents. Only rating shifts of intelligence, open-mindedness, and laziness were not significantly different. Participants facing cooperative and competitive groups shifted their ratings of intelligence, open-mindedness, and laziness in the same direction and to the same degree. There are two main possible reasons for the non-significant results.

First, participants perhaps did not think laziness, intelligence, or open-mindedness was relevant to a competition situation. Therefore, they did not wish to judge their opponents on attributes about which they did not have any direct information. Traits such as competitiveness and agressiveness are traits that are perhaps manifested more readily in a resource use situation; consuming more of a resource may be seen as being aggressive and competitive. On the other hand, there may be no direct evidence for laziness, intelligence or open-mindedness as these traits are not readily evoked in a resource use situation. This leads to the possible conclusion that the participants relied heavily on the

information the experimental situation provided, and did not immediately make judgements based on their own previous schemas about others similar to those against whom they were competing.

Second, the non-significant difference in rating shifts of intelligence that was revealed by the MANOVA is contrary to previous research (Schlenker et al., 1973; Hine & Gifford, 1996), and the correlation analyses in this study. It may be that the correlation analyses reflect the relationship between experimental condition and rating shifts more accurately.

Hypothesis 2 was only partly supported. It predicted that participants' fishing efficiency, restraint, total number of fish caught, and number of seasons completed would moderate the relationship between competitiveness of the opponent group and rating shifts. These harvesting variables were found to moderate only the relationship between opponent group competitiveness and rating shifts of friendliness and intelligence. When participants' total fish catch, restraint, efficiency and number of seasons completed were controlled for, their rating shifts of friendliness and intelligence did not differ between conditions. When participants' own behaviour was not controlled for, their rating shifts were significantly more negative in the competitive condition on these two traits. Thus, participants' own harvest choices were generally not an influence on their ratings of their opponents.

Support for Hypothesis 3 of a direct relationship between harvesting variables and rating shifts was inconclusive. Initially, about half of the Pearson correlations were significant and large, indicating a fairly strong relationship. When controlling for

condition, however, most of the partial correlations were found to be non-significant, indicating at least a strong moderating effect of condition.

The results from these three sets of analyses indicate that the strongest relationship found in this study was between rating shifts and opponent group competitiveness. This supports the overall conclusion that participants' person perception ratings did shift in a more negative direction when they were faced with a competitive opponent group.

Hypothesis 4, which stated that participants' own harvesting behaviour would be more competitive in the competitive opponent condition, was not supported. Rather, opponents in the competitive condition harvested fewer fish, and were more restrained and efficient than cooperative condition participants. However, cooperative condition participants completed more seasons than those in the competitive condition. The greater harvest of the cooperative condition participants could be interpreted as result of more seasons completed. More seasons completed means that participants had more opportunities to harvest, and may have taken advantage of those opportunities. The other complementary reason for the greater fish catch may be simply a greater tendency for competition during each season on the part of participants facing a cooperative opponent. They may have noticed the smaller harvests made by their opponents and taken advantage of the larger remaining stock during each season. Thus, no definite conclusion could be drawn about whether or not cooperative condition participants were more competitive in their own harvesting choices.

The prediction of no gender differences was supported. There was no difference in rating shifts between male and female participants. However, this conclusion should be

drawn with caution. There were three times as many female participants as there were males. It is reasonable to suggest that the sample of male participants was too small for an adequate gender comparison.

All these analyses were originally completed including the data from those participants who did not believe in the existence of the out-group (see Appendix C). There were some differences from the analyses which excluded this data. Gender did have an effect on changes in ratings of competitiveness, and the interaction between gender and competitiveness of the out-group had an effect on changes in ratings of intelligence, aggressiveness, greediness, recklessness, and competitiveness.

This research shows that competition over limited resources can lead to negative changes in attitudes toward the out-group. There was a clear difference between how participants rated simulated opponents after the simulations. Participants who were facing competitive opponents changed their ratings to more negative ones than those who faced cooperative opponents. However, there are several major issues that must be pointed out, both theoretical and methodological.

Limitations

There are several limitations to this study that should be considered and dealt with in future research. First, the method used to recruit participants for the study did not allow for control over demographic characteristics, such as gender. The unequal number of male and female participants in this study prevented a firm conclusion on gender effects.

Furthermore, this study employed a simulated group, allowing for control of competitiveness. Most participants did believe the manipulation, but a large number did not. To ensure believability, confederates could be introduced at the beginning of the

experimental session as the other group's "members." These confederates would meet with the participants and interact with them for a little while. In addition to increasing believability of the other group, these confederates could act as people to be associated with the information on the completed introduction questionnaires given to the participants before the person perception pre-test. Thus, the participants would have some more information to use as a reference for their pre-test ratings.

Also, it appeared to the experimenter that, in many groups, one or two people dominated the discussion of how many fish to harvest. In the case of mixed-sex groups, these were usually males. This means that the harvesting decisions may not have been true group decisions. The effects of having an informal leader or, more generally, dominant people in the group, were not examined directly and this is something that should be taken into consideration in future studies.

Related to this is the fact that only one person at time could physically press the mouse button for the harvesting of fish. Usually only one person was designated as the button presser for the duration of the simulation. That person may have been making his or her own choices, without truly taking the other group members' opinions into account. What this implies is that the harvesting results may reflect the choice of one person, not a group.

Finally, the FISH simulation program did not allow for the control over a time limit for each season. Instead, each season ended when both groups were back at port. This meant that, in order for the fish stock to replenish, participants had to 'cooperate' by returning to port after the simulated group also returned. This may have affected the actual total number of fish harvested by the participants.

Further Considerations

An alternate theoretical explanation for the results is in-group favouritism, which predicts a change in attitudes as a result of the participants favouring their own in-group, regardless of the existence of competition with the out-group. Previous research does provide support for in-group favouritism in the allocation of resources (Gaertner & Insko, 2000; Stroebe, Lodewijkx, & Spears, 2005) and evaluative ratings (e.g., Hennessy & West, 1999). However, these studies also found substantial evidence for factors such as competition and reciprocity. In this study, that participants' ratings in both experimental conditions became more negative on most scale items appears to lend at least some support to in-group favouritism. However, the ratings became significantly more negative in the competitive condition than in the cooperative one. In-group favouritism alone would have predicted no difference in changes between the two conditions.

Research should also manipulate competition and in-group favouritism independently to determine whether these processes have independent effects on attitude change. The intergroup resource dilemma can be used again to induce competition. In-group favouritism could be examined by having participants rate their own group on the person perception items as well as the opposing group members. Also, to further isolate in-group favouritism from any effects of previous intra-group interaction, the minimal group paradigm should be used. The minimal group paradigm is a research method by which participants are arbitrarily assigned to groups based on some arbitrary criteria, such as which painter they prefer (Tajfel, cited in Gaertner & Insko, 2000). Then, very little intra-group interaction ensures that the favouritism that is show is a result of in-group belonging, and not any developing affinity for fellow in-group members.

Duckitt (1992b) expanded realistic conflict theory to take into account several forms of intergroup conflict. These are competition, domination, scapegoating, and rebellion. Competition as defined in this study refers to the competition over resources as was manipulated in this study. Domination refers to one group gaining and maintaining power over another one. Such power may lead to the dominating group having disparaging views of those they are oppressing, and vice versa. Scapegoating refers to blaming an out-group for one's in-group's problems even though that out-group may not be doing anything to cause those problems. Scapegoat out-groups are usually relatively powerless compared to the in-group so this is simply a case of displacing in-group frustration onto a target that is less likely to retaliate. Rebellion refers to an oppressed in-group trying to change its position with respect to a dominating out-group. This kind of response to domination occurs in a context where change of position is perceived as possible. If such change is not perceived as possible, oppressed in-groups may instead accept their own inferiority and even reject their in-group in favour of identifying with the powerful out-group. Duckitt (1992b) has pointed to research in South Africa that leads support to this expanded version of realistic conflict theory. Further research needs to consider that conflict may take many forms. One way of doing this would be to induce the various forms of conflict independently in different groups and then have participants rate their 'opponents' in each case.

Based on a review of historical theorizing about prejudice, Duckitt (1992a) presented a potentially useful framework that integrates four major causal processes that have been identified by other researchers in the past: general human psychological tendencies, intergroup dynamics, social transmission of attitudes and individual differences.

General human psychological tendencies include social identification and categorization. Intergroup dynamics include realistic conflict and domination. Social transmission of prejudice includes processes of conformity and socialization of children. Individual differences include differences in frustration, personal adjustment and authoritarianism.

Although all four of these components of the framework may not be able to be included in any one study, various combinations are possible. Some researchers have already compared the effects of the general human tendency for group identification and categorization with the intergroup dynamic of competition (Gaertner & Insko, 2000; Hennessy & West, 1999). Now, perhaps individual differences could be included as variables, by having participants complete self-evaluation scales that measure aspects of their own behaviour such as the tendency to conform or their levels of self-esteem, for example. The integrative framework presented by Duckitt (1992a) can also be viewed as a tool for organizing and proposing research that may give us a more comprehensive understanding of inter-group relations. Such an understanding may then help social scientists and others put forth more effective plans for mitigating hostile intergroup relations.

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Appendix A:

Introduction Questionnaire

Please take a few minutes to complete this short questionnaire. The information will be provided to the other group's members as a general introduction and may be used as data. None of this information will be used in any other way. Please DO NOT write your name or any other identifying information on this paper as the information must not identify you as yourself to the other group or myself.

What is your major (or probable major if you haven't chosen one yet)?

What has been your favourite course at UVic so far?

If you could visit any place in the world, where would you most like to go?

Have you ever gone fishing or boating? If so, did you like it?

If not, would you like to try fishing, boating, or both?

Thank you for completing these items. If you wish, this questionnaire will be returned to you after the study to keep.

Appendix B:

Person Perception Questionnaire

Opinions About The Others

Rate the other group's members on the following adjectives or adjective phrases according to the scale provided. Indicate your rating by writing a scale number by each adjective or phrase. Do not put your name or any other personal information on this sheet.

Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
-3	-2	-1	0	1	2	3

I think that the other group's members are

Helpful _____

Intelligent _____

Aggressive _____

Friendly _____

Lazy _____

Concerned for others _____

Greedy _____

Reckless _____

Open-minded _____

Competitive _____

Appendix C:

Results Including Cases of Non-Belief In Deception

Preliminary Analysis of Harvesting Data

The participant groups' harvesting data were collected and analyzed as a first step. These data are missing for fifteen participants due to clerical error on the part of the researcher; hence any analyses of these variables included 170 participants, 86 in the cooperative condition and 84 in the competitive condition. The means and standard deviations for the harvesting variables are presented in Table 1.

Of the 62 groups, 44 completed the maximum number of rounds allowed. They were somewhat restrained in their harvesting, because the mean was close to zero, but slightly positive, meaning that the groups harvested a fair number of fish but left enough to replenish the stock each time. They were also somewhat efficient, harvesting as much as they could without over-fishing.

The effects of competitiveness of the simulated group on participants' own behaviour were examined. Effects of experimental condition on efficiency, restraint, and total number of fish caught, and the number of simulation seasons completed were examined using a one-way multivariate analysis of variance. The total money made was not included in the analysis because it measured the exact same thing as the total number of fish caught only using money as a unit of measurement instead of fish. Using Wilks' criterion, the combination of all four measures was significantly affected by condition, $F(3, 166) = 298.20$, $p < .001$. The univariate effects of condition were significant for restraint, $F(1, 168) = 43.30$, efficiency, $F(1, 168) = 21.82$, number of fish caught, $F(1, 168) =$

273.03, and number of seasons completed, $F(1, 168)= 5.42$, all $ps < .05$. Participants facing a cooperative opponent harvested more than twice the amount of fish as those facing a competitive opponent but also completed more seasons. This happened because, over time, as more seasons were completed, participants had more chances to catch fish from a stock that was not depleted that rapidly. Participants facing a competitive opponent were more restrained and more efficient in their harvesting than participants facing a cooperative opponent.

Transformation and Reliability Analysis of Rating Data

As a first step in the main analyses, the raw scores for the items aggressive, competitive, reckless, greedy and lazy were recoded so as to create an overall scale measuring positive person perception. For example, if reckless was rated as –3, it became 3, and vice versa.

Using Cronbach's alpha, reliability for the pre-test and post-test were .56 and .83 respectively. The lower reliability for the pre-test likely occurred because the participants did not know their opponents and knew very little information about them. All they knew was on the introduction questionnaires.

The ten items were then transformed into difference scores by subtracting the pre-test scores from the post-test scores to determine the change in rating from before to after the simulation. Thus, negative difference scores indicated negative shifts and positive scores indicated positive shifts. These difference scores were used in all subsequent analyses. The means and standard deviations for the difference scores in the cooperative and competitive opponent group conditions are given in Table 2. Cronbach's alpha for the difference score scale was .77.

Hypothesis Tests

To determine the overall difference in changes of person perception ratings between the two opponent group conditions, and to examine gender effects, a 2-way ANOVA was computed on the summed difference scores. Significant differences were found for condition, $F(1, 181) = 96.74$, $p < .001$, and gender, $F(1, 181) = 4.44$, $p < .05$, but not for the interaction, $F(1, 181) = .79$, $p = .38$. Participants in the competitive condition changed their ratings to more negative ones than did participants in the cooperative condition (competitive $M = -13.89$ and cooperative $M = .40$). Females changed their ratings to more negative ones that did males (females $M = -8.27$ and males $M = -5.21$).

Next, a 2-way MANOVA was computed on the individual scale items, using condition and gender as factors. Using Wilks' criterion, the combined scale difference scores were significantly affected by condition, $F(10, 172) = 12.57$, $p < .001$, but not by gender, $F(10, 172) = 1.67$, $p = .09$. The interaction was not significant, $F(10, 172) = 1.45$, $p = .16$. That is, participants changed their ratings of competitive groups in a more negative direction overall, regardless of gender.

Univariate results are presented in Table 3. Participants did not change their ratings of competitive and cooperative opponents differently on intelligence, open-mindedness or laziness (all *ps* > .05). The rating shifts of competitive opponents were more negative on the remaining seven person perception items (all *ps* < .05).

Gender alone had only one significant effect. A difference was found between males and females in their rating shifts of competitiveness, $F(1, 181) = 4.64$, $p < 0.05$. Females changed their ratings in a more negative direction than did males. They rated their opponents as more competitive after competing against them, regardless of whether the

opponents were cooperative or competitive. As with the ANOVA, this lack of significant differences may be due to the much smaller number of male participants.

The interaction was significant for ratings of intelligence, aggressiveness, greediness, recklessness, and competitiveness. Females changed these ratings of competitive opponents in a more negative direction than did males. They rated their competitive opponents as being less intelligent, less aggressive, less greedy, less reckless, and less competitive after the simulation than did males. Means and standard deviations for the interaction are presented in Table 4.

The effect of participants' own fishing behaviour on changes in their ratings was examined. Partial correlation analyses were computed between experimental condition and the ratings, controlling for restraint and efficiency in harvesting, the number of simulation seasons completed, and the total number of fish caught during the simulation. A Pearson correlation without any control variables was computed to provide baseline results for comparison. The Pearson and partial correlations for the ten person perception items are shown in Table 5.

The relationship between the summed rating change and condition did not change when the three harvesting behaviour measures were controlled for (Pearson $r = -.64$, $p < .001$, partial $r = -.34$, $p < .001$). However, it did change for three out of the ten individual rating items. When participants' own restraint, efficiency and total harvest were controlled for, rating shifts of intelligence, friendliness, and open-mindedness did not differ significantly between the two experimental conditions.

Interestingly, significant Pearson correlations were found between experimental condition and rating shifts of intelligence and open-mindedness. The Pearson correlations

could be viewed as equivalent to the MANOVA analysis results because they do not include control variables. Yet, the MANOVA results did not show significant differences between conditions on rating shifts of intelligence and open-mindedness and the Pearson correlation analyses do.

When comparing the MANOVA results with the partial correlations, it can be seen that the only moderated relationship is between condition and ratings of friendliness. The relationship is significant in the MANOVA results but not in the partial correlation analyses (partial $r = -.14$,

$p = .07$).

Computing Pearson correlations between the rating difference scores and the four harvesting variables included previously provided a direct analysis of the effects of harvesting behaviour on rating shifts. The correlations were significant between the summed change in ratings and restraint ($r = -.30, p < .001$), efficiency ($r = -.20, p < .01$), and total number of fish caught ($r = .53, p < .001$). The correlation between the summed change in ratings and number of seasons completed was non-significant ($r = .04, p = .62$). When participants were more restrained and efficient, and caught more fish, their ratings changed to become more negative overall. The results for the ten separate trait-rating items are presented in Table 6.

As expected, there was no significant correlation between rating shifts of laziness and any of the harvesting variables. Number of seasons completed had no effect on any of the trait rating shifts except for intelligence; people who completed more seasons rated their opponents more negatively on intelligence. Efficiency and restraint had similar effects on only four out of the ten trait rating shifts. Participants who were both more efficient and

restrained in harvesting rated their opponents more negatively on intelligence, helpfulness, greediness, and competitiveness. Interestingly, the total number of fish caught was significantly correlated with eight out of the ten items, except for laziness and intelligence. This is the almost the reverse of the correlations for number of seasons completed. Another unexpected finding is the lack of significant correlations between rating shifts of aggressiveness, efficiency, and restraint.

The above results were found without controlling for experimental condition. In order to test for the effects of condition on the relationship between participants' own harvesting and the changed ratings of their opponents, correlation analyses were run on the rating difference scores and the four harvesting variables, controlling for competitiveness of the opponent group.

All correlations between the summed rating difference score and the four harvesting variables were non-significant (all *ps* > .1). The correlations for the ten items are presented in Table 7. The correlations between rating shifts of laziness and each of the four harvesting variables remained unchanged. Also, the correlations between the ten rating change items and number of seasons completed remained unchanged. The experimental condition did, however, moderate the correlations between all the other variables.

Table 1

Fishing Simulation Descriptive Statistics

	Competitive[a]		Cooperative[b]	
Variable	*M*	*SD*	*M*	*SD*
Restraint	.38	.23	.08	.35
Efficiency	.47	.29	.09	.68
Seasons completed	8.07	2.75	9.06	2.77
Total fish caught	329.14	73.09	844.22	276.40
Total profit	16.52	3.61	42.23	13.84

Note. Total profit is the money made at the end of the simulation by the group (Canadian funds).

[a]n = 84

[b]n = 86

Table 2

Person Perception Scale Difference Scores

	Competitive[a]		Cooperative[b]	
Variable	*M*	*SD*	*M*	*SD*
Helpful	-1.74	1.63	-0.07	1.37
Intelligent	-2.10	1.97	-1.62	1.62
Friendly	-1.31	1.41	-0.39	1.30
Concerned for others	-1.52	1.78	0.34	1.40
Open-minded	-1.50	1.41	-1.04	1.50
Aggressive	-1.38	1.71	0.47	1.92
Lazy	-0.42	1.86	-0.69	1.67
Greedy	-1.89	1.75	0.44	2.00
Reckless	-1.77	1.68	0.36	1.71
Competitive	-0.74	1.39	1.31	1.87
Overall	-14.38	8.09	-0.91	8.16

Note. The values in this table are for difference scores (post-test – pre-test).

[a] n = 90. [b] n = 95.

