

The Altruism Scale: A Measure of Co-operative, Individualistic, and Competitive Interpersonal Orientation

Author(s): Jack Sawyer

Source: *American Journal of Sociology*, Vol. 71, No. 4 (Jan., 1966), pp. 407-416

Published by: The University of Chicago Press

Stable URL: <https://www.jstor.org/stable/2774936>

Accessed: 06-04-2020 14:37 UTC

## REFERENCES

Linked references are available on JSTOR for this article:

[https://www.jstor.org/stable/2774936?seq=1&cid=pdf-reference#references\\_tab\\_contents](https://www.jstor.org/stable/2774936?seq=1&cid=pdf-reference#references_tab_contents)

You may need to log in to JSTOR to access the linked references.

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

*The University of Chicago Press* is collaborating with JSTOR to digitize, preserve and extend access to *American Journal of Sociology*

# The Altruism Scale: A Measure of Co-operative, Individualistic, and Competitive Interpersonal Orientation<sup>1</sup>

Jack Sawyer

## ABSTRACT

Consider an interaction situation with various outcomes whose values to two individuals, Person and Other, are imperfectly correlated (as in non-zero-sum games). Let the welfare of Person be  $P$  and that of Other be  $O$ . Then if Person is purely co-operative, he maximizes  $P + O$ ; if purely competitive, he maximizes  $P - O$ ; and if purely individualistic, he maximizes  $P$  alone. More generally, he maximizes  $P + aO$ , where  $a$  (altruism) normally ranges from 1.0 to  $-1.0$ . To assess  $a$ , Person either directly estimates its value on a scale from 1.0 to  $-1.0$  or ranks his preferences for various outcomes for himself and for Other. Both measures show that (1) three college groups all differentiate among friend, stranger, and antagonist, (2) YMCA college students are generally more positively oriented toward the other's welfare—friend, stranger, or antagonist, (3) business students maximize their own reward more, and (4) social science students differentiate most between friends and antagonists.

The Altruism Scale assesses the value one places upon the welfare of another in relation to his own. This measure is intended to correspond generally to conceptualizations of altruism both from psychology ("affection and concern for others") and from sociology ("where the goal of conduct [of the ego] is exterior to itself"), as well as to more general definition ("the principle or practice of seeking the welfare of others").<sup>2</sup>

<sup>1</sup> The author is grateful to Norman Bradburn of the University of Chicago Graduate School of Business and to Clifford Holmes and Alex Shukin of George Williams College for aid in obtaining subjects; to Lawrence Carson, Brian Heller, and Thomas Tyler for assistance in the analysis of the data; to Peter Blau for comments on the manuscript; and, particularly, to Morris Friedell for insightful contributions to the conceptualization as well as to later stages of this research. This research was supported by U.S. Public Health Service grant MH 05350, "Experiments on the Resolution of Interpersonal Conflict."

<sup>2</sup> This notable correspondence of psychological, sociological, and general usage is found in Horace B. English and Ava C. English, *A Comprehensive Dictionary of Psychological and Psychoanalytic Terms* (New York: David McKay, 1958), p. 24; Émile Durkheim, *Suicide* (Glencoe, Ill.: Free Press, 1951), p. 221; and C. L. Barnhart (ed.), *The American College Dictionary* (New York: Random House, 1962), p. 38.

An explicit assessment of altruism as an individual characteristic serves at least two major lines of inquiry. First, it helps in the traditional problem of evaluation of the operation of general norms, as characterized by Durkheim in his examination of altruistic suicide, or by Parsons in positing collectivistic and individualistic orientations.<sup>3</sup>

More recently, emphasis upon understanding interpersonal behavior by evaluating its costs and rewards—epitomized by the work of Thibaut and Kelley, Homans, and Blau—has added new relevance to the concept of altruism.<sup>4</sup> If the behavior of two individuals is to be assessed strictly as a function of the rewards (positive and negative) to each, then it becomes crucial to know to what extent these interact, such that the welfare of one person provides a reward to the other.

<sup>3</sup> Durkheim, *op. cit.*, pp. 217–76; Talcott Parsons, *The Structure of Social Action* (Glencoe, Ill.: Free Press, 1949), pp. 329–38.

