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**DISSERTATION**

**INDIVIDUALISM AND COLLECTIVISM WITHIN THE U. S.**

**Submitted by**

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**In partial fulfillment of the requirements**

**for the Degree of Doctor of Philosophy**

**Colorado State University**

**Fort Collins, Colorado**

**Summer 2002**

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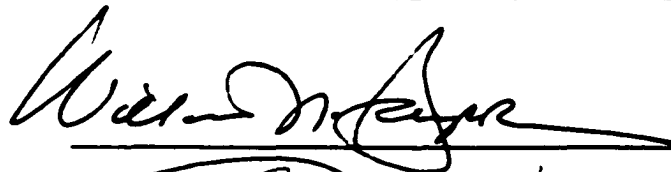
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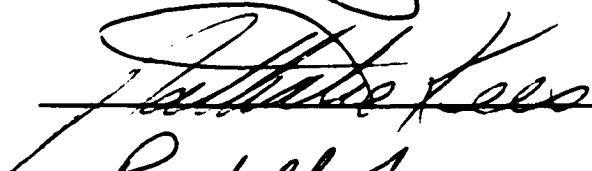
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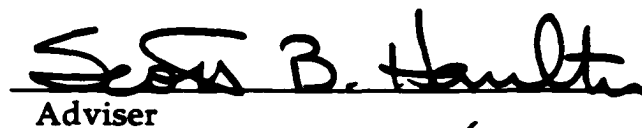
WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY CAREY ANN NAOMI TANAKA ENTITLED "INDIVIDUALISM AND COLLECTIVISM WITHIN THE U. S." BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.


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## ABSTRACT OF DISSERTATION

### INDIVIDUALISM AND COLLECTIVISM WITHIN THE U. S.

This investigation was undertaken to examine the 32 item Individualism-Collectivism Scale, INDCOL and determine its constructs and measurements; to evaluate a similar instrument, the Social Representation Scale, SRS; and to assess the degree to which these two instruments are related. Subjects were 846 (507 females and 339 males) university students who participated in this single group, survey study. Analyses on INDCOL assessed whether individualism-collectivism, IC, was a one-, two-, or four-factor instrument. The four-factor structure of horizontal individualism (HI), horizontal collectivism (HC), vertical individualism (VI), vertical collectivism (VC) of individualism-collectivism (IC) indicated the best fit of models. The factor structure of the SRS was also assessed. SRS appeared to measure individualism and collectivism, and provided convergent validity. A third entity, selfless giving, a construct similar to altruism and humanitarianism was a proposed third construct of the three-factor model. The three-factor structure of individualism, collectivism, and selfless giving presented a fit index of .90 which is considered a good fit. Findings indicated

that SRS and INDCOL have similar dimensions that are more strongly related than their dissimilar dimensions. SRS appeared to be measuring IC more reliably than INDCOL based on reliabilities of their respective scales. SRS seems to be a viable alternative to INDCOL.

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Process and content have been at the center of this project. It is said that one researches one's own issue, especially in psychology. Balance and resilience are put to the test and challenged from various directions. This project took longer than anticipated. There are lessons learned, still being learned, and yet to come.

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Last but not least, I acknowledge and respect all researchers grappling with individualism and collectivism, its concept and dimensions, measures, and

**applications. Their investigative efforts further our understanding and contribute new knowledge to the field.**

## DEDICATION

**This dissertation is dedicated to my family who have waited patiently from afar, especially my mother, Betty Shinayo Tanaka. For my father, Daniel Masaru Tanaka, though no longer in this earthly dimension, this is part of a dream fulfilled.**

**It is also dedicated to all my clinical clients past and present who have and continue to teach me the value of the process, the various depths of listening and styles of communicating, and the subtle shades, tones, and textures of the self.**

**This is dedicated to all of us who are to varying degrees and situations both individualistic and collectivistic. It is also in remembrance of my community, near and extended, who are ever experiencing the unit of one person with the group.**

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## INTRODUCTION

For the past two decades, there has been a growing interest in individualism and collectivism and it has become an important topic in cross-cultural and cross-national research especially in fields of psychology, sociology, business, and communications. Why? What has generated the interest, the relevance, and the importance of it?

Rapid technological systems and products have enabled us to generate, disseminate, and communicate information instantaneously, and physically transport ourselves with celerity from place to place. In short, we have experienced a kind of dissipating of boundaries and the world seems smaller, less out of reach, and much quicker in pace. These developments have also brought us in contact with more people from around the globe, with abundant opportunities to communicate and interact, conduct business, share information, and learn and socialize with each other.

Technology, however, has not readily enabled us to understand most of human social behavior. Humans have usually needed other humans to understand each other. Psychologist, Kurt Lewin posited that human behavior is a function of both the person and the environment.  $B = f(P, E)$ . The environment here is physical, social, and cultural. Individualism and collectivism are human constructs that relate to human environment, human perception, and human interaction. They are part of the person as well as the environment.

I consider conflict and war as human conditions that are relatively negative but natural and inevitable experiences. A person is influenced by

history, environment, and other people. It seems that the more we might know and learn about humans and the human condition, the more we might enable ourselves to exist in peace.

So knowledge of such constructs as individualism and collectivism assist in furthering our understanding of social behavior among humans in the context of not only various cultures and groups, but also at the individual differences level as well. With the ongoing thrust of such sociopolitical topics as diversity and multiculturalism in the U.S., the lessening of resources in high-consumption industrialized societies, and the volatility of leadership world-wide, the environment and humanity become closer in having to deal with each other for what is considered either necessary or desirable in order to survive. Hence, the probable current surge of interest in this topic.