Table 3

Multivariate Analysis of Variance for Person Perception Ratings

Source	*Variable*	*Univariate F*
Condition	Helpful	37.461**
	Intelligent	0.00
	Friendly	16.55**
	Concerned for others	44.42**
	Open-minded	1.81
	Aggressive	46.92**
	Lazy	3.70
	Greedy	68.35**
	Reckless	68.47**
	Competitive	71.49**
Gender	Helpful	2.18
	Intelligent	0.13
	Friendly	2.42
	Concerned for others	2.20
	Open-minded	2.12
	Aggressive	1.63
	Lazy	0.44
	Greedy	2.01

	Reckless	0.21
	Competitive	4.64*
Condition X	Helpful	0.03
Gender	Intelligent	6.56*
	Friendly	0.20
	Concerned for others	0.07
	Open-minded	0.57
	Aggressive	3.83*
	Lazy	3.48
	Greedy	4.97*
	Reckless	4.97*
	Competitive	5.75*

*p < .05

**p < .001

Table 4

Person Perception Scale Difference Scores For Condition X Gender Interaction

Competitive[a]					Cooperative[b]			
	Female[a]		*Male*[b]		*Female*[c]		*Male*[d]	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Helpful	-1.84	1.60	-1.40	1.70	-0.14	1.38	0.21	1.32
Intelligent	-2.26	1.96	-1.55	1.96	-1.43	1.57	-2.37	1.64
Friendly	-1.37	1.39	-1.10	1.52	-0.49	1.23	0.00	1.53
Concerned for others	-1.60	1.83	-1.25	1.59	0.24	1.39	0.74	1.37
Open-minded	-1.63	1.52	-1.05	0.76	-1.08	1.52	-0.89	1.45
Aggressive	-1.33	1.72	-1.55	1.70	0.26	1.90	1.32	1.83
Lazy	-0.60	1.81	0.20	1.94	-0.62	1.62	-1.00	1.89
Greedy	-1.83	1.69	-2.10	2.00	0.20	1.93	1.42	2.06
Reckless	-1.59	1.71	-2.40	1.47	0.25	1.66	0.79	1.90
Competitive	-0.73	1.41	-0.80	1.32	1.04	1.76	2.37	2.01
Overall	-14.77	8.26	-13.00	7.53	-1.78	7.93	2.58	8.32

[a] n = 65

[b] n = 19

[c] n = 69

[d] n = 17

Table 5

Correlations Between Ratings and Opponent Group Competitiveness

Variable	*Pearson r*[a]	*Partial r*[b]
Helpful	-.50**	-.17*
Intelligent	-.17*	-.15
Friendly	-.35**	-.14
Concerned for Others	-.52**	-.24**
Open-minded	-.16*	-.02
Aggressive	-.43**	-.23**
Lazy	.09	.13
Greedy	-.51**	-.29**
Reckless	-.54**	-.28**
Competitive	-.52**	-.27**

Note. The categorical value for cooperative condition is 1 and for competitive condition is 2.

[a] No harvesting variables controlled for.

[b] Controlled for efficiency, restraint, number of seasons completed, and total number of fish caught by the participant group

*p < .05

**p < .01

n = 170

Table 6

Correlations Between Ratings and Participants' Restraint, Efficiency, Number of Seasons Completed, and Total Fish Catch

Variable	*Pearson r*			
	Restraint	Efficiency	Seasons Completed	Total Fish Catch
Helpful	-.29**	-.21**	-.03	.42**
Intelligent	-.21**	-.17*	-.15*	.07
Friendly	-.16*	-.10	-.05	.29**
Concerned for Others	-.19*	-.11	-.13	.44**
Open-minded	-.16*	-.10	-.12	.16*
Aggressive	-.11	-.07	.12	.37**
Lazy	.00	-.01	-.01	-.07
Greedy	-.22**	-.15*	.03	.41**
Reckless	-.18*	-.10	.09	.48**
Competitive	-.21**	-.15*	.07	.40**

Note. The categorical value for cooperative condition is 1 and for competitive condition is 2.

*p < .05

**p < .01

n = 170

Table 7

Correlations Between Ratings and Participants' Restraint, Efficiency, Number of Seasons Completed, and Total Fish Catch, Controlling for Opponent Group Competitiveness

Variable	*Partial r*			
	Restraint	Efficiency	Seasons Completed	Total Fish Catch
Helpful	-.09	-.04	-.14	.05
Intelligent	-.14	-.12	-.19*	-.11
Friendly	.00	.02	-.01	.02
Concerned for Others	.05	.08	.04	.06
Open-minded	-.10	-.05	-.15	.05
Aggressive	.10	.09	.05	.05
Lazy	-.05	-.04	.01	.01
Greedy	.02	.03	-.07	.02
Reckless	.09	.11	-.01	.11
Competitive	.03	.03	-.02	-.01

Note. The categorical value for cooperative condition is 1 and for competitive condition is 2.

*p < .05

**p < .01

n = 170

	group	gender	decbel	condit	help1	intel1	friend1
1	3	1	1	1	1	1	2
2	3	1	1	1	2	2	2
3	3	1	1	1	2	3	2
4	4	1	1	1	1	2	1
5	4	2	1	1	0	1	1
6	4	2	1	1	0	1	2
7	5	1	1	2	2	3	1
8	5	1	1	2	3	3	0
9	5	2	1	2	1	3	0
10	8	1	1	2	0	2	0
11	8	1	1	2	0	1	3
12	8	1	1	2	2	2	0
13	11	1	1	1	0	1	1
14	11	1	1	1	1	2	1
15	11	1	1	1	1	2	2
16	13	1	1	1	0	1	2
17	13	1	1	1	0	2	2
18	13	1	1	1	0	2	0
19	15	1	1	1	2	1	2
20	15	1	1	1	1	1	1
21	15	1	1	1	2	3	2
22	17	1	1	2	2	1	2
23	17	1	1	2	1	2	1
24	17	1	1	2	0	2	0
25	19	1	2	1	1	2	1
26	19	1	2	1	1	1	1
27	19	2	2	1	3	3	2
28	20	1	1	1	1	3	2
29	20	1	1	1	0	2	2
30	21	1	1	1	1	1	1
31	21	1	1	1	1	1	1
32	21	1	1	1	1	1	1
33	22	1	1	2	2	2	2
34	22	1	1	2	1	2	1
35	22	1	1	2	1	2	3
36	23	1	1	2	2	2	2
37	23	1	1	2	2	2	2
38	23	1	1	2	2	3	2
39	24	1	1	1	0	3	2

	opmd1	cfo1	agress1r	greedy1r	lazy1r	reck1r	comp1r
1	2	3	-2	2	1	-3	-2
2	2	2	0	3	3	0	0
3	1	1	-1	-1	2	1	-2
4	2	1	0	-1	-2	0	-2
5	0	0	-1	0	0	0	0
6	2	2	-1	-1	-1	-1	0
7	2	1	0	1	1	2	-3
8	2	2	0	0	2	2	-1
9	1	1	2	1	0	1	-1
10	1	0	2	0	2	0	0
11	2	0	-3	2	-1	0	0
12	2	1	-2	0	0	0	-2
13	1	1	1	0	0	1	1
14	0	0	0	0	0	0	0
15	-1	1	0	-1	-1	1	0
16	3	2	3	2	3	3	0
17	1	-1	2	0	2	0	0
18	0	1	0	0	0	0	0
19	1	2	2	0	1	-1	-1
20	1	1	2	2	2	2	0
21	1	0	-1	0	2	0	0
22	1	1	0	-1	1	1	-3
23	2	1	0	0	2	1	-1
24	0	0	0	0	0	0	0
25	2	1	0	-1	0	0	-1
26	3	1	-1	-1	0	-1	-1
27	1	1	-1	0	3	-1	-2
28	3	-2	-1	-2	3	-3	-2
29	2	0	1	2	3	2	0
30	2	2	0	-1	0	-1	-1
31	2	0	1	0	1	1	0
32	2	0	1	0	2	1	-1
33	2	1	0	0	-1	1	-2
34	2	0	0	1	2	1	-2
35	3	1	3	3	3	3	0
36	2	0	0	0	0	1	-1
37	2	2	0	0	0	0	0
38	2	2	0	0	2	0	-2
39	3	0	3	3	3	3	3

	totlike1	help2	intel2	friend2	cfo2	opmd2	agress2r
1	5	3	0	0	2	3	3
2	16	2	1	2	2	0	3
3	8	3	-2	2	3	0	3
4	2	1	-1	3	3	1	3
5	1	0	-1	0	0	0	2
6	3	-2	-2	0	0	-2	2
7	10	1	0	2	-2	1	-1
8	13	-1	-1	0	0	0	-1
9	9	1	2	0	-1	1	1
10	7	0	2	1	1	0	-1
11	4	0	2	0	0	2	-1
12	3	1	2	0	0	1	-2
13	7	0	-1	1	1	0	1
14	4	-2	-2	0	-2	0	1
15	4	2	1	2	1	0	0
16	19	0	0	0	0	0	0
17	8	0	2	1	0	1	2
18	3	0	2	0	0	0	1
19	9	2	0	0	2	1	2
20	13	1	0	1	2	1	2
21	9	1	-1	1	2	2	2
22	5	-2	-2	-3	-2	2	-3
23	9	0	2	0	-1	0	-1
24	2	0	2	0	0	0	-1
25	5	2	2	2	2	1	1
26	3	1	2	1	2	1	0
27	9	2	1	0	2	2	0
28	2	-3	-2	0	-1	0	-2
29	14	0	2	0	3	1	2
30	4	0	-1	1	0	1	1
31	8	-1	1	-1	-1	-1	-2
32	8	0	1	0	0	1	-1
33	7	1	2	1	2	0	-2
34	8	-1	-2	1	-2	1	-2
35	22	1	2	0	0	1	2
36	8	0	1	0	0	0	-1
37	10	2	2	2	1	0	-2
38	11	2	3	2	1	2	-3
39	23	0	3	3	3	2	3