<sup>4</sup> John W. Thibaut and Harold H. Kelley, *The Social Psychology of Groups* (New York: John Wiley & Sons, 1959); George C. Homans, *Social Behavior: Its Elementary Forms* (New York: Harcourt, Brace & World, 1961); Peter M. Blau, *Exchange and Power in Social Life* (New York: John Wiley & Sons, 1964).

## RATIONALE

Interpersonal behavior may be characterized by situations in which two or more persons each take certain of alternative actions, whose combination produces outcomes providing particular rewards for each. Such a formulation, deriving from and elaborating upon bargaining and game theory, has proven highly provocative of both conceptual and empirical analysis.<sup>5</sup>

As conceived in this analysis, a person's selection among alternative actions depends, to some degree, upon the resultant welfare not only to himself but to the other as well. Explicitly or implicitly, he places a certain weight upon the other's welfare in relation to his own. Three particular values of this weight are of special interest, for they define the following prominent orientations.

*Co-operation, individualism, and competition.*—Assume that Person is interacting with Other in a situation in which there are several possible outcomes, not all equally favorable to both. Then, in arriving at a preference among these outcomes, three prominent orientations that Person can take are these: (1) He can prefer that outcome in which the sum of his welfare and that of Other is the greatest; (2) he can simply prefer that outcome in which his own welfare is the greatest, irrespective of Other's; or (3) he can prefer that outcome in which the relative advantage of his welfare over Other's is the greatest.

<sup>5</sup> See R. Duncan Luce and Howard Raiffa, *Games and Decisions* (New York: John Wiley & Sons, 1957), for a general exposition of game theory, emphasizing its relation to the social sciences; Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, Mass.: Harvard University, 1960), for insightful intuitive extensions involving threats and promises, commitment, credibility, etc.; Anatol Rapoport and Carol Orwant, "Experimental Games: A Review," *Behavioral Science*, VII (January, 1962), 1-37, for empirical research; and Jack Sawyer and Morris F. Friedell, "The Interaction Screen: An Operational Model for Experimentation on Interpersonal Behavior," *Behavioral Science*, X (October, 1965), 446-60, for an articulation with various constructs of interpersonal behavior.

These three orientations may be considered as pure co-operation, pure individualism, and pure competition, and the conceptual element that differentiates them is the weight Person places upon the welfare ( $O$ ) of Other in relation to his own ( $P$ ). If Person is acting purely co-operatively, he maximizes  $P + O$ ; if acting purely individualistically, he maximizes  $P$  alone; and if acting purely competitively, he maximizes  $P - O$ . Examples of pure co-operation, individualism, and competition occur in the interaction of (1) husband and wife striving to augment family income, (2) entrepreneurs each attempting merely to maximize his own profit, and (3) bureaucrats competing for relative prestige and status.

Most interaction probably does not correspond exactly to any of these three situations but rather to intermediate orientations involving their combination: for example, Person may place some positive weight on the welfare of Other, but not so much as on his own. The cases in which Person maximizes  $P + O$ ,  $P$  alone, and  $P - O$  serve as defining orientations to establish a continuum of degrees of altruism, on which pure co-operation and pure competition are extremes, and pure individualism the midpoint. Then Person may be regarded, not simply as evidencing one of three tendencies, but more generally as maximizing  $P + aO$ , where  $a$  (altruism) normally ranges from 1.0 (pure co-operation) through 0 (individualism) to -1.0 (pure competition). The relative weight placed upon the welfare of the other is thus summarized in a single parameter,  $a$ —the assessment of which is the purpose of the Altruism Scale.

In the present formulation, altruism is not necessarily opposed to egoism; it is possible (as in pure co-operation, when  $a$  equals 1.0) to be equally concerned with both one's own and the other's welfare. Altruism is not incompatible with a desire for greater individual welfare. If, for example, we both prefer a travel grant to Moscow over one to Los Angeles, then my

preference that we each receive one to Moscow is equally altruistic with a preference that we each receive one to Los Angeles, and both are more altruistic than a preference that mine be to Moscow and yours to Los Angeles.

Conditions prescribed by Durkheim for altruistic suicide imply a value of  $a$  much greater than 1.0; the value placed upon oneself is very small in relation to that placed upon (collective) others. Though this extreme act is relatively rare, lesser degrees of selflessness are common and find favor with various moral systems. Logic, however, cannot universally recommend even such lesser degrees of selflessness. In fact, it is reasonable for the altruism of one of two interacting persons to exceed 1.0 *only if* the other's does not: Only if, for example, a husband's altruism toward his wife is less than 1.0 can hers toward him reasonably be greater than 1.0; then they are agreeing that his welfare is more important than hers.