The contention has been that individualism and collectivism are central elements in deciphering differences in social behavior, particularly between cultures. In social psychology, the general focal points have been on the degree of individualism and collectivism with respect to spheres of ingroups, associated values, attitudes, and beliefs, at a cultural and individual level. Harry C. Triandis and his associates have spearheaded this investigation internationally (Triandis, 1988, 1989, 1993, 1994; Triandis, Bontempo, Betancourt, Bond, Leung, Brenes, Hui, Marin, Setiadi, Sinha, Verma, Spagenberg, Touzard, & de Montmollin, 1986; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988; Triandis, Leung, Villareal, & Clack, 1985). They have created and utilized an instrument purported to measure individualism and collectivism, called INDCOL. Their focus, until recently, has been more on collectivism, particularly with subjects from the U. S. and other countries.

The purpose of this study is: 1) to critically examine these two main constructs through INDCOL, and 2) to evaluate a similar instrument (SRS),

and 3) to assess the degree to which these two instruments are related.. This is the original instrument purported to measure individualism and collectivism culturally and individually. It is important to assess what it is measuring , and its nature in the context of other instruments not previously used. In the investigative process, additional data may add more clarity to the definition of these constructs as well as to their measurement. It is hoped that evidence will provide more light on limitations, and variability of individualism and collectivism measurement and interpretation.

### **Definitions of Individualism and Collectivism**

The concepts of individualism and collectivism (Lukes, 1973) have been a part of the social sciences in many instances. Some of the contexts are: Kluckhohn and Strodtbeck, (1961) on collaterality and individualism; religion (Bakan, 1966); economic development and modernity (Inkeles & Smith, 1974); cultural patterns (Hsu, 1983); values (Hofstede, 1980, 1991; Schwartz, 1990; Schwartz & Bilsky, 1987, 1990); and independent versus interdependent self construals (Chang, 1982, 1988; Galleher, 1993; Golin, 1992; Markus & Kitayama, 1991).

The concepts of individualism and collectivism involve, in every definition, the person in relation to the surrounding physical, interpersonal, and psychological environment. Embodied in these concepts are values that color and shape our way of living.

### **Individualism**

Lukes (1973) discerns four basic components to individualism: dignity, autonomy, privacy, and self-development. Historically they are traced to western civilization and concepts of a person and Christianity. They lead to

what Dumont (1966) refers to as the cardinal ideas of Equality and Liberty (Chang, 1988). This seems particularly suitable to U. S. A. democratic ideals.

Bellah, Madsen, Sullivan, Swindler, and Tipton (1985) interviewed 200 U. S. Americans about their lives and report these themes: 1) self-reliance, independence, and separation from family, religion, and community; 2) hedonism, utilitarianism, emphasis on exchanges, contracts, helping the community only if the self gets something for it; 3) competition; being a distinguished person; 4) equity, fairness; 5) trust in others; 6) emphasis on competence; 7) involvement in community life and in associations; 8) equality, rejection of arbitrary authority; and 9) the self as the only source of reality. This is individualism in the U.S.A. It is important to remember that while the above themes follow the general concept of individualism in primarily putting self needs and interests before others, they may not be part of the individualism construct in other cultures or countries.

According to Waterman (1984), there are specific psychological qualities to individualism:

1. A sense of personal identity
2. Self-actualization in terms of striving to be one's true self
3. Internal locus of control which generally mirrors one's willingness to accept personal responsibility for life's happinesses and sorrows
4. Principled moral reasoning that is universal and guides one's right action.

One can detect a kind, optimistic, and positive point of view in Waterman's (1981, 1984) concept of a person. He seems to be aligned theoretically with humanistic psychology and synergy, and that the nature of a person is essentially good.

One critic of Waterman's concept of individualism is Sampson (1977, 1985, 1989) who perceives more the extreme tendency of the person who is motivated to satisfy most needs and wants for him/herself to be self-sufficient and independent, and in so doing, diminishes cooperative spirit and engenders destruction to the community. He feels that this tendency also contributes to human isolation, anomie, and alienation. The extreme of these conditions is what Lasch (1978) describes as narcissism. Hogan (1975, 1978) is concerned with the undermining and loss of social structures, often in the form of traditions and customs. He attributes this downfall to an overemphasis on self-interest and competition. It must be remembered that these definitions are primarily taken from social scientists who speak from observation and experience in the U. S.

In the context of investigating individualism and collectivism, Triandis and associates are less clear on defining individualism than on defining collectivism. As best that can be surmised, individualism embodies the value of autonomy (Triandis, 1994) and priority and preference is attending to self before others.

### **Collectivism**

Both Hui and Triandis (Hui, 1984; Hui, 1988; Hui & Triandis, 1986; Triandis, 1994) state that collectivism is a syndrome of feelings, emotions, beliefs, ideology, and actions related to interpersonal concern reflected in seven categories:

1. Consideration of implications (costs and benefits) of one's own decisions and/or actions for other people
2. Sharing of material resources
3. Sharing of nonmaterial resources (such as time and effort)
4. Susceptibility to social influence

5. Self-presentation and face-work
6. Sharing of outcomes
7. Feeling of involvement in others' lives

The emphasis is more on relationship with others in prescribed ingroups where concern for the other is more prevalent.

Triandis and associates (1988, 1990, 1993) have nicely compared these two constructs by attributes. It is important to remember that these categories are to mark general tendencies and not for strict determination.

Generally speaking, collectivists pay much attention to ingroups and behave different to outgroups in comparison. Individualists do not have as sharp a delineation between ingroups and outgroups. For collectivists, ingroup goals take precedence over personal goals, especially when there is conflict; for individualists, personal goals have more priority over group goals. Norms are more important for collectivists; attitudes are more important for individualists. In collectivist cultures there usually exists hierarchical and vertical relationships where lines of social order are delineated and adhered to. Ingroups are fewer than in individualist cultures, but the degree of concern for the other and longevity of relationship is stronger. In individualist cultures there are many ingroups and the individual has more choice in affiliation and attending to concerns of the group and most relationships. Triandis (1993) has referred to this as cultural complexity. Additionally, there is cultural heterogeneity which occurs due to exposure to various norms with these various groups, and a person must decide for him/herself which norms to follow. There is less demarcation in position and status and it is clearly more horizontal in comparison to collectivist cultures. Individualists emphasize achievement, pleasure, and

competition more; collectivists emphasize family, security, and conformity more.