	lazy2r	greedy2r	reck2r	comp2r	totlike2	helpdif	inteldif
1	0	3	3	3	20	2	-1
2	0	3	0	3	16	0	-1
3	0	3	3	0	15	1	-5
4	1	3	1	3	18	0	-3
5	0	-1	1	2	3	0	-2
6	0	0	0	3	-1	-2	-3
7	2	-2	-2	-2	-3	-1	-3
8	0	-1	-1	-2	-7	-4	-4
9	0	-1	-2	-2	-1	0	-1
10	1	-1	1	-2	2	0	0
11	1	-1	1	-2	2	0	1
12	0	-1	0	-2	-1	-1	0
13	1	1	0	1	5	0	-2
14	0	-1	-1	0	-7	-3	-4
15	1	-1	0	-1	5	1	-1
16	2	-1	0	-1	0	0	-1
17	3	3	1	0	13	0	0
18	0	0	0	1	4	0	0
19	1	2	0	0	10	0	-1
20	2	2	2	1	14	0	-1
21	-1	3	2	2	13	-1	-4
22	3	-2	-3	-2	-14	-4	-3
23	3	-2	2	-1	2	-1	0
24	0	-1	0	-2	-2	0	0
25	0	2	2	2	16	1	0
26	-1	0	-1	0	5	0	1
27	0	2	1	-1	9	-1	-2
28	0	-2	-2	-1	-13	-4	-5
29	1	2	2	-1	12	0	0
30	-1	0	0	1	2	-1	-2
31	1	-2	1	-2	-7	-2	0
32	1	-2	2	-1	1	-1	0
33	2	-2	2	-3	3	-1	0
34	2	-2	-1	-1	-7	-2	-4
35	-1	-1	0	-2	2	0	0
36	1	-1	-1	0	-1	-2	-1
37	0	-1	-1	-1	2	0	0
38	0	-2	0	-3	2	0	0
39	1	3	3	3	24	0	0

	friendif	cfodif	opmddif	agrsdifr	lazydifr	greedifr	reckdifr
1	-2	-1	1	5	-1	1	6
2	0	0	-2	3	-3	0	0
3	0	2	-1	4	-2	4	2
4	2	2	-1	3	3	4	1
5	-1	0	0	3	0	-1	1
6	-2	-2	-4	3	1	1	1
7	1	-3	-1	-1	1	-3	-4
8	0	-2	-2	-1	-2	-1	-3
9	0	-2	0	-1	0	-2	-3
10	1	1	-1	-3	-1	-1	1
11	-3	0	0	2	2	-3	1
12	0	-1	-1	0	0	-1	0
13	0	0	-1	0	1	1	-1
14	-1	-2	0	1	0	-1	-1
15	0	0	1	0	2	0	-1
16	-2	-2	-3	-3	-1	-3	-3
17	-1	1	0	0	1	3	1
18	0	-1	0	1	0	0	0
19	-2	0	0	0	0	2	1
20	0	1	0	0	0	0	0
21	-1	2	1	3	-3	3	2
22	-5	-3	1	-3	2	-1	-4
23	-1	-2	-2	-1	1	-2	1
24	0	0	0	-1	0	-1	0
25	1	1	-1	1	0	3	2
26	0	1	-2	1	-1	1	0
27	-2	1	1	1	-3	2	2
28	-2	1	-3	-1	-3	0	1
29	-2	3	-1	1	-2	0	0
30	0	-2	-1	1	-1	1	1
31	-2	-1	-3	-3	0	-2	0
32	-1	0	-1	-2	-1	-2	1
33	-1	1	-2	-2	3	-2	1
34	0	-2	-1	-2	0	-3	-2
35	-3	-1	-2	-1	-4	-4	-3
36	-2	0	-2	-1	1	-1	-2
37	0	-1	-2	-2	0	-1	-1
38	0	-1	0	-3	-2	-2	0
39	1	3	-1	0	-2	0	0

	compdifr	totdif	meanir	meanie	numseas	fishgot	profit
1	5	15	.	.	.	.	.
2	3	0	.	.	.	.	.
3	2	7	.	.	.	.	.
4	5	16	.	.	.	.	.
5	2	2	.	.	.	.	.
6	3	-4	.	.	.	.	.
7	1	-13	.	.	.	.	.
8	-1	-20	.	.	.	.	.
9	-1	-10	.	.	.	.	.
10	-2	-5	.	.	.	.	.
11	-2	-2	.	.	.	.	.
12	0	-4	.	.	.	.	.
13	0	-2	.	.	.	.	.
14	0	-11	.	.	.	.	.
15	-1	1	.	.	.	.	.
16	-1	-19	-.9330	-1.8670	1	290	14.50
17	0	5	-.9330	-1.8670	1	290	14.50
18	1	1	-.9330	-1.8670	1	290	14.50
19	1	1	.2143	.4280	10	1177	58.85
20	1	1	.2143	.4280	10	1177	58.85
21	2	4	.2143	.4280	10	1177	58.85
22	1	-19	.0585	.2966	4	334	16.70
23	0	-7	.0585	.2966	4	334	16.70
24	-2	-4	.0585	.2966	4	334	16.70
25	3	11	.3333	.6667	10	1000	50.00
26	1	2	.3333	.6667	10	1000	50.00
27	1	0	.3333	.6667	10	1000	50.00
28	1	-15	.4103	.7920	10	870	43.50
29	-1	-2	.4103	.7920	10	870	43.50
30	2	-2	.1638	.2521	10	1059	52.95
31	-2	-15	.1638	.2521	10	1059	52.95
32	0	-7	.1638	.2521	10	1059	52.95
33	-1	-4	.6537	1.0850	10	473	23.65
34	1	-15	.6537	1.0850	10	473	23.65
35	-2	-20	.6537	1.0850	10	473	23.65
36	1	-9	.2591	.4340	6	385	19.25
37	-1	-8	.2591	.4340	6	385	19.25
38	-1	-9	.2591	.4340	6	385	19.25
39	0	1	.0373	-.0227	10	358	17.90

	grpmkp
1	1
2	1
3	1
4	3
5	3
6	3
7	2
8	2
9	2
10	1
11	1
12	1
13	1
14	1
15	1
16	1
17	1
18	1
19	1
20	1
21	1
22	1
23	1
24	1
25	2
26	2
27	2
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
38	1
39	1

	group	gender	decbel	condit	help1	intel1	friend1
40	24	1	1	1	0	2	1
41	24	1	1	1	1	0	1
42	25	1	1	2	2	3	2
43	25	1	1	2	2	1	1
44	25	1	1	2	3	3	2
45	26	1	1	1	2	3	3
46	26	2	1	1	0	2	0
47	26	2	1	1	-2	2	2
48	27	1	1	1	1	3	2
49	27	1	1	1	-2	0	-1
50	27	1	1	1	1	2	1
51	28	1	1	1	0	2	0
52	28	1	1	1	1	2	0
53	28	1	1	1	0	2	2
54	29	1	2	2	2	2	2
55	29	1	2	2	2	2	2
56	29	1	2	2	2	2	2
57	30	1	1	2	2	3	3
58	30	1	1	2	0	2	0
59	30	1	1	2	0	3	1
60	31	1	1	2	1	2	-1
61	31	1	1	2	1	3	2
62	31	2	1	2	0	2	0
63	32	1	1	2	2	2	2
64	32	1	1	2	3	2	0
65	32	2	1	2	1	2	-1
66	33	1	1	1	0	1	0
67	33	1	1	1	2	2	2
68	33	2	1	1	-1	1	0
69	34	1	1	2	1	2	2
70	34	1	1	2	0	2	2
71	34	1	1	2	2	1	1
72	35	1	1	1	1	2	3
73	35	1	1	1	1	2	2
74	35	1	1	1	1	2	2
75	36	1	1	2	0	1	0
76	36	2	1	2	0	1	0
77	36	2	1	2	1	1	1
78	37	1	1	2	1	2	1

	opmd1	cfo1	agress1r	greedy1r	lazy1r	reck1r	comp1r
40	1	1	-1	1	2	2	-2
41	1	1	1	2	1	0	-1
42	2	2	-1	0	2	0	-2
43	1	2	-1	-1	0	2	-1
44	2	0	2	0	0	0	0
45	3	2	3	3	-2	3	-2
46	0	0	-1	-1	0	0	-2
47	1	-2	0	0	2	-1	-2
48	-1	1	1	1	2	-1	-2
49	0	0	0	-1	0	0	0
50	2	-1	-1	0	2	-1	-2
51	2	-1	2	2	1	2	-1
52	1	0	-1	-1	2	0	-1
53	3	1	-1	0	2	-1	1
54	2	0	0	0	0	1	0
55	3	2	-1	2	2	2	0
56	2	0	2	0	0	0	-1
57	1	2	-2	0	0	0	-1
58	2	0	-1	0	0	0	0
59	2	0	-1	-1	2	1	-1
60	3	1	1	0	1	2	0
61	3	0	0	0	2	0	-2
62	2	1	-1	0	1	1	-2
63	3	0	2	2	2	0	-2
64	2	0	0	0	0	0	-2
65	1	0	1	-1	-2	2	-1
66	1	0	-1	-1	1	0	-1
67	3	1	-1	2	2	2	-1
68	1	0	-2	-1	2	1	-2
69	0	2	0	0	1	0	-1
70	0	-1	-1	0	0	0	-2
71	3	1	-2	2	2	2	-1
72	1	1	0	0	1	0	-2
73	0	0	0	0	-2	0	-2
74	1	0	2	1	3	2	-2
75	-1	1	1	0	1	1	1
76	0	0	0	0	0	0	0
77	1	0	-1	0	0	0	0
78	1	1	-1	0	2	1	-1

	totlike1	help2	intel2	friend2	cfo2	opmd2	agress2r
40	7	1	2	2	1	1	1
41	7	-1	-1	0	1	-1	1
42	10	1	2	1	-2	1	-3
43	6	-1	2	-1	-2	0	-2
44	12	0	-3	1	-1	0	-2
45	18	3	1	3	1	3	2
46	-2	0	-1	0	-3	0	-1
47	0	-3	-3	-1	-2	-1	-2
48	7	0	-1	1	0	2	2
49	-4	1	-1	0	1	0	2
50	3	-2	0	0	0	-1	-1
51	9	0	-3	1	2	0	2
52	3	1	-1	1	1	-1	2
53	9	1	1	1	1	0	2
54	9	-1	0	0	2	0	-1
55	16	-2	-2	-1	2	0	-3
56	9	2	1	0	2	0	-2
57	8	1	1	1	-3	2	-3
58	3	0	1	0	-1	0	-2
59	6	-2	0	0	-3	0	-3
60	10	-3	-2	0	-3	-2	-2
61	9	-2	-3	-2	-3	-2	-3
62	4	1	1	1	-1	0	-2
63	13	-2	-2	0	-3	0	-2
64	5	-3	-3	-3	-3	0	3
65	2	-3	-3	-3	-3	0	-3
66	0	-1	0	0	-1	0	1
67	14	0	1	1	0	0	1
68	-1	1	-1	2	2	1	2
69	7	-3	-2	3	3	-3	3
70	0	-2	-2	-2	-3	-2	-3
71	11	-1	-2	0	-1	0	-3
72	7	1	2	0	1	1	0
73	1	2	2	1	2	0	-1
74	12	1	2	2	0	0	2
75	5	-1	-1	0	-1	0	2
76	1	0	2	1	-2	0	-1
77	3	-1	-1	0	-3	0	0
78	7	1	-1	-1	0	-1	-1