If, however, each person values the other's welfare more than his own, this may cause an infinite regress in which each person says, "I want to do what you'd like," and the intrinsic values, overshadowed by the altruistic values, may never become known. For example, suppose that, in dining together, each of us would rather let the other have his choice of restaurant. Then I will try to make you believe that my preference is the restaurant I think you like, and you will do the same. Thus I will discount what you say, and guess at your true preference. If I guess wrong, you may eventually become convinced that the restaurant I claim I like is truly my preference (since you know it's not yours), and we may thus go to a place neither of us prefers, though each may think (for a time, at least) that the other does.

Toward the other end of the altruism continuum, values of  $a$  less than  $-1.0$  may also have unreasonable aspects. Competition normally doesn't go this far: If

you and I are each trying to reach a goal before the other, I may welcome an event that slows me a week but slows you two weeks—but this only implies a value of  $a$  between 0 and  $-1.0$ . For  $a$  to be less than  $-1.0$ , I have to be so interested in your delay that I am willing to sustain even greater delay myself; such a feeling, especially if reciprocated, has highly destructive implications.

Thus both unusually high and low values imply potential difficulties, and values from  $-1.0$  to  $1.0$ —between pure competition and pure co-operation—may be considered to constitute a normal range. Within this range, values should vary widely, depending upon the situation and upon the two persons. What levels of altruism are typical for given situations, persons, and others is an empirical question, but it seems likely that effective interpersonal relations imply some moderately positive value, definitely greater than 0 and less than 1.0.

#### THE MEASUREMENT OF ALTRUISM

The few previous attempts<sup>6</sup> to measure altruism objectively in individuals have all approached it as a stable, general characteristic.<sup>7</sup> The present approach, how-

<sup>6</sup> Raymond B. Cattell and J. Z. Horowitz, "Objective Personality Tests Investigating the Structure of Altruism in Relation to Source Traits A, H, and L," *Journal of Personality*, XXI (September, 1952), 103-17; Robert W. Friedrichs, "Alter Versus Ego: An Exploratory Assessment of Altruism," *American Sociological Review*, XXV (August, 1960), 496-508; Robert W. Friedrichs, "An Exploratory Study of Altruism" (unpublished Ph.D. thesis, University of Wisconsin, 1957); Salomon Rettig, "An Exploratory Study of Altruism" (unpublished Ph.D. thesis, Ohio State University, 1956); and Buford Steffire, "Concurrent Validity of the Vocational Value Inventory," *Journal of Educational Research*, LII (May, 1959), 339-41.

<sup>7</sup> One such attempt (Friedrichs, *op. cit.*) illustrates the difficulty of this approach: a sixteen-item especially constructed Likert scale of altruistic acts (of high internal consistency) correlated only .17 with a self-rating of altruism and .15 with a summation of others' ratings (also of high internal consistency). These two ratings correlated .37, but the others' ratings correlated .66 with "at-

ever, conceives of altruism as a characteristic that may vary, within individuals, as a function of the object of the altruism and of the commodity and situation in which it is expressed. For example, one may be altruistic toward peers but not toward subordinates, altruistic with prestige but not with money, or vice versa.

A direct and theoretically desirable way to assess such variation in a person's altruistic behavior would be to observe him in specific natural situations where he makes choices that affect his own and another's welfare. But practical difficulties of observation and methodological problems of uncontrolled and unknown biases detract from this approach and suggest what is perhaps the next best procedure: Ask a person to report what he feels his behavior would be in such situations. This is the approach of the Altruism Scale, which employs for this purpose two separate measures—one a ranking of outcomes for self and other, the other a direct estimation of altruism on a scale from 1.0 to -1.0.

*Ranking of outcomes.*—Subjects (all of whom were college students) received the following written instructions:

Imagine yourself in the following situation. It is the beginning of the term and you are taking, among other courses, an important seminar in your area of specialization. It so happens that there is only one other student in the seminar. You are both taking the course for credit, however, and each of you will receive one of the grades, A, B, or C. Since there

are three possible outcomes for each of you, and the instructor assigns grades independently, there exist nine possible combinations of outcomes, ranging from both A's to both C's. Rank your preference for these nine outcomes in the following situation. Place the numbers 1 (first choice) to 9 in the cells of the accompanying table, indicating your preference for each of the combinations of grades for you and the other student. If you have absolutely no preference between two combinations, indicate this by placing the same number in both of the cells.