Not surprisingly, these differences in norms, status, and attributes, are manifested quite readily in communication and language. The spoken words and demeanor of a person reflect how the person relates to others in a social system. In collectivist cultures, stratified communication, especially in the oral language often convey humble-honorific-systems in more collectivist contexts emphasizing social relationships that are hierarchical (Chang, 1982, 1988). More individualistic contexts also have, to a lesser degree, stratified communication, but the emphasis depicts more equi-distant social relationship.

Triandis, and associates (1990, 1993), further relate antecedents and consequences along with the above attributes of both individualism and collectivism. Accordingly, the main antecedent to individualism is affluence which leads to socialization of independence and self-reliance and often loneliness. In modern civilization, particularly in an urban environment, we can follow this occurrence which coincides with views posited by Bellah et al. (1985), Inkeles and Smith (1974), and Sampson (1977, 1985, 1989). The antecedents of collectivism are essentially found in agrarian lifestyle. Its consequences involve socialization for obedience, duty, conformity, interdependence, and social support.

### **Caveat**

These constructs are part of the cultural context in daily living. The cultural context involves how a person perceives and interacts with the world. Triandis (1972) refers to this as a person's subjective culture. Individualism and collectivism are part of subjective culture since values, attitudes, beliefs, norms of a person are involved. This important base is part

and parcel of a person as well as part of the fabric of a society or nation. Additionally, in some sense these constructs are etic (universal), and in another they are emic (culturally specific), and in yet another way they are idiocentric or a part of personality.

Kluckhohn and Murray (1948), stated that every person is in certain respects: 1) like all other people, 2) like some other people, and 3) like no other person. In examining and investigating this topic of individualism and collectivism, it is important to keep this actively in mind throughout the process of investigation. It seems easy to become trapped in dichotomies and either-or, black-white thinking, especially when there is research evidence to indicate polarity of opposites. Since we are dealing with concepts that often seem complex, ambiguous, and slippery, there might be a tendency to impose structure and become tunneled into a certain view of the data and process of inquiry. We should be aware of attributional tendencies.

### **Cultural versus Individual Level of Research**

Individualism and collectivism (IC) have been conceptualized, analyzed, and measured from two levels: the cultural and the individual. One milestone in IC research is Hofstede's (1980) seminal cross-cultural work involving comparative analyses of values and work goals across 40 countries. Individualism/collectivism was one of four factors or dimensions of difference at the cultural level. The other dimensions were power distance, uncertainty avoidance, and masculinity/femininity.

Remember that Hofstede's research at the cultural level occurred with a renowned multinational organization (IBM) at a time when cultural issues in business and the workplace that directly involved communication and interpersonal relationships were just moving to the forefront. Since then, we

have become more overtly aware and understand more how important cultural issues are in economic, social, political, and personal contexts.

Hofstede (1991) purports that culture involves affiliations with the social environment. The social environment hence, impacts our thinking, feeling, and behaving. He suggests that there are layers of culture: a national level according to one's country(ies); a regional and/or ethnic and/or religious and/or linguistic affiliation level; a gender level, a generation level; a social class level, associated with educational opportunities and with a person's occupation or profession; and for the employed, an organizational or corporate level according to the way employees have been socialized by their work organizations.

Just as much as there are different layers of culture, might there not be different layers of individualism and collectivism?

The assumption in most of the IC research is that individualism and collectivism are opposites. It has sometimes been referred to and considered multidimensional (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988), but consistently measured unidimensionally by INDCOL.

### **It Depends**

"It depends." This seems to be a more recent, but consistent qualifier in analyzing and interpreting the IC constructs based on individual data (Triandis, 1993; Triandis et al., 1986, 1988, 1990). Depending on the situation, individualism and collectivism can and do coexist and are emphasized more or less in each culture and person. We must consider IC constructs in the contexts of place, social affiliation, and personality.

According to Triandis et al., (1985), allocentrism and idiocentrism which are individualism and collectivism at the individual level, are both setting and group specific.

...Depending on the setting (home, workplace, religion, politics esthetics, scientific work, the courts, schools, shops) and the specific group (family, friends, colleagues, co-workers, neighbors), individual and collective goals may or may not be intercorrelated (p. 397).

This means that people within or between cultures seem to focus on individual or collective goals in different settings and with different groups. Hui's (1984) dissertation provided support for this when measures of collectivism varied between and among the six ingroups (spouse, parents, kin, neighbors, friends, and co-workers) within and between the Hong Kong and U.S. samples.

For example, Triandis et al. (1988) discovered in a cross-cultural study involving three countries that the definition of collectivism is important to contextualize. The data suggested that consideration and attention must be heeded to each ingroup and each domain of social behavior separately. Collectivism defined as subordination to the ingroup's norms, needs, views, and emotional closeness to ingroups is very specific to ingroup and to domain. It takes different forms within each ingroup within each culture.

In the same article, Triandis et al. remind about the difference between proscribed behavior and prescribed behavior and the social and cultural significance the action may or may not have to the person, given the situation in that culture. Being mindful of attributional tendencies in the process of investigation may be helpful. It seems that a certain kind of cultural ethnocentrism is ubiquitous and inevitable no matter what groups or individuals are involved in the situation and interaction at hand.

To investigate possible latent variables, complexity of construct structure, and situational variables of IC would provide more data on

understanding the properties of IC and how and when it interacts with other constructs or variables. The measurement of IC then, is important, because it provides evidence from which we build not only theory, but affects interpersonal interaction. The following is an analysis of the INDCOL Scale and its development as a measure of IC.

### **INDCOL Scale Development and Evolution**

Much research and publication has been done with the INDCOL Scale over the past ten years. However, Hui's (1984) dissertation where the scale was initially created, and three subsequent publications (Triandis, et al., 1985; Triandis, Bontempo, Betancourt, et al., 1986; Triandis, Bontempo, Villareal, et al., 1988) related to the nature of the scale are important and necessary to review here to trace history of the reported reliability and validity of the instrument.