	lazy2r	greedy2r	reck2r	comp2r	totlike2	helpdif	inteldif
40	2	2	1	-1	12	1	0
41	1	1	1	1	3	-2	-1
42	3	-2	-1	-3	-3	-1	-1
43	1	-3	-2	-3	-11	-3	1
44	-3	-2	-2	-3	-15	-3	-6
45	3	1	3	-3	17	1	-2
46	3	-1	-2	-2	-7	0	-3
47	0	-3	-2	-2	-19	-1	-5
48	1	1	-2	2	6	-1	-4
49	0	2	2	1	8	3	-1
50	2	-2	-2	-2	-8	-3	-2
51	0	2	2	3	9	0	-5
52	-1	2	2	2	8	0	-3
53	-1	2	2	3	12	1	-1
54	2	-3	-2	-1	-4	-3	-2
55	-2	-2	-2	-3	-15	-4	-4
56	0	0	0	-2	1	0	-1
57	2	-3	-3	-3	-8	-1	-2
58	0	-3	-2	-2	-9	0	-1
59	1	-3	-3	-3	-16	-2	-3
60	-1	-3	-2	-3	-21	-4	-4
61	-1	-3	-3	-3	-25	-3	-6
62	1	-2	-1	-3	-5	1	-1
63	0	-2	-2	-2	-15	-4	-4
64	-3	-3	-2	-3	-20	-6	-5
65	2	-3	-3	-3	-22	-4	-5
66	0	1	0	0	0	-1	-1
67	1	2	2	1	9	-2	-1
68	0	1	2	1	11	2	-2
69	-2	-3	-3	-3	-10	-4	-4
70	1	-3	-3	-3	-22	-2	-4
71	1	3	2	-3	-4	-3	-3
72	1	0	0	-1	5	0	0
73	-2	0	-2	-1	1	1	0
74	1	-1	1	-1	7	0	0
75	0	-1	-1	-1	-4	-1	-2
76	0	-1	-1	-2	-4	0	1
77	1	-3	-2	-1	-10	-2	-2
78	0	-2	-1	-2	-8	0	-3

	friendif	cfodif	opmddif	agrsdifr	lazydifr	greedifr	reckdifr
40	1	0	0	2	0	1	-1
41	-1	0	-2	0	0	-1	1
42	-1	-4	-1	-2	1	-2	-1
43	-2	-4	-1	-1	1	-2	-4
44	-1	-1	-2	-4	-3	-2	-2
45	0	-1	0	-1	5	-2	0
46	0	-3	0	0	3	0	-2
47	-3	0	-2	-2	-2	-3	-1
48	-1	-1	3	1	-1	0	-1
49	1	1	0	2	0	3	2
50	-1	1	-3	0	0	-2	-1
51	1	3	-2	0	-1	0	0
52	1	1	-2	3	-3	3	2
53	-1	0	-3	3	-3	2	3
54	-2	2	-2	-1	2	-3	-3
55	-3	0	-3	-2	-4	-4	-4
56	-2	2	-2	-4	0	0	0
57	-2	-5	1	-1	2	-3	-3
58	0	-1	-2	-1	0	-3	-2
59	-1	-3	-2	-2	-1	-2	-4
60	1	-4	-5	-3	-2	-3	-4
61	-4	-3	-5	-3	-3	-3	-3
62	1	-2	-2	-1	0	-2	-2
63	-2	-3	-3	-4	-2	-4	-2
64	-3	-3	-2	3	-3	-3	-2
65	-2	-3	-1	-4	4	-2	-5
66	0	-1	-1	2	-1	2	0
67	-1	-1	-3	2	-1	0	0
68	2	2	0	4	-2	2	1
69	1	1	-3	3	-3	-3	-3
70	-4	-2	-2	-2	1	-3	-3
71	-1	-2	-3	-1	-1	1	0
72	-3	0	0	0	0	0	0
73	-1	2	0	-1	0	0	-2
74	0	0	-1	0	-2	-2	-1
75	0	-2	1	1	-1	-1	-2
76	1	-2	0	-1	0	-1	-1
77	-1	-3	-1	1	1	-3	-2
78	-2	-1	-2	0	-2	-2	-2

	compdifr	totdif	meanir	meanie	numseas	fishgot	profit
40	1	5	.0373	-.0227	10	358	17.90
41	2	-4	.0373	-.0227	10	358	17.90
42	-1	-13	.5944	.6968	10	356	17.80
43	-2	-17	.5944	.6968	10	356	17.80
44	-3	-27	.5944	.6968	10	356	17.80
45	-1	-1	.1881	.3560	10	1159	57.95
46	0	-5	.1881	.3560	10	1159	57.95
47	0	-19	.1881	.3560	10	1159	57.95
48	4	-1	-.0179	.0175	10	940	47.00
49	1	12	-.0179	.0175	10	940	47.00
50	0	-11	-.0179	.0175	10	940	47.00
51	4	0	.1952	.3267	10	1063	53.15
52	3	5	.1952	.3267	10	1063	53.15
53	2	3	.1952	.3267	10	1063	53.15
54	-1	-13	.4740	.4918	10	249	12.45
55	-3	-31	.4740	.4918	10	249	12.45
56	-1	-8	.4740	.4918	10	249	12.45
57	-2	-16	.4527	.5004	10	304	15.20
58	-2	-12	.4527	.5004	10	304	15.20
59	-2	-22	.4527	.5004	10	304	15.20
60	-3	-31	.3135	.3552	10	343	17.15
61	-1	-34	.3135	.3552	10	343	17.15
62	-1	-9	.3135	.3552	10	343	17.15
63	0	-28	.4000	.4175	10	241	12.50
64	-1	-25	.4000	.4175	10	241	12.50
65	-2	-24	.4000	.4175	10	241	12.50
66	1	0	.3069	.2793	10	663	33.15
67	2	-5	.3069	.2793	10	663	33.15
68	3	12	.3069	.2793	10	663	33.15
69	-2	-17	.5680	.7533	10	488	24.40
70	-1	-22	.5680	.7533	10	488	24.40
71	-2	-15	.5680	.7533	10	488	24.40
72	1	-2	.0903	.0681	10	734	36.70
73	1	0	.0903	.0681	10	734	36.70
74	1	-5	.0903	.0681	10	734	36.70
75	-2	-9	.5528	.6022	10	326	16.30
76	-2	-5	.5528	.6022	10	326	16.30
77	-1	-13	.5528	.6022	10	326	16.30
78	-1	-15	.4540	.5264	10	440	22.00

	grpmkp
40	1
41	1
42	1
43	1
44	1
45	3
46	3
47	3
48	1
49	1
50	1
51	1
52	1
53	1
54	1
55	1
56	1
57	1
58	1
59	1
60	2
61	2
62	2
63	2
64	2
65	2
66	2
67	2
68	2
69	1
70	1
71	1
72	1
73	1
74	1
75	3
76	3
77	3
78	3

	group	gender	decbel	condit	help1	intel1	friend1
79	37	2	1	2	2	2	1
80	37	2	1	2	1	2	1
81	38	1	2	1	2	2	3
82	38	2	2	1	1	2	2
83	38	2	2	1	3	1	0
84	39	1	1	1	1	1	1
85	39	1	1	1	1	0	0
86	39	1	1	1	0	2	2
87	40	1	1	1	2	2	1
88	40	1	1	1	1	2	2
89	40	2	1	1	0	2	-1
90	41	1	1	2	2	3	2
91	41	1	1	2	1	2	0
92	41	1	1	2	1	3	1
93	42	1	1	2	0	2	2
94	42	1	1	2	-1	0	2
95	42	2	1	2	2	1	1
96	43	1	1	2	0	1	0
97	43	1	1	2	2	3	2
98	43	1	1	2	0	2	3
99	44	1	1	1	1	3	1
100	44	1	1	1	0	2	0
101	44	1	1	1	2	0	1
102	45	1	1	1	-1	3	2
103	45	1	1	1	0	3	0
104	45	1	1	1	1	2	2
105	46	1	2	1	2	3	3
106	46	1	2	1	2	2	2
107	46	2	2	1	2	2	3
108	47	1	1	1	0	3	2
109	47	1	1	1	1	2	2
110	47	1	1	1	1	2	2
111	48	1	1	2	1	3	0
112	48	1	1	2	2	2	2
113	48	1	1	2	0	2	0
114	49	1	1	2	3	2	3
115	49	1	1	2	2	2	2
116	49	2	1	2	-1	1	2
117	50	1	1	1	0	2	0

	opmd1	cfo1	agress1r	greedy1r	lazy1r	reck1r	comp1r
79	0	1	2	0	-1	0	0
80	0	-1	-1	1	-2	2	-2
81	3	0	-1	-1	2	-1	-1
82	1	0	1	0	2	-1	-2
83	0	0	-3	-2	2	2	-3
84	1	1	0	0	0	0	-1
85	2	0	0	0	0	0	-1
86	3	1	-1	2	2	0	-1
87	3	1	2	1	2	1	-2
88	2	1	1	1	2	1	1
89	2	0	-1	-1	2	0	-2
90	2	2	-1	1	0	1	-3
91	0	2	0	0	0	0	0
92	2	2	-1	1	2	3	-1
93	2	1	0	0	2	0	-1
94	1	1	-2	1	1	2	-2
95	0	0	-1	-2	1	0	-2
96	2	2	0	0	-1	1	0
97	2	1	2	3	0	3	-1
98	2	0	3	1	0	0	-2
99	3	0	2	1	2	3	0
100	1	0	-1	-1	-1	0	-1
101	2	0	0	1	2	0	-2
102	1	0	0	0	2	0	-1
103	3	0	-1	0	0	0	-2
104	2	1	2	0	-1	0	-1
105	2	2	-2	3	3	3	-2
106	2	0	0	0	0	0	0
107	2	1	0	2	0	0	-1
108	2	2	-2	0	0	-2	-3
109	2	1	0	0	0	0	-2
110	2	1	1	1	1	3	-1
111	1	0	1	-1	2	0	-1
112	1	2	0	0	0	0	-1
113	3	0	0	0	2	0	-3
114	2	2	-1	0	2	0	-1
115	2	1	2	1	1	1	-1
116	1	0	0	2	-1	1	0
117	2	0	0	0	0	0	0