I. The other person is *one of your best friends*. You and he have been together in several classes and seminars during the course of your work here. You have enjoyed working with him on joint projects.

In Figure 1, the response matrix is filled in as it would be by a purely cooperative respondent, who cares exactly as much about the other's grade as about his own. Two A's are best and two C's worst, and it is better that one of them have an A and the other a B than that both have B's, though the strictly cooperative person does not care whether he or the other person gets the A.

A purely individualistic orientation results in choices as in Figure 2, where a person prefers first the three combinations that give him an A, but does not discriminate among these by the grade the other receives. The third defining orientation—pure competition—is represented in Figure 3. Most preferred is an A for oneself and a C for the other, and the opposite is the least preferred. A purely competitive person is indifferent between an A for himself and a B for the other, and a B for himself and a C for the other; in both cases his relative advantage—his only concern—is the same.<sup>8</sup>

tractiveness as a friend," suggesting that they might simply tap a slightly different aspect of friendliness. The average absolute correlation of self and others' rating with twenty other variables thought possibly indicative of altruism was .07; only one of these forty correlations reached .15. Perhaps because of such difficulties, the few measures of altruism so far constructed appear to have experienced little research use: A search of *Sociological Abstracts*, since its inception in 1953, and of *Psychological Abstracts* for the same period, under "altruism" and the names of the authors of the four articles, reveals no use of these or similar measures.

<sup>8</sup> It has been assumed, in computing a value for altruism from these choices, that the utility of a B lies halfway between that of an A and that of a C. This was checked on the twenty-eight social science students, whose direct estimates on a ten-point scale placed a B, on the average, 55 per cent of the distance from a C to an A. Only three students placed a B less than 40 per cent or more than 70 per cent of the way from a C to an A. Further,

		OTHER GETS		
		A	B	C
PERSON GETS	A	1	2	3
	B	2	3	4
	C	3	4	5

FIG. 1.—Preference rankings of a strictly co-operative person. (Numbers in the corner of each cell illustrate adjustment for tied ranks.)

The ranks are scored to indicate how much a person values the other's welfare in relation to his own—producing, for the three defining orientations,  $a$  values of 1.0, 0, and -1.0. The value placed upon own welfare is indicated by the extent to which one prefers higher to lower grades; this is indexed by the sum of the ranks he gives to the three cells in which he receives C's minus the sum of the ranks he gives to the three cells in which he receives A's. The larger the difference (the more he discriminates between an A and a C), the more he cares about his own welfare.

Orientation toward the welfare of the other is assessed similarly, by subtracting from the summed ranks for the three cells in which the other receives a C the summed ranks for the three cells in which the other

		OTHER GETS		
		A	B	C
PERSON GETS	A	1	1	1
	B	2	2	2
	C	3	3	3

FIG. 2.—Preference rankings of a strictly individualistic person.

receives an A. For the other, however, one may prefer C's to A's, and the corresponding difference can be either positive (indicating positive altruism) or negative (indicating negative altruism).

To produce the measure of relative altruism,  $a$ , the discrimination between C's and A's for the other is divided by the discrimination between C's and A's for self. Thus,

$$a = \frac{(\text{summed ranks for C to other}) - (\text{summed ranks for A to other})}{(\text{summed ranks for C to self}) - (\text{summed ranks for A to self})}$$

Division by a measure indexing strength of preference for own grades creates the

		OTHER GETS		
		A	B	C
PERSON GETS	A	3	2	1
	B	4	3	2
	C	5	4	3

FIG. 3.—Preference rankings of a strictly competitive person.

desired *relative* altruism, and causes the three defining orientations to have the appropriate values: In Figure 1 (after adjusting for tied ranks),<sup>9</sup>  $a$  equals (21.5 —

trial computations assuming a B to be as little as three-tenths of the distance from a C to an A, or as much as seven-tenths, affected the value of altruism very little.

<sup>9</sup> When ties exist, ranks are adjusted to give the average ordinal position, as illustrated by the numbers in the corner of each cell in Figure 1. The sum of the nine ranks is thus always the same, promoting comparability and permitting the difference between summed ranks for A's and for C's to express completely average preferences for own and other's welfare (since the summed ranks for B's is then determined).