Hui's dissertation focused on constructing INDCOL (Hui, 1984, 1988). It was a paper-and-pencil instrument made up initially of 96 items on a 6 point Likert with eight collectivism scales. The eight target groups were: spouse, parents, kin, family, neighbors, friends, co-workers/classmates, and unknown persons/acquaintances. Each scale item was written to measure collectivism with specific reference to a target group. So the instrument was primarily focused on measuring types of collectivism according to the regard of various ingroups. Two versions of INDCOL were developed at the same time; one in English, the other in Chinese. The rationale for this was reportedly to avoid the scale being monocultural. Bilingual people checked the equivalence for meaning. After pilot testing and the first round of testing the instrument, two scales, family and acquaintance, were discarded due to low Cronbach alpha coefficients (.18 and .08, respectively), and the number of items was

trimmed to 63. The sample size was 108 university students in Hong Kong and 132 university students in Illinois.

There was also a General Collectivism Index (GCI) which was computed by summing the subscale scores on the INDCOL. Individualism was measured more by implication. The assumption was that these two constructs were opposite. Collectivism here was regarded as a set of feelings, beliefs, behavioral intentions, and behaviors related to solidarity and concern for others. Individualism was regarded as a set of feelings, beliefs, behavioral intentions, and behaviors related to autonomy, independence and concern for one's self first.

Test-retest reliability for the collectivism scales after two weeks in the U. S. sample ( $n = 45$ ) ranged from .62 to .79 with a mean of .72. (Hui, 1984, 1988). Reliabilities for the subscales had a wider range across two batches of pooled subjects ( $n = 204$ ) from both the U.S. and Hong Kong. Split-half reliabilites ranged from .38 to .76 with a mean of .58. Cronbach's alpha ranged from .41 to .76 with a mean of .62. Guttman reliabilities ranged from .48 to .78 with a mean of .64.

Subsequent studies were undertaken to validate the instrument. INDCOL was found to be positively correlated with the social interest through the Social Interest Scale in both U. S. ( $N = 121$ ) and Hong Kong ( $N = 50$ ) samples. With the Hong Kong subjects, significant positive correlations were obtained between Social Interest and parent collectivism and co-worker/classmate collectivism. Positive significant correlations were obtained for all but the neighbor collectivism scale. The General Collectivism Index (GCI) was significantly correlated with Social Interest in both groups.

General Collectivism was found to be positively correlated with social

desirability using the Marlow-Crowne Social Desirability Scale (MCSDS) with Chinese ( $r = .25$ ), but not U. S. participants ( $r = -.01$ ).

In 1985, Triandis and associates published research on the psychological or individual dimension of IC referred to as allocentric and idiocentric tendencies. In simultaneously conducted studies using Hui's INDCOL, they sought to identify allocentric and idiocentric tendencies and further validate allocentrism. The first study comprised a 132 item questionnaire involving:

- 1) Similarity scale, 48 items, 5-point Likert, measuring shared beliefs to 6 ingroups, Cronbach alpha = .89;
- 2) Attention scale, 42 items, measuring concern with paying attention to others, Cronbach alpha = .94;
- 3) Taking a Trip scale, 4 items concerning a trip scenario, Cronbach alpha = .75;
- 4) Investing Money scale, 8 items utilizing a scenario where the subject can invest money, Cronbach's alpha = .73;
- 5) Lottery scale, 4 items around a scenario in which a person won money at a lottery, Cronbach alpha = .68;
- 6) Work Request, 8 item scale concerning a work request, Cronbach alpha = .86;
- 7) Loans scale, 5 items concerned with giving loans, Cronbach alpha = .82;
- 8) Honor about Nobel Prize scale, 6 items regarding the amount of honor the subject would feel if another received the Nobel Prize, Cronbach alpha = .81;
- 9) Contribution to Others Winning Nobel Prize scale, 7 items concerning the subject's perceived contributions to winning the Nobel Prize, Cronbach alpha = .80.

In addition to these scales of allocentric measurement, M. Bond's Chinese Value Survey measuring a person's emphasis on industry, hard work, humbleness, patriotism, loyalty to superiors, and harmony with others was used. Subjects were asked to rate on a 9-point scale how important these attributes were to them personally. There are 26 items with a Cronbach alpha of .9. Subjects were also given an allocation scenario tapping into equality vs. equity attributes.

A factor analysis of the allocentric scales showed three factors which accounted for 57% of the common variance: Factor 1 seemed to suggest subordination of personal to ingroup goals (30% of the common variance); Factor 2 seemed to suggest the ingroup as extension of self (15% of the common variance); Factor 3 seemed to suggest the ingroup as source of identity (13% of the common variance). These data indicate convergent validity of the allocentric scales.

To test for discriminant validity, attitude scales from Shaw and Wright (1967) were utilized in the same response format as the allocentrism scales. Of 70 correlations, only 15 were significant. Most of the correlations concerned political liberalism, with allocentrics being politically more liberal than idiocentric.

A second study examined the relationship of Hui's (1984) INDCOL to other measurements conceptually related to allocentric tendencies. The purpose was to test for convergent and discriminant validity. Again a myriad of instruments were used with 159 male undergraduates. In addition to the 63 item INDCOL, the survey included the following: 15 values from Rokeach (1973) with additions relevant to allocentrism and idiocentrism ranked on a 5-point scale; a 30 item scale by Lindgren (1976) measuring need for achievement vs. need for affiliation, reported split-half reliability of .80 and test-retest reliability of .88; eight items that measure modernity by Gough (1976); five items measuring anomie (Srole, 1956); six items measuring alienation (Middleton, 1963); six items that measure internal-external control (Hui & Triandis, 1983); Work and Family Orientation questionnaire by Helmreich & Spence, (1978), 23 items that measure mastery, work, personal unconcern, and competitiveness; ten positive and ten negative F-scale items

(Triandis, Hall, & Ewen, 1965); Budner's (1962) 16 item measure of intolerance to ambiguity.