	totlike1	help2	intel2	friend2	cfo2	opmd2	agress2r
79	7	-2	-2	-1	-2	-2	-2
80	1	-2	2	0	-1	-1	-2
81	8	1	0	1	1	2	-1
82	6	2	-1	2	1	1	3
83	0	3	-3	2	2	1	2
84	4	1	-2	0	-1	0	0
85	2	1	0	0	0	0	0
86	10	-1	2	0	-1	2	-2
87	13	2	0	2	2	1	2
88	14	1	1	1	1	1	1
89	1	0	1	2	2	1	-1
90	9	-3	2	1	-2	0	-3
91	5	-2	-2	-2	-3	-2	-3
92	13	1	2	1	-3	-1	-3
93	8	-1	-1	0	-1	0	1
94	3	-2	0	0	-2	-3	-3
95	0	-2	-3	0	-2	-1	-1
96	5	-3	-2	0	-2	-1	-2
97	17	-2	-2	0	0	-2	-2
98	9	-3	0	0	-3	-2	-1
99	16	0	1	0	2	0	3
100	-1	1	-1	2	1	0	1
101	6	-1	-1	0	0	-3	2
102	6	2	2	0	2	0	-1
103	3	2	2	2	0	-1	-2
104	8	1	2	1	1	1	-1
105	17	2	2	3	2	3	-1
106	8	1	1	0	0	1	1
107	11	3	-3	3	3	0	3
108	2	0	-2	1	2	-2	2
109	6	2	1	0	0	1	-2
110	13	-1	2	2	-1	2	-3
111	6	-1	-3	1	0	0	1
112	8	1	2	0	1	1	-1
113	4	-2	0	0	0	0	-2
114	12	1	1	1	2	0	-2
115	13	0	1	1	-2	1	1
116	5	-3	-2	-1	-1	0	-2
117	4	0	-2	3	3	0	3

	lazy2r	greedy2r	reck2r	comp2r	totlike2	helpdif	inteldif
79	0	-2	-2	-2	-17	-4	-4
80	0	-2	-1	-2	-9	-3	0
81	1	1	0	-1	5	-1	-2
82	-1	3	3	3	16	1	-3
83	3	3	2	2	17	0	-4
84	0	0	0	-1	-3	0	-3
85	0	1	0	1	3	0	0
86	2	-1	0	-2	-1	-1	0
87	-1	3	2	-1	12	0	-2
88	1	2	1	2	12	0	-1
89	1	1	0	1	8	0	-1
90	2	-3	-1	-3	-10	-5	-1
91	0	-3	-3	-3	-23	-3	-4
92	2	-1	-2	-3	-7	0	-1
93	0	1	1	-2	-2	-1	-3
94	-3	-3	-3	-2	-21	-1	0
95	0	3	2	1	-3	-4	-4
96	-1	-2	-1	-2	-16	-3	-3
97	2	-3	-1	-2	-12	-4	-5
98	0	-2	0	0	-11	-3	-2
99	-1	3	3	3	14	-1	-2
100	-1	1	1	2	7	1	-3
101	-1	1	-2	2	-3	-3	-1
102	0	1	0	-1	5	3	-1
103	1	0	0	-1	3	2	-1
104	1	-1	1	-2	4	0	0
105	3	-1	1	-1	13	0	-1
106	0	1	1	1	7	-1	-1
107	-3	3	3	3	15	1	-5
108	-1	2	2	1	5	0	-5
109	-2	1	1	-1	1	1	-1
110	-2	-3	-3	-3	-10	-2	0
111	0	1	-1	-2	-4	-2	-6
112	0	-1	0	-2	1	-1	0
113	0	-2	-1	-3	-10	-2	-2
114	0	-1	-1	-2	-1	-2	-1
115	2	-2	-1	-2	-1	-2	-1
116	1	-3	-2	-2	-15	-2	-3
117	-1	3	3	3	15	0	-4

	friendif	cfodif	opmddif	agrsdifr	lazydifr	greedifr	reckdifr
79	-2	-3	-2	-4	1	-2	-2
80	-1	0	-1	-1	2	-3	-3
81	-2	1	-1	0	-1	2	1
82	0	1	0	2	-3	3	4
83	2	2	1	5	1	5	0
84	-1	-2	-1	0	0	0	0
85	0	0	-2	0	0	1	0
86	-2	-2	-1	-1	0	-3	0
87	1	1	-2	0	-3	2	1
88	-1	0	-1	0	-1	1	0
89	3	2	-1	0	-1	2	0
90	-1	-4	-2	-2	2	-4	-2
91	-2	-5	-2	-3	0	-3	-3
92	0	-5	-3	-2	0	-2	-5
93	-2	-2	-2	1	-2	1	1
94	-2	-3	-4	-1	-4	-4	-5
95	-1	-2	-1	0	-1	5	2
96	0	-4	-3	-2	0	-2	-2
97	-2	-1	-4	-4	2	-6	-4
98	-3	-3	-4	-4	0	-3	0
99	-1	2	-3	1	-3	2	0
100	2	1	-1	2	0	2	1
101	-1	0	-5	2	-3	0	-2
102	-2	2	-1	-1	-2	1	0
103	2	0	-4	-1	1	0	0
104	-1	0	-1	-3	2	-1	1
105	0	0	1	1	0	-4	-2
106	-2	0	-1	1	0	1	1
107	0	2	-2	3	-3	1	3
108	-1	0	-4	4	-1	2	4
109	-2	-1	-1	-2	-2	1	1
110	0	-2	0	-4	-3	-4	-6
111	1	0	-1	0	-2	2	-1
112	-2	-1	0	-1	0	-1	0
113	0	0	-3	-2	-2	-2	-1
114	-2	0	-2	-1	-2	-1	-1
115	-1	-3	-1	-1	1	-3	-2
116	-3	-1	-1	-2	2	-5	-3
117	3	3	-2	3	-1	3	3

	compdifr	totdif	meanir	meanie	numseas	fishgot	profit
79	-2	-24	.4540	.5264	10	440	22.00
80	0	-10	.4540	.5264	10	440	22.00
81	0	-3	.2251	.4493	10	1160	58.00
82	5	10	.2251	.4493	10	1160	58.00
83	5	17	.2251	.4493	10	1160	58.00
84	0	-7	.2738	.5227	10	1000	50.00
85	2	1	.2738	.5227	10	1000	50.00
86	-1	-11	.2738	.5227	10	1000	50.00
87	1	-1	.2104	.2960	10	1011	50.55
88	1	-2	.2104	.2960	10	1011	50.55
89	3	7	.2104	.2960	10	1011	50.55
90	0	-19	.2961	.3858	8	320	16.00
91	-3	-28	.2961	.3858	8	320	16.00
92	-2	-20	.2961	.3858	8	320	16.00
93	-1	-10	.5533	.4400	3	201	10.50
94	0	-24	.5533	.4400	3	201	10.50
95	3	-3	.5533	.4400	3	201	10.50
96	-2	-21	.5534	.5764	10	306	15.30
97	-1	-29	.5534	.5764	10	306	15.30
98	2	-20	.5534	.5764	10	306	15.30
99	3	-2	.0995	.0529	10	460	23.00
100	3	8	.0995	.0529	10	460	23.00
101	4	-9	.0995	.0529	10	460	23.00
102	0	-1	.1691	.2040	10	885	44.25
103	1	0	.1691	.2040	10	885	44.25
104	-1	-4	.1691	.2040	10	885	44.25
105	1	-4	.1995	.3147	10	1071	53.55
106	1	-1	.1995	.3147	10	1071	53.55
107	4	4	.1995	.3147	10	1071	53.55
108	4	3	-.9330	-1.8670	1	290	14.50
109	1	-5	-.9330	-1.8670	1	290	14.50
110	-2	-23	-.9330	-1.8670	1	290	14.50
111	-1	-10	.0825	.2672	6	341	17.50
112	-1	-7	.0825	.2672	6	341	17.50
113	0	-14	.0825	.2672	6	341	17.50
114	-1	-13	.5654	.5893	10	341	17.50
115	-1	-14	.5654	.5893	10	341	17.50
116	-2	-20	.5654	.5893	10	341	17.50
117	3	11	.3095	.5813	10	990	49.50

	grpmkp
79	3
80	3
81	3
82	3
83	3
84	1
85	1
86	1
87	2
88	2
89	2
90	1
91	1
92	1
93	2
94	2
95	2
96	1
97	1
98	1
99	1
100	1
101	1
102	1
103	1
104	1
105	2
106	2
107	2
108	1
109	1
110	1
111	1
112	1
113	1
114	2
115	2
116	2
117	2