8.5)/(21.5 — 8.5), or 1.00; in Figure 2,  $a$  equals  $(15 - 15)/(24 - 6)$ , or .00; in Figure 3,  $a$  equals  $(8.5 - 21.5)/(21.5 - 8.5)$ , or —1.00.<sup>10</sup>

Thus, this measure of altruism translates into a single value on an essentially continuous scale<sup>11</sup> the several choices a person makes among alternatives that are better or worse for him or the other; it infers the value of altruism from the person's choice behavior. Alternatively, however, the person can, as in the following measure, estimate his value of  $a$  directly upon a graphic scale.

*Direct scale estimation.*—The scale ranges from —1.0 to 1.0 by tenths, and the person checks one of the resulting twenty-one boxes. The scale is anchored by descriptions attached to the boxes at the ends and midpoint of the scale (the three defining orientations) and to the boxes halfway between these, as follows:

- 1.0 I am *equally* interested in how *good* his grade is and in how *good* my grade is
- .5 I am *half* as interested in how *good* his grade is as I am in how *good* my grade is
- .0 I am *only* interested in how *good* my grade is; how good or poor his grade is makes no difference to me

<sup>10</sup> If a person's preference for A's does not exceed his preference for C's, the denominator is either zero (making altruism indeterminate) or negative (making it appear more altruistic to want lower grades for the other, too). Such preferences show the falsity, for a given person, of the initial assumption that higher grades are preferred to lower; for such a person, it is inappropriate to assess altruism through grades, since these are not something he values.

<sup>11</sup> In practice, many subjects' rankings produce values intermediate between those of pure cooperation, individualism, and competition. One prominent modification of these defining orientations is simply resolving tied ranks in one's own favor. For example, instead of the pure individualism of Figure 2, a person might prefer higher grades for the other whenever it involved no sacrifice in his own grade. This orientation would produce ranks of 1, 2, and 3 in the first row; 4, 5, and 6 in the second row; and 7, 8, and 9 in the third row, resulting in an altruism of .33 instead of .00.

- .5 I am *equally* interested in how much *better* my grade is than his and in how *good* my grade is per se
- 1.0 I am *only* interested in how much *better* my grade is than his; I do not care how *good* my grade is per se

The italicized words emphasize to the respondent the relation between his and the other's welfare at each of the five anchor points.<sup>12</sup> The words are chosen to correspond to values of  $a$  in the general expression  $P + aO$  of the total weighted welfare. For the first three alternatives, the value of  $a$  is directly specified (by the words *equally*, *half*, and *only*). The fourth anchor statement specifies equal interest in  $P - O$  and in  $P$ , a total of  $2P - O$ , which is relatively the same as  $P - .5O$ . In the last anchor statement, the word "better" specifies  $P - O$  as the criterion.

Thus defined by these five statements, this scale reflects the same rationale that underlies the previously described measurement through rankings; rather than inferring altruism from choices that allocate welfare, however, direct estimation assumes that a person can make a reasonable estimate of his preference for his own and other's welfare. This serves to quantify such common feelings as "I'd do as much for him as for myself," "I'm just looking out for myself," and "All I care about is beating him." A design to examine how well it serves is specified in the next section.

#### VALIDATION PROCEDURE

The purpose was to determine the extent to which the Altruism Scale possesses both generality (over different measures and situations) and discriminability (among groups and alters for whom altruism should differ). Hence, altruism was measured

<sup>12</sup> It now appears that more affectively toned statements (e.g., "I want both our grades to be as high as possible") may produce purer expressions of desire, less contaminated by cognitive orientations than the term "interested" may suggest (e.g., whether it is strategic to act altruistically).

both by ranking of outcomes and by direct scale estimation, for three groups of subjects, each toward three different alters and in two situations.

*Alters: friend, stranger, antagonist.*—Since reciprocation of friendship or antagonism forms the most basic kind of interpersonal balance—widely theorized about and observed<sup>13</sup>—altruism should vary strongly with the nature of one's relation to the other person. To assess the influence of affective relations, subjects were presented not only the previously described situation I, involving a friend, but the following as well:

II. The other person is *virtually unknown to you*. Although he is a student in your department, you have never before happened to have class with him or otherwise to come in contact with him. You have heard nothing in particular about him from any sources.