With regard to Hui's INDCOL, items previously found to be reliable by Hui were verified with this sample. Item-scale correlations were calculated for each original scale and its items. Items with correlations less than .30 were discarded and total item-scale correlations were recomputed for the remaining items. The spouse subscale was discarded due to insufficient reliability. INDCOL now consisted of 5 scales with subsequent alpha of .74. The break out of these scales are as follows: Parents scale, 17 items, alpha = .78; Kin scale, 9 items, alpha = .59; Neighbor scale, 10 items, alpha = .72; Friend scale, 8 items, alpha = .58; and Co-worker scale, 13 items, alpha = .52. The sum of the individual means of these five scales was computed, and a median-split procedure was done for comparisons between 'less' and 'more' allocentric subjects.

Pearson correlations were calculated between the value ratings and ranking and the INDCOL. Results indicated that INDCOL was negatively correlated for the rankings of competition ( $r = -.24$ ,  $p < .02$ ) and self-reliance ( $r = -.20$ ,  $p < .03$ ), and positively correlated with the rankings of cooperation ( $r = .22$ ,  $p = .021$ ), honesty ( $r = .24$ ,  $p < .01$ ), and self-sacrifice ( $r = .25$ ,  $p < .01$ ). A similar pattern occurred with the ratings of the values. INDCOL was positively correlated to cooperation ( $r = .34$ ,  $p = .001$ ); equality ( $r = .22$ ,  $p < .02$ ); honesty ( $r = .27$ ;  $p < .01$ ); and self-sacrifice ( $r = .33$ ,  $p = .001$ ). Negatively correlated with INDCOL were pleasure ( $r = -.18$ ,  $p < .05$ ); self-reliance ( $r = -.18$ ,  $p < .05$ ); and social recognition ( $r = -.17$ ,  $p < .05$ ).

Lindgren's Measure of Need Achievement was very reliable with an alpha of .84, and was negatively correlated with kin (-.25), friend (-.20), and co-workers (-.27), all at the  $p < .01$  level. Low INDCOL scorers had a greater need

for achievement ( $t(86) = 2.38, p < .02$ ) than the allocentric subjects ( $M = 14.75$  vs  $11.80$ ).

The 8 item Modernity scale had positive, but low correlation (.21) and was correlated only with the co-worker scale ( $r = .17, p < .05$ ). It did not differentiate between high and low allocentrics in the overall INDCOL  $t$  test.

The Alienation scale with 6 items had a Cronbach alpha of .46 and was negatively correlated with INDCOL ( $r = -.27, p = .01$ ). The INDCOL subscales that correlated significantly with alienation were parents ( $r = -.18, p = .02$ ), neighbor ( $r = -.28, p < .001$ ), and co-worker ( $r = -.22, p < .02$ ).

The Anomie scale of 5 items was reliable at an alpha level of .70. It was also negatively correlated with INDCOL ( $r = -.35, p < .001$ ). Results of the  $t$  test indicate that idiocentric subjects had higher anomie scores ( $M = 12.90$ ) than allocentric subjects  $10.81, t(85) = 3.12, p = .002$ .

The remaining scales of internal-external control, the F scale, the Helmreich and Spence scales, and the Tolerance of Ambiguity scale reportedly were close to discriminating from the INDCOL, but were higher than chance in its correlation with INDCOL. No specific statistical details were provided.

According to all this research, evidence for convergent validity was shown for INDCOL. Collectivism converged with allocentrism via the value items. Individualism converged with hedonism according to the value items. Values of cooperation, equality, and honesty factored out in defining allocentrism. Pleasure, social recognition, a comfortable life, and completion are the values included in the hedonism value factor. According to the Lindgren scale, Alienation, and Anomie scales, idiocentrism was found to be related to self-descriptions emphasizing achievement.

Triandis and associates (1986) then worked on etic (pancultural) aspects of IC by using Hui's 63 item scale and a new set of 95 individualism items.

This was first tested on U.S. students. Factor analysis of the responses indicated three main factors which centered on the themes of self-sufficiency and competition (factor 1), emotional detachment (factor 3), and Hui's collectivism items (factor 2). The investigators state that this suggests that perhaps IC should not be conceptualized as opposite poles but as two independent factors (p. 260). A subsequent study was done using more items and including the three identified factors in a second-order factor analysis. Four IC themes emerged: subordination of own goals to the goals of others, distance/separation from ingroups, individualism vs. collaterality (according to Kluckhohn and Strodtbeck's 1961 measure of value orientation), and concern for ingroup (Hui's collectivism items).

Reportedly, the best items from these studies were incorporated into another new instrument administered to samples in nine countries. Twenty-one IC items (some of which were previously validated; Triandis et al., 1985) were selected by an international research team. Scenarios concerning resource allocation to various ingroups and adapted scenarios from Kluckhohn-Strodtbeck (1961) measuring collaterality were also included. Translation and back translation technique was used. Factor analysis of the responses from a total of 1484 subjects indicated four etic factors (Triandis et al., 1986, 1988): 1) Self Reliance with Hedonism (35% of common variance); 2) Separation from Ingroups (19% of variance); 3) Family Integrity (12% of variance) ; ) Interdependence and Sociability (11% of variance). Through both factor analysis and discriminant function analysis, the data suggest that Family Integrity and Interdependence with Sociability are important aspects of collectivism and discriminate across countries. Separation from Ingroups seems to be the main discriminating factor of individualism. Self Reliance

and Hedonism also seems to discriminate for individualism, but to a lesser extent.