	group	gender	decbel	condit	help1	intel1	friend1
118	50	1	1	1	2	2	2
119	50	2	1	1	2	2	3
120	51	1	2	2	1	2	2
121	51	1	2	2	1	2	1
122	51	2	2	2	0	2	1
123	52	1	1	2	1	2	2
124	52	1	1	2	0	2	1
125	52	1	1	2	2	1	3
126	53	1	1	1	0	2	0
127	53	1	1	1	0	2	0
128	53	1	1	1	-1	1	2
129	54	1	1	1	0	2	1
130	54	2	1	1	1	1	1
131	54	2	1	1	-1	-1	2
132	55	1	1	1	1	2	2
133	55	1	1	1	2	3	2
134	55	1	1	1	0	2	1
135	56	1	1	1	0	2	2
136	56	1	1	1	0	2	0
137	56	2	1	1	1	2	1
138	57	1	1	1	2	2	2
139	57	1	1	1	1	2	2
140	57	1	1	1	1	3	2
141	58	1	1	2	1	2	-2
142	58	1	1	2	0	2	2
143	58	2	1	2	-1	3	2
144	59	1	2	2	2	2	2
145	59	1	2	2	2	2	2
146	59	2	2	2	0	2	0
147	60	1	2	1	0	2	1
148	60	1	2	1	2	1	2
149	60	1	2	1	0	2	1
150	61	1	1	1	0	2	1
151	61	1	1	1	1	2	1
152	61	1	1	1	2	2	2
153	62	1	1	2	2	3	2
154	62	1	1	2	1	3	2
155	62	1	1	2	2	3	0
156	63	1	1	2	2	2	1

	opmd1	cfo1	agress1r	greedy1r	lazy1r	reck1r	comp1r
118	-2	0	0	1	2	0	-1
119	2	1	2	-1	3	-1	-1
120	2	0	1	1	1	1	-1
121	2	2	0	1	0	0	-1
122	2	-2	1	3	2	3	-2
123	2	0	-1	0	2	0	-2
124	2	0	0	0	1	0	-2
125	2	3	1	0	-1	1	-1
126	1	-1	-1	-1	1	0	0
127	1	0	0	0	2	1	0
128	2	2	2	1	3	1	-2
129	2	0	2	0	1	0	-1
130	1	0	2	0	2	2	-1
131	2	2	3	-1	0	0	-1
132	2	1	3	1	0	1	-2
133	2	2	0	2	2	2	0
134	1	0	-1	1	0	1	-2
135	2	1	2	3	1	0	-1
136	0	0	1	0	0	0	0
137	2	2	0	0	0	0	-2
138	1	0	-1	1	0	1	-2
139	2	1	2	1	1	3	-1
140	2	0	0	0	1	0	-2
141	2	-1	-2	-3	-2	0	-3
142	2	0	-1	0	2	0	-1
143	2	0	-1	-1	3	-1	-2
144	-1	0	-2	0	0	0	-1
145	0	0	1	0	1	0	0
146	2	0	-2	-1	2	0	-2
147	1	0	1	2	0	2	-2
148	0	1	0	3	2	1	-1
149	1	0	0	0	0	-1	-1
150	1	2	0	0	-2	0	-1
151	2	1	2	1	0	0	-2
152	0	0	0	0	-1	1	-1
153	2	-2	-1	0	1	0	-1
154	3	2	0	0	2	-1	-1
155	2	0	0	0	-3	0	0
156	0	1	0	1	2	2	-1

	totlike1	help2	intel2	friend2	cfo2	opmd2	agress2r
118	6	2	-2	2	2	0	3
119	12	1	-3	2	2	1	3
120	10	1	1	1	1	1	-2
121	8	1	1	0	-1	1	-2
122	10	-2	0	0	-1	1	-2
123	6	-2	-2	0	-1	-1	-1
124	4	-3	-3	-1	-3	-1	-3
125	11	-2	-2	-1	-2	0	-2
126	1	0	-2	0	-2	0	-2
127	6	2	2	1	0	0	1
128	11	-2	-1	-2	0	1	-2
129	7	-1	-3	1	0	0	3
130	9	2	-2	2	2	0	3
131	5	3	-3	3	3	-2	3
132	11	3	1	2	2	0	2
133	17	0	2	2	0	1	-1
134	3	2	1	2	1	0	-1
135	12	0	2	1	0	0	-1
136	3	1	1	0	1	1	1
137	6	1	2	2	2	2	0
138	6	1	3	2	2	1	1
139	14	0	0	0	2	1	1
140	7	2	1	0	1	1	0
141	-8	-2	-2	-1	-2	-2	-3
142	6	-2	-2	-1	-2	-1	-1
143	4	-2	-1	2	1	1	0
144	2	1	1	0	-1	2	-3
145	8	-1	-1	0	-1	0	-2
146	1	-2	1	-3	-2	-1	-3
147	7	1	1	1	-1	1	0
148	11	0	2	1	2	0	-1
149	2	1	1	0	0	0	-3
150	3	0	0	0	0	0	0
151	8	0	1	1	1	1	0
152	5	2	2	2	2	2	0
153	6	-2	-1	0	0	0	2
154	11	-1	-1	-1	1	0	-2
155	4	-2	-2	-1	-1	0	-1
156	10	1	0	0	-1	1	-3

	lazy2r	greedy2r	reck2r	comp2r	totlike2	helpdif	inteldif
118	0	3	1	3	14	0	-4
119	0	2	2	3	13	-1	-5
120	1	-2	-1	-2	-1	0	-1
121	1	-1	-1	-1	-2	0	-1
122	0	0	-1	-2	-7	-2	-2
123	0	3	0	-1	-5	-3	-4
124	-1	-3	-3	-3	-24	-3	-5
125	1	2	-2	-2	-10	-4	-3
126	-1	-2	-1	-2	-12	0	-4
127	0	1	0	-1	6	2	0
128	0	-2	1	-2	-9	-1	-2
129	1	2	0	3	6	-1	-5
130	-2	3	2	3	13	1	-3
131	-3	3	2	3	12	4	-2
132	0	2	2	-1	13	2	-1
133	2	-1	0	0	5	-2	-1
134	0	0	2	0	7	2	-1
135	1	0	2	-2	3	0	0
136	2	0	2	-2	7	1	-1
137	0	2	2	0	13	0	0
138	0	2	2	0	14	-1	1
139	0	2	2	-1	7	-1	-2
140	1	1	0	-1	6	1	-2
141	1	-3	0	-3	-17	-3	-4
142	0	-3	-3	-1	-16	-2	-4
143	-2	-2	-2	-2	-7	-1	-4
144	-2	-2	0	-2	-6	-1	-1
145	0	-1	0	0	-6	-3	-3
146	3	-2	-3	-3	-15	-2	-1
147	3	-1	3	-2	6	1	-1
148	0	-1	-1	-1	1	-2	1
149	-3	-2	-2	-2	-10	1	-1
150	0	0	0	0	0	0	-2
151	1	1	0	-1	5	-1	-1
152	-1	1	0	-1	9	0	0
153	-2	1	0	2	0	-4	-4
154	0	-1	-2	-2	-9	-2	-4
155	0	0	-2	-2	-11	-4	-5
156	-1	-3	-2	-3	-11	-1	-2

	friendif	cfodif	opmddif	agrsdifr	lazydifr	greedifr	reckdifr
118	0	2	2	3	-2	2	1
119	-1	1	-1	1	-3	3	3
120	-1	1	-1	-3	0	-3	-2
121	-1	-3	-1	-2	1	-2	-1
122	-1	1	-1	-3	-2	-3	-4
123	-2	-1	-3	0	-2	3	0
124	-2	-3	-3	-3	-2	-3	-3
125	-4	-5	-2	-3	2	2	-3
126	0	-1	-1	-1	-2	-1	-1
127	1	0	-1	1	-2	1	-1
128	-4	-2	-1	-4	-3	-3	0
129	0	0	-2	1	0	2	0
130	1	2	-1	1	-4	3	0
131	1	1	-4	0	-3	4	2
132	0	1	-2	-1	0	1	1
133	0	-2	-1	-1	0	-3	-2
134	1	1	-1	0	0	-1	1
135	-1	-1	-2	-3	0	-3	2
136	0	1	1	0	2	0	2
137	1	0	0	0	0	2	2
138	0	2	0	2	0	1	1
139	-2	1	-1	-1	-1	1	-1
140	-2	1	-1	0	0	1	0
141	1	-1	-4	-1	3	0	0
142	-3	-2	-3	0	-2	-3	-3
143	0	1	-1	1	-5	-1	-1
144	-2	-1	3	-1	-2	-2	0
145	-2	-1	0	-3	-1	-1	0
146	-3	-2	-3	-1	1	-1	-3
147	0	-1	0	-1	3	-3	1
148	-1	1	0	-1	-2	-4	-2
149	-1	0	-1	-3	-3	-2	-1
150	-1	-2	-1	0	2	0	0
151	0	0	-1	-2	1	0	0
152	0	2	2	0	0	1	-1
153	-2	2	-2	3	-3	1	0
154	-3	-1	-3	-2	-2	-1	-1
155	-1	-1	-2	-1	3	0	-2
156	-1	-2	1	-3	-3	-4	-4

	compdifr	totdif	meanir	meanie	numseas	fishgot	profit
118	4	8	.3095	.5813	10	990	49.50
119	4	1	.3095	.5813	10	990	49.50
120	-1	-11	.5504	.6476	10	375	18.75
121	0	-10	.5504	.6476	10	375	18.75
122	0	-17	.5504	.6476	10	375	18.75
123	1	-11	-.0392	.0407	4	245	12.25
124	-1	-28	-.0392	.0407	4	245	12.25
125	-1	-21	-.0392	.0407	4	245	12.25
126	-2	-13	.2085	.3414	10	1064	53.20
127	-1	0	.2085	.3414	10	1064	53.20
128	0	-20	.2085	.3414	10	1064	53.20
129	4	-1	.1511	.1458	10	736	36.80
130	4	4	.1511	.1458	10	736	36.80
131	4	7	.1511	.1458	10	736	36.80
132	1	2	.2555	.4534	10	1003	50.15
133	0	-12	.2555	.4534	10	1003	50.15
134	2	4	.2555	.4534	10	1003	50.15
135	-1	-9	.3438	.5036	10	725	36.25
136	-2	4	.3438	.5036	10	725	36.25
137	2	7	.3438	.5036	10	725	36.25
138	2	8	.1377	.1221	10	753	37.65
139	0	-7	.1377	.1221	10	753	37.65
140	1	-1	.1377	.1221	10	753	37.65
141	0	-9	.5292	.5657	10	374	18.70
142	0	-22	.5292	.5657	10	374	18.70
143	0	-11	.5292	.5657	10	374	18.70
144	-1	-8	.6355	.8240	10	396	19.80
145	0	-14	.6355	.8240	10	396	19.80
146	-1	-16	.6355	.8240	10	396	19.80
147	0	-1	.1434	.1535	10	691	34.55
148	0	-10	.1434	.1535	10	691	34.55
149	-1	-12	.1434	.1535	10	691	34.55
150	1	-3	-.8670	-1.7330	1	280	14.00
151	1	-3	-.8670	-1.7330	1	280	14.00
152	0	4	-.8670	-1.7330	1	280	14.00
153	3	-6	.5055	.5121	10	252	12.60
154	-1	-20	.5055	.5121	10	252	12.60
155	-2	-15	.5055	.5121	10	252	12.60
156	-2	-21	.2205	.3736	4	287	14.35