III. The other person has *often been beligerent toward you*. In several other classes in which the two of you have been together, he has frequently made harsh attacks upon your viewpoints. His attacks have been very direct and personal and as a result you have a strong dislike of him.

*Situations: grades and salary.*—Since altruism is only meaningful for commodities one values, it is important to use a commodity as widely valued as possible by the particular population. And because altruism may vary with commodity and situation, it is also important to use more than one situation.<sup>14</sup> Hence, this valida-

tion uses not only grades in an academic situation, but salary in an occupational situation, as follows:

Imagine yourself in the following situation. You and another person have just graduated together from the same college and have accepted as your first permanent full-time jobs similar positions in the same large institution. Each of you is to be paid either \$6,000, \$8,000, or \$10,000 a year, and other things being equal, each of you would prefer a larger to a smaller salary.<sup>15</sup> [The remaining instructions are similar to those for grades.]

*Measures: ranking and direct estimation.*—Each person responded using both measures, in both situations, toward all three alters—in this order: ranking of grades (first for friend, then stranger, then antagonist), direct estimation for grades, ranking of salaries, direct estimation for salary.

*Groups: social science, business, and YMCA students.*—Responses were obtained from three groups thought to differ in altruism: social science students (mostly sociology graduate students) in a small groups class at the University of Chicago; students in the University's Graduate School of Business; and students at George Williams College, which trains students for YMCA and other social service positions. George Williams students come mainly from lower-middle-class backgrounds, have usually been oriented toward the YMCA for some time, and are, according to Grinker and his associates, of unusual mental health.<sup>16</sup>

<sup>15</sup> For each of the groups, the three salaries represent high, medium, and low points on the distribution of salaries actually received by students in that field. The figures given above are for graduate students in social sciences; for business students working toward the M.B.A., the three levels were \$500, \$600, and \$700 per month; for YMCA college students working toward a Bachelor's degree, the three levels were \$4,000, \$5,000, and \$6,000 per year.

<sup>16</sup> Roy R. Grinker, Sr., Roy R. Grinker, Jr., and John Timberlake, "‘Mentally Healthy’ Young Males (Homoclités): A Study," *Archives of General Psychiatry*, VI (1962), 405–53.

<sup>13</sup> Cf. Alvin W. Gouldner, "The Norm of Reciprocity: A Preliminary Statement," *American Sociological Review*, XXV (April, 1960), 161–78; Theodore M. Newcomb, *The Acquaintance Process* (New York: Holt, Rinehart, & Winston, 1961); Robert F. Priest and Jack Sawyer, "Proximity and Peership: Changing Bases of Interpersonal Attraction," *American Psychologist*, XX (July, 1965), 551. (Abstract.)

<sup>14</sup> Added scales have been constructed in another important area: relations with the opposite sex (for single college students). Girls give preferences for three different frequencies of dating (the more the better) for themselves and a hypothetical apartment-mate. Men do the same for three levels of physical intimacy each enjoys with his girl.



VALIDITY, RELIABILITY, AND  
IMPLICATIONS

Comparing the three groups and the various scales assesses both the validity and the reliability with which the construct of altruism is measured. To be valid, the Altruism Scale should differentiate among the three groups in ways that correspond to their general orientations, and

TABLE 1  
MEAN ALTRUISM TOWARD FRIEND, STRANGER,  
AND ANTAGONIST, BY YMCA, BUSINESS,  
AND SOCIAL SCIENCE STUDENTS\*

SITUATION, MEASURE, AND ALTER	GROUP			
	YMCA (N = 62)	Business (N = 32)	Social Science (N = 28)	All 3 Groups (N = 122)
Grades (Ranking):				
Friend.....	47	29	41	41
Stranger.....	24	03	12	16
Antagonist....	-10	-28	-41	-22
Grades (Scale):				
Friend.....	63	43	55	56
Stranger.....	18	-03	09	10
Antagonist....	-06	-37	-35	-21
Salary (Ranking):				
Friend.....	35	22	35	32
Stranger.....	19	03	06	12
Antagonist....	-01	-25	-25	-13
Salary (Scale):				
Friend.....	51	39	60	50
Stranger.....	15	-01	03	08
Antagonist....	-02	-25	-31	-15
Both situations and both measures:				
Friend.....	49	33	48	45
Stranger.....	19	01	07	12
Antagonist....	-05	-29	-33	-18
All twelve responses.....	21	02	07	13