Triandis and associates also investigated measuring idiocentrism in the U.S. (Triandis et al., 1988) and attempted to operationalize it. The data analyzed in this study were with the 63 Hui INDCOL items and the new 95 items as in the 1986 study, totaling 158 items. Since there were too many items for factor analysis, they proceeded to eliminate items by noting communalities of the items, and checking and selecting items that had high loading on each of the three factors. The three factors were once again, 1) subordination of personal to ingroup goals vs. hedonism/doing what is satisfying in terms of personal goals; 2) extension of self to ingroup vs. self as a distinct entity from ingroup (also included themes of interdependence vs. self-sufficiency); and 3) concern for ingroup vs. self-reliance and emotional distance from the ingroup.

Sixty items, 20 from each of the three factors were selected and factor analyzed. Three factors were identified from this second analysis, and 29 items loaded highly among them. These three factors were designated as:

Factor 1: Self-Reliance with Competition (35.2% of total variance)

Factor 2: Hui's INDCOL Scale—Concern for Ingroup (13.7% of total variance)

Factor 3: Distance from Ingroups (12% of total variance)

A subsequent second-order factor analysis was conducted with a relatively small sample of 34 with 14 variables. The results indicate that idiocentrism for this U.S. sample is a multifaceted concept. It includes more concern for one's own goals than the goals of the ingroup, giving less attention to the views of the ingroups, self-reliance with competition,

detachment from ingroups, deciding on one's own rather than asking for the views of others, and less general concern for the ingroup.

In summary, INDCOL started out as a 63 item 6-point Likert-like paper-and-pencil measure of collectivism by target ingroups. Over time, some of these 63 items were kept. Some came from subsequent items created in attempting to look at the structure of idiocentrism in the United States (Triandis et al., 1986, 1988). Ten value items (National Security, Freedom, Family Security, An Exciting Life, Honoring Parents and Elders, A Varied Life, Obedient, Choosing Own Goals, Self-Disciplined, Independent) from Schwartz (1990), and Schwartz & Bilsky (1987, 1990) were added, bringing the INDCOL to 38 items in 1992.

Through 1994, Triandis and associates used a 50 item 9-point Likert-like measure that included the previously mentioned and validated 38 items and 7 other measures (Self Reliance, Interdependence, Competition, Hedonism, Family Integrity, Closeness to Family, and Sociability) noted in previous factor analytical research with INDCOL. These variables come from first and second order factor analysis of the original INDCOL and subsequent items (Triandis et al., 1986, 1988, 1990).

### Vertical and Horizontal Dimensions

Since then, a feature to this INDCOL (Triandis, 1993, 1994) has been the inclusion of the vertical and horizontal dimensions (H. C. Triandis, personal communication April 29, 1994) of 32 of the 50 INDCOL items with IC breaking it out into four parts: horizontal collectivism, vertical collectivism, horizontal individualism, and vertical individualism. These concepts are discussed in more detail in another section of this document.

As part of this same instrument, 32 scenarios have been constructed with four options for forced ranking per scenario. Each option is designated

epitomizing the four concepts accordingly. Basically, it generates a kind of personality measure or profile of IC of a person through the above mentioned 50 items about self and ingroups and a ratio or percentage of vertical/horizontal IC.

In addition, a second individualism/collectivism instrument (H. C. Triandis, personal communication, April 29,1994) to use individually has been created. It consists of 12 identified individualistic and 12 identified collectivistic items. Each item is presented with a statement of attribute (value, behavior, attitude) usually aligned with individualism/collectivism traits, then followed with an inquiry of personal preference or rating of self on a scale of 0 to 10 (0 = no trace, 5 = quite a bit, 10 = the maximum possible). Points are totaled according to the two sets of items and a person is purported to see what his/her tendencies are with respect to individualism and collectivism, in what situation, and in dealing with what affiliate group.

#### **Other INDCOL Uses and Related Individual Measures of Individualism and Collectivism**

INDCOL (1988 version) was also used by Tata & Leong (1994) in a recent study to predict patterns of help-seeking attitudes among a sample of Chinese-American students. Other culturally based variables aside from IC were social support, acculturation, and attitudes toward seeking professional psychological help. There is evidence that acculturation and IC may covary.

David Matsumoto and associates ( Preston, Brown, Weissman, and Matsumoto, 1993; Preston, Matsumoto, Weissman, and Brown, 1993; Weissman, Brown, Preston, Tafe, and Matsumoto, 1992) have developed another measure of IC at the individual level called the Individualism Collectivism Assessment Inventory (ICAI). The instrument is purported to measure the degree to which an individual's personality reflects the

individualistic or collectivistic value. The measure shows the individual's current degree of collectivist values and behaviors in relation to four social groups (family, close friends, colleagues, and strangers). Subjects rate 25 values on a 7-point Likert like scale in relation to the four social groups and then assess the frequency he/she actually behaves in accordance with each of the 25 values. The values are similar to those of Schwartz and Bilsky (1987) and those of collectivism items in INDCOL. Preliminary findings indicate that factors of difference in IC that Triandis found did not fall out with their analysis. They attribute this to the result of items being presented as general attitudes rather than in specific contexts and situations. Additionally, the subjects used in the studies here involve U.S. ethnic minority groups and may involve acculturation as a variable.

Over time, ICAI has focused on examining IC tendencies in different social relationships. It has evolved into an individual level measure of IC in the context of interpersonal interactions in various social relationships (Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997).

Another instrument, the Cross-Cultural Adaptability Inventory (CCAI) was developed by Colleen Kelley and Judith Meyers (1992). It is a self-scoring training instrument designed to give feedback to an individual about his/her potential for cross-cultural effectiveness. It contains 50 items on a 6-point Likert like scale relating to cross-cultural adaptability through four dimensions: emotional resilience, flexibility/openness, perceptual acuity, and personal autonomy. The items on the personal autonomy and perceptual acuity dimensions are similar to INDCOL items. The CCAI has an overall alpha level of .90. The ten perceptual acuity items have an alpha of .78, and .68 for the personal autonomy items.