	grpmkp
118	2
119	2
120	2
121	2
122	2
123	1
124	1
125	1
126	1
127	1
128	1
129	3
130	3
131	3
132	1
133	1
134	1
135	2
136	2
137	2
138	1
139	1
140	1
141	2
142	2
143	2
144	2
145	2
146	2
147	1
148	1
149	1
150	1
151	1
152	1
153	1
154	1
155	1
156	2

	group	gender	decbel	condit	help1	intel1	friend1
157	63	1	1	2	0	2	1
158	63	2	1	2	1	2	1
159	64	2	1	2	1	2	2
160	64	2	1	2	1	2	1
161	64	2	1	2	1	0	3
162	65	1	1	2	2	2	2
163	65	2	1	2	1	1	2
164	65	2	1	2	3	3	2
165	66	1	1	2	1	2	1
166	66	1	1	2	2	2	2
167	66	2	1	2	0	2	2
168	67	2	1	1	2	2	1
169	67	2	1	1	1	2	1
170	67	2	1	1	2	2	1
171	68	1	1	1	0	2	1
172	68	1	1	1	0	1	2
173	68	2	1	1	0	1	0
174	69	1	2	2	1	2	2
175	69	1	2	2	1	3	2
176	69	2	2	2	0	1	0
177	70	1	1	2	0	2	2
178	70	1	1	2	1	2	2
179	70	1	1	2	2	2	2
180	71	1	1	2	-1	2	1
181	71	1	1	2	1	0	1
182	71	1	1	2	1	2	1
183	72	1	2	1	0	2	0
184	72	1	2	1	0	2	1
185	72	2	2	1	0	1	0

	opmd1	cfo1	agress1r	greedy1r	lazy1r	reck1r	comp1r
157	2	1	1	1	1	0	-1
158	1	1	0	0	0	2	-1
159	1	1	2	2	3	2	-2
160	2	-1	0	1	0	2	-2
161	2	1	2	0	0	0	-1
162	2	3	-1	2	2	0	-1
163	1	1	-1	0	1	2	-1
164	3	2	2	1	1	-1	-2
165	1	1	1	2	1	2	-2
166	0	0	0	0	2	0	-1
167	2	0	1	2	3	3	-1
168	1	0	0	1	1	2	-1
169	0	-1	0	-1	0	2	1
170	3	1	1	0	2	2	-1
171	0	2	0	1	0	0	0
172	3	0	1	2	2	-1	-2
173	2	-1	1	0	-1	0	-1
174	2	1	-3	-2	1	0	-2
175	2	2	1	0	-1	0	-2
176	1	0	0	0	0	0	0
177	2	2	-1	0	-1	0	-2
178	2	1	2	0	0	0	0
179	1	2	1	0	0	1	-2
180	1	0	0	2	1	0	-1
181	1	0	0	0	0	0	0
182	2	0	-1	-1	0	0	-2
183	3	0	0	0	0	0	0
184	1	0	2	1	1	2	0
185	0	0	0	0	0	0	0

	totlike1	help2	intel2	friend2	cfo2	opmd2	agress2r
157	8	1	2	0	-1	1	-2
158	7	-2	-1	-1	-1	0	-2
159	14	-1	-2	0	-2	0	-2
160	6	1	2	1	0	1	-2
161	8	0	1	-2	-1	0	-2
162	13	2	2	2	0	3	-3
163	7	1	1	1	1	1	-1
164	14	3	3	3	3	2	3
165	10	1	-1	0	-1	1	0
166	7	2	1	1	-1	0	-2
167	14	2	2	1	1	2	0
168	9	1	2	0	1	1	-2
169	5	2	1	0	0	0	1
170	13	2	1	2	2	1	3
171	6	1	1	0	1	1	1
172	8	-2	0	1	0	-3	2
173	1	0	-2	0	1	0	3
174	2	0	1	1	0	2	-3
175	8	-2	-2	-2	-3	0	-3
176	2	-1	2	0	-3	0	-3
177	4	-2	-2	-1	1	-1	1
178	10	0	-2	0	-1	-1	2
179	9	-2	-2	0	-1	0	2
180	5	0	2	1	1	1	1
181	3	0	2	0	2	0	-2
182	2	1	2	1	1	2	0
183	5	2	3	1	3	0	2
184	10	-2	-1	0	-2	0	-1
185	1	0	1	0	0	0	1

	lazy2r	greedy2r	reck2r	comp2r	totlike2	helpdif	inteldif
157	0	-1	0	-2	-2	1	0
158	0	-2	-2	-3	-14	-3	-3
159	0	-2	-2	-1	-12	-2	-4
160	2	-1	0	-2	2	0	0
161	0	-3	-2	-2	-11	-1	1
162	2	-2	-2	-3	1	0	0
163	1	-1	-1	-1	2	0	0
164	2	-3	-3	-3	10	0	0
165	-1	-2	0	-1	-4	0	-3
166	0	0	-1	-2	-2	0	-1
167	3	-1	1	-2	9	2	0
168	1	-2	-2	-3	-3	-1	0
169	-1	1	1	1	6	1	-1
170	2	1	3	2	19	0	-1
171	0	1	2	1	9	1	-1
172	-1	2	0	3	2	-2	-1
173	0	2	2	3	9	0	-3
174	-2	-3	-3	-3	-10	-1	-1
175	0	-3	-2	-3	-20	-3	-5
176	1	-3	-2	-3	-12	-1	1
177	0	-1	-1	-2	-8	-2	-4
178	-2	0	0	2	-2	-1	-4
179	0	1	3	1	2	-4	-4
180	0	-1	2	2	9	1	0
181	0	-2	-2	-2	-4	-1	2
182	-1	-1	1	0	6	0	0
183	0	2	2	1	16	2	1
184	1	-1	-1	-2	-9	-2	-3
185	0	1	1	0	4	0	0

	friendif	cfodif	opmddif	agrsdifr	lazydifr	greedifr	reckdifr
157	-1	-2	-1	-3	-1	-2	0
158	-2	-2	-1	-2	0	-2	-4
159	-2	-3	-1	-4	-3	-4	-4
160	0	1	-1	-2	2	-2	-2
161	-5	-2	-2	-4	0	-3	-2
162	0	-3	1	-2	0	-4	-2
163	-1	0	0	0	0	-1	-3
164	1	1	-1	1	1	-4	-2
165	-1	-2	0	-1	-2	-4	-2
166	-1	-1	0	-2	-2	0	-1
167	-1	1	0	-1	0	-3	-2
168	-1	1	0	-2	0	-3	-4
169	-1	1	0	1	-1	2	-1
170	1	1	-2	2	0	1	1
171	-1	-1	1	1	0	0	2
172	-1	0	-6	1	-3	0	1
173	0	2	-2	2	1	2	2
174	-1	-1	0	0	-3	-1	-3
175	-4	-5	-2	-4	1	-3	-2
176	0	-3	-1	-3	1	-3	-2
177	-3	-1	-3	2	1	-1	-1
178	-2	-2	-3	0	-2	0	0
179	-2	-3	-1	1	0	1	2
180	0	1	0	1	-1	-3	2
181	-1	2	-1	-2	0	-2	-2
182	0	1	0	1	-1	0	1
183	1	3	-3	2	0	2	2
184	-1	-2	-1	-3	0	-2	-3
185	0	0	0	1	0	1	1

	compdifr	totdif	meanir	meanie	numseas	fishgot	profit
157	-1	-10	.2205	.3736	4	287	14.35
158	-2	-21	.2205	.3736	4	287	14.35
159	1	-26	.4923	.6315	10	423	21.15
160	0	-4	.4923	.6315	10	423	21.15
161	-1	-19	.4923	.6315	10	423	21.15
162	-2	-12	.1733	.2767	4	296	14.80
163	0	-5	.1733	.2767	4	296	14.80
164	-1	-4	.1733	.2767	4	296	14.80
165	1	-14	.0367	.0707	4	266	13.30
166	-1	-9	.0367	.0707	4	266	13.30
167	-1	-5	.0367	.0707	4	266	13.30
168	-2	-12	.1345	.2202	10	967	48.35
169	0	1	.1345	.2202	10	967	48.35
170	3	6	.1345	.2202	10	967	48.35
171	1	3	.2118	.3174	10	971	48.55
172	5	-6	.2118	.3174	10	971	48.55
173	4	8	.2118	.3174	10	971	48.55
174	-1	-12	.5602	.7185	10	365	18.25
175	-1	-28	.5602	.7185	10	365	18.25
176	-3	-14	.5602	.7185	10	365	18.25
177	0	-12	.5592	.5386	10	229	11.45
178	2	-12	.5592	.5386	10	229	11.45
179	3	-7	.5592	.5386	10	229	11.45
180	3	4	-.2772	-.5603	3	260	13.00
181	-2	-7	-.2772	-.5603	3	260	13.00
182	2	4	-.2772	-.5603	3	260	13.00
183	1	11	.2264	.4307	10	1121	56.50
184	-2	-19	.2264	.4307	10	1121	56.50
185	0	3	.2264	.4307	10	1121	56.50

	grpmkp
157	2
158	2
159	4
160	4
161	4
162	3
163	3
164	3
165	2
166	2
167	2
168	4
169	4
170	4
171	2
172	2
173	2
174	2
175	2
176	2
177	1
178	1
179	1
180	1
181	1
182	1
183	2
184	2
185	2