\* All altruism values are in hundredths.

responses toward friend, stranger, and antagonist should vary systematically. Further, if the scale possesses internal

<sup>17</sup> Principles for establishing construct validity employed in the present analysis are detailed in Lee J. Cronbach and Paul E. Meehl, "Construct Validity in Psychological Tests," *Psychological Bulletin*, LII (July, 1955), 281-302.

consistency, such differences should emerge regardless of the mode of measurement, and altruism shown toward the three alters for the two commodities should correlate moderately though not too highly.<sup>17</sup>

*Distinction among alters.*—As Table 1 shows, there are, for all three groups, in both situations, using either measure, large and consistent differences among the three alters. Altruism toward a friend is substantially greater than that toward a stranger, which in turn is substantially greater than that toward an antagonist.<sup>18</sup> The over-all averages, .45, .12, and -.18, place the stranger almost exactly halfway between the friend and the antagonist; there is slight positive altruism toward strangers; and though altruism toward antagonists is negative, it is considerably smaller in absolute magnitude than the positive altruism shown toward friends.

*Group differences.*—YMCA college students are generally more altruistic; their mean altruism toward all alters is .21, and even toward an antagonist, it is barely negative. Social science and business students both have mean altruism near zero, but differ in the extent to which they discriminate among friend, stranger, and antagonist. Responses of business students are almost exactly balanced around the zero point, with a spread of about .6 between friend and antagonist. Social science students discriminate more (about .8) between friend and antagonist.

Thus, each group appears to respond according to values generally ascribed to it: YMCA college students, interested in social service, show more altruism, generally, toward anyone; business students are more concerned strictly with maximizing their own welfare, disregarding the other's;

<sup>18</sup> This and all following comparative statements of results are supported by tests of statistical significance (usually a two-sample *t* test). For each result, the probability of occurrence, through random sampling under the null hypothesis, of differences as large as those obtained is less than .01. The same is true for relations assessed by correlation coefficients.

social science students, trained to recognize individual differences in behavior, give more weight to their specific previous experience with the other person. More than the other groups, the social science students act in accord with principles of exchange and reciprocity.<sup>19</sup> Grossly, the tendencies differentiating the three groups may be put as follows: YMCA students help everyone, business students help themselves, and social science students help those who help them.

*Individual characteristics.*—These group differences on altruism are reinforced in two ways by relations for the characteristic of authoritarianism, as measured by the F Scale.<sup>20</sup> First, altruism appears to be quite distinct from authoritarianism, as evidenced by the correlation of  $-.03$ , over all 122 individuals, between a person's F Scale and his total score on altruism, summed over the twelve measures. Even separate scores, computed for altruism toward friends, toward strangers, and toward antagonists, and for grades and for salary, all correlate less than  $.10$  with the F Scale.

Second, the F Scale itself discriminates among the three groups in a way that appears reasonable, lending further credence to their use as standards: Business students are the most authoritarian, social science students the least, and YMCA college students—whose lower-middle-class background suggests authoritarianism, but whose social service orientation suggests the reverse—are in the middle.

Two sex differences appeared. Among YMCA college students, women are generally even more altruistic—toward friend, stranger, or antagonist—than are men. Considering the background of these students, it seems reasonable for them to display what is probably the general norm, belief, and fact—that women *are* more altruistic.

<sup>19</sup> Blau, *op. cit.*; Gouldner, *op. cit.*; Homans, *op. cit.*

<sup>20</sup> Theodore W. Adorno *et al.*, *The Authoritarian Personality* (New York: Harper, 1950).

In social science, a less conventional field for women, their responses are more similar to those of men. Only in their failure to share men's unusual punitiveness toward antagonists do they differ markedly; women's altruism toward antagonists is  $-.22$ , men's  $-.42$ . If, within social science, these women are less likely than are men to achieve full-time professional status, it seems reasonable that they are also less likely to see antagonists as competitors whom one wishes ill.<sup>21</sup>

Within the males of the YMCA college group, two variables of family structure relate to altruism.<sup>22</sup> The 30 per cent who are married have a mean altruism of  $.39$ ; mean altruism for single males is  $.15$ . The number of older sisters correlates  $.35$  with total altruism; for men having no older sisters, mean altruism is  $.14$ , for those having at least one older sister, mean altruism is  $.47$ . Number of older brothers, younger brothers, or younger sisters is not related to altruism.