### **Further Developments**

While this study was proposed in 1994 and data collected in 1996, research at the IC individual and cultural levels have accumulated and contributed to various elements and directions in IC. Triandis (1995, 1996) elaborated more on the constructs of IC, noted macro (cultural) and micro (individual) conceptualizations, and mentioned in more detail the vertical and horizontal dimensions of IC. He also linked them with the concept of self-construal following in similar conceptual framework of Markus and Kitayama (1991) and Singelis (1994) with independent and interdependent selves. Further study of the self and the four factor IC (VI, VC, HI, HC) was done by Singelis, Triandis, Bhawuk, and Gelfand (1995). The results of this investigation provided support for the discriminating tendency of vertical and horizontal dimensions on IC with relatively higher alphas (.67 and .74 range) than those found in earlier research.

As an extension of the four-factor IC concept, Triandis (1995) posits that each person likely has all four components of individualism and collectivism: VI, VC, HI, HC at different times, with varying degrees, depending on the situation, reference group, norm, context, or culture/sub-culture (Cha, 1994; Kagitcibasi, 1996, 1997; Kim, 1994; Yamaguchi, 1994). These situational, contextual, and semantic variables have been acknowledged as factors in participant research responses and have been a particular point with researchers outside of the U. S. and more consistently given as a qualifier and rationale for differences in measurement of IC.

Cross-national research indicated convergent measurement of vertical and horizontal IC (Triandis & Gelfand, 1998), and variations in collectivism and individualism by ingroup and culture (Rhee, Uleman, & Lee, 1996; Yamaguchi, 1994). Tightness-looseness construct was examined in a comparative study with Japanese and U. S. high school students as a predictor

of social behavior (Chan, Gelfand, Triandis, & Tzeng, 1996). Preliminary trials with scenarios were created and used to measure the four factor IC with college students from Hong Kong and the U. S. (Triandis, Chen, & Chan, 1998).

The relationship of IC versus authoritarianism has also been explored (Gelfand, Triandis, & Chan, 1996). Data suggested that individualism may be opposite to authoritarianism.

Vandello and Cohen (1999) created an eight-item index rating (by rank order) states in the U. S. and their individualistic/collectivistic tendencies. Sociological research methods (survey from the National Election Survey) were employed here more than psychological research methods. An ecological framework of taking historical facts, geographical conditions, ethnicity and race of populated area was considered and utilized. All 50 states were ranked mainly by degree of collectivism with particular attention to differences by region.

Other resources, primarily in the form of primers or textbooks, have contributed and added refinement and integration to this subfield. Hofstede has updated his seminal work, Culture's Consequences (2001); Segall, Dasen, Berry, and Poortinga (1999) have published a second edition of their cross-cultural psychology textbook; The Handbook of Cross-Cultural Psychology, Volumes 1-3, second edition (1997) have been updated and consolidated; and David Matsumoto (2001) has compiled a book noting the history and evolution of the field of cross-cultural psychology.

## **PURPOSE**

The purpose of this study is to critically examine the INDCOL Scale psychometrically and determine more fully what it is measuring. It is also to more clearly determine what are the facets of the scale, and, how closely they are related to other instruments, particularly the Self Representation Scale (SRS).

### **Rationale**

Though the INDCOL Scale continues to be used to measure IC both at the cultural and individual levels, it does not seem consistently clear what it is measuring aside from self-ingroup regard. Labeling of factors has been ambiguous, reporting of statistical conclusion validity has been inconsistent and varying in degree, and reliability coefficients have been relatively low. At present, it continues to be used for lack of a better instrument.

Admittedly, culture and IC are intertwined, but the merit of an instrument is in its robust reliabilities and validities. It is not clear, over time and multiple amendments to the instrument, what these are. An undertaking of this analysis is necessary from an investigator outside of the cadre.

## **RESEARCH QUESTIONS**

The following questions were examined:

- Question 1: Is IC a one-factor structure?
- Question 2: Is IC a two-factor structure?
- Question 3: Is IC a four-factor structure?
- Question 4: Is the SRS a one-factor structure?
- Question 5: Is the SRS a two-factor structure?
- Question 6: Is the SRS a three-factor structure?

**Question 7: What is the relationship of IC with SRS?**

**Are similar dimensions of IC and SRS more strongly related to one another than dissimilar dimensions of IC and SRS?**

## **METHOD**

### **Participants**

The participants were from the Colorado State University psychology undergraduate research pool from general psychology classes. The sample included a total of 846 students (507 female and 339 male). Most students were in their first (72%) or second (17%) year of college. The average age of the participants was 19.14 years. The youngest respondent was 17 while the oldest was 38 years old. As for religious affiliation, 48% endorsed Protestant or Catholic, 2% Jewish, 24% Other, 20% Unaffiliated, 4% Atheistic, and the remaining 2% indicated Buddhist, Muslim, or Pagan/New Age. The participants were predominantly Caucasian (87%). There were about 2% each Asian Americans, and Mexican Americans, 2% Other Hispanic, 1% each black/African American and Native Americans, .5% each Pacific Islander Americans and International Students, and about 4% indicated Mixed Ethnicity.

### **Procedures**

Subjects signed up for the study according to established procedures within the psychology department and in partial fulfillment of their experimental research requirement. Active recruitment of subjects occurred prior to this in the various sections of the general psychology course through periodic announcements in classes and written flyers encouraging participation and general information about the research experiment.

The survey was administered in a large university lecture hall, regular classrooms, and small conference rooms by the author and one or two psychology graduate students to mixed gender groups in summer and fall of

1996. A survey packet was distributed to each subject which consisted of two copies of a consent form, instructions for completing the questionnaires, the survey form, and answer sheet (See Appendix A.). The purpose and intent of the consent form was discussed, and the subjects were asked to sign both sheets and to retain one for their records. Oral instructions were then given item by item for the demographic section of the questionnaire. Instructions were given on how to complete the rest of the survey. Subjects were then asked to begin filling out the questionnaire. They were instructed to answer all items on the survey in order, not to skip any items, and to pay close attention to the instructions for each section. Most subjects completed the questionnaire within 60 to 75 minutes.