To understand why only the older-sister sibling relation might be associated with altruism, one should recognize that of the four possible age-sex combinations for a pair of siblings (twins excepted), only the pairing of an older sister and a younger brother fails to produce a clear dominance. Among like-sex pairs, the older is domi-

<sup>21</sup> Comparing males alone among the three groups leaves the findings essentially unchanged. The slightly greater differentiation among friend, stranger, and antagonist made by male social science students (16 of the 28) distinguishes somewhat further that group from the others. There is little or no change in the other groups, since, of the YMCA students, less than 15 per cent were women, and of the business students, none.

<sup>22</sup> For the YMCA group, but not the other two, additional variables were available: 14 background characteristics, 7 paired self-descriptive adjectives (co-operative-competitive, etc.), and 13 activity preferences (singing, solitaire, etc.). Many of these variables were significantly related to one or several of the altruism scales, but none related as consistently to all twelve altruism scales as did marital status and number of older sisters of the male students. Female YMCA students were too few for reliable analysis.

nant, while an older brother is clearly dominant over a younger sister. But in the older sister-younger brother combination, dominance of the older and dominance of the male may be partially compensatory—and by thus having a more nearly equal sibling relation, the boy with an older sister may thereby have a greater chance to learn the value of co-operation. This interpretation is also consistent with the greater altruism of married men; it may in both relations be the opportunity for prolonged and intensive co-operation with a near equal—whether an older sister or a wife—that causes these experiences to relate to the display of altruism.

*Internal consistency.*—The most direct index of over-all altruism, across the various alters, measures, and situations, is simply the sum of the twelve separate scores a subject receives; considered as a twelve-item scale, this measure of altruism has an internal-consistency reliability of .79.<sup>23</sup> Other consistencies appear between particular subsets of scores: A composite score for the four scales involving a stranger correlates .63 with a corresponding composite for friends and .57 with one for antagonists. Thus not only is altruism toward strangers midway between that toward friends and antagonists (as previously shown by the means) but it is equally related to each. The correlation between the two more distant points of friend and antagonist is correspondingly less: .31.

Altruism in situations involving grades corresponds rather closely to altruism in situations involving salary; the correlation between the two six-item composites is .75. Correlation between the six-item composite measuring altruism by direct subjective estimation and the composite

measuring it by ranking is much smaller: .32. Despite the logical relation that connects the two modes of measurement, subjects are far from perfectly consistent in their responses. This discrepancy may result partly from lack of understanding or of motivation by the subjects, since the task is in some ways novel and complex. However, complete ranking of pairs of grades—the more difficult task—can be achieved instead by presenting a number of paired comparisons, each calling only for a preference for one pair of grades or another.

The low correlation of the two measures may also partially reflect multidimensionality in the rankings. Direct estimation on the twenty-one-point scales promotes unidimensional judgments, but ranking the nine pairs of outcomes in the matrix makes it easy for persons to consider more than the single dimension of altruism. One added principle is egalitarianism—indeed shown by some subjects, who prefer first A's for both, then B's for both, then C's for both; by preferring these over such alternatives as A for one and B for the other, they show that they value strict equality more than absolute level of reward.<sup>24</sup> Such egalitarianism warrants separate assessment as another principle for allocating rewards between persons—though one that in these data accounts for fewer choices than does altruism.

Everything considered, the present research shows the Altruism Scale to assess, with moderate validity and reliability, a continuum, ranging from co-operation through individualism to competition, that defines a central orientation of a person toward the rewards he and another experience in interaction.

UNIVERSITY OF CHICAGO

<sup>23</sup> The value is for Cronbach's alpha, which in effect gives the reliability that would be obtained by correlating total scores over one set of six items with total scores over the remaining set of six items, averaged over all possible splits of items into two groups of six. See Lee J. Cronbach, "Coefficient Alpha and the Internal Structure of Tests," *Psychometrika*, XVI (December, 1951), 297-334.

<sup>24</sup> The tendency to forego substantially greater reward for the sake of equality with the other person has also been noted in two-person bargaining experiments. See William Lawrence White, "Cross-cultural Bargaining and Game Behavior," *Proceedings of the IXth Congress of the Interamerican Society of Psychology*, December, 1964, pp. 555-61.