After subjects finished the survey, they were instructed to read the written debriefing statement provided at the end of the survey packet. Upon handing in their completed questionnaires, subjects signed an attendance sheet to ensure that they received credit for participation. Confidentiality was assured by having subjects give their names only on the attendance and consent forms. There was no subject name identification on completed questionnaires.

### **Measures**

#### **Individualism-Collectivism (INDCOL) Scale**

This 1994 version of INDCOL is comprised of 50 items. Subjects were asked to respond on a 7-point Likert scale (7=strongly agree, 1=strongly disagree). This is an adaptation of the 1994 INDCOL with the 9-point Likert scale (9=strongly agree, 1=strongly disagree).

Thirty-eight items are essentially from the 1992 (according to the April 1992 INDCOL Manual) and 1990 versions (Triandis, McCusker, & Hui, 1990) of INDCOL. Ten of these items are Schwartz's (1992) values. This is a

refinement of four previous versions of the scale (Hui, 1984; Triandis, et al., 1985; Triandis, et al., 1986; Triandis, et al., 1988). The remaining 18 items are aligned with Self Reliance, Interdependence, Competition, Hedonism, Family Integrity, Closeness to Family, and Sociability. This is a refinement of four previous versions of the scale (Hui, 1984; Triandis, et al., 1985; Triandis, et al., 1986; Triandis, et al., 1988).

Thirty-two of these 50 items are broken into individualism and collectivism items and then again, more specifically into vertical/horizontal individualism and collectivism. According to Triandis (February 1994 INDCOL Manual), vertical/horizontal refers to specific concepts of self. Vertical is when the self is conceived of as different from other selves, and inequality is accepted. Horizontal is when the self is conceived of as every other self, and equality is an important value. Scoring is a matter of adding and figuring out a ratio or percentage of responses coinciding with designated horizontal/vertical and individualism/collectivism items. So a person can generally decipher proportionately how much he/she tends to be or respond in a vertical individualism/collectivism way or horizontal individualism/collectivism way. There are 8 items per construct and reportedly all four constructs—horizontal collectivism (HC), vertical collectivism (VC), horizontal individualism (HI), vertical individualism (VI)) have alpha levels close to .70. The other 7 constructs are considered empirically derived etic aspects of individualism and collectivism (Triandis et al., 1986).

The 50-item version of INDCOL was used since it not only includes the core 32 items that measure the horizontal/vertical dimension, but has a longer historical perspective of the instrument in providing other correlated

factors. None of the 32 scenarios were used since they were reportedly tentative and still undergoing changes (Triandis, 1994).

### Social Representation Scale (SRS)

The Social Representation Scale is a 27-item scale (original scale has 81 items) measuring independent, selfless, and collective social representations of self. It is a revision of the 12-item Self Construal Measure which is a cluster analytically derived measure of the three social representations (Galleher, 1993, Golin, 1992). It poses questions about values and attitudes about oneself toward others. Subjects respond on a 7-point Likert scale (7 = strongly agree, 1 = strongly disagree). An Independent self construal is described as an emphasis on self-expression, attaining recognition through uniqueness, and perceived responsibility only for oneself while others are responsible for their own lives. This concept is thought to be generally aligned with the concept on individualism. Selfless Giving is an emphasis on service, attaining recognition through self-sacrifice, and responsibility for others, with nothing expected in return. It may be thought of as closely aligned with the concept of altruism. Interdependence or collectivism is characterized by emphasis on service with self-expression, responsibility for oneself and others, and shared sense of community responsibility. The alpha reliabilities are reported as .85 for Independent, .74 for Selfless Giving, and .65 for Interdependent. One month test-retest reliability is reported at .82 for Independent, .79 for Selfless Giving, and .66 for Interdependent. The scales were developed and used with samples (total of 707) of undergraduates in psychology classes at Colorado State University from 1990 to 1992 (Golin, 1992, Galleher, 1993).

### Personal Values Scales (PVS)

The Personal Values Scales developed by Scott (1965, 1991) is a self-administered instrument comprised of 12 scales: Intellectualism, Kindness, Social Skills, Loyalty, Academic Achievement, Physical Development, Status, Honesty, Religiousness, Self-Control, Creativity, and Independence. Each scale has 20 items per scale (long form) and is rated on a three-point scale: "always dislike," "depends on the situation," and "always admire." The long version is balanced with positively and negatively worded items. In scoring, positively worded items "always dislike" and "depends on situation" will be scored 0 and "always admire" 1. For negatively worded items, "always admire" and "depends on situation" will be scored 0 and "always dislike" 1. Scale scores are obtained by summing across items.

The scales were developed and used with samples of college students from fraternities and sororities, the undergraduate population, and psychology classes. For the reliability and validity studies, sample sizes tended to be around 200.

The alphas for the short form ranged from .55 for Independence to .78 for Religiousness. This prompted Scott to create the long form to permit more accurate measurement of individual subjects rather than only distinguishing between large groups. Alphas for the long forms ranged from .80 (Honesty) to .89 (Physical Development).

Correlations between the short and long forms of each value are relatively high, ranging from .66 for Intellectualism to .81 for Physical Development and Religiousness. The construct validity of the scales was further investigated by examining the correlations among traits which people "personally admire," consider "the right thing to do," and prescribe as traits that "other people should admire." Correlations between admiration and rightness ranged from .52 for Academic Achievement to .78 for Religiousness

(median .69). Known groups validation hypotheses were tested and supported for seven scales: Religiousness, Independence, Physical Development, Creativity, Academic Achievement, Loyalty, and Social Skills.

The long form, though lengthy, is the more reliable instrument and is balanced to control for an acquiescence response bias. This long version was used in this research.

#### Levenson's Locus of Control Scale

This is a three dimensional scale measuring a person's locus of control with a total of 24 items on a 6-point Likert scale. The three scales (I, P, C) are: Internal Scale, Powerful Others Scale, and Chance Scale. There are eight items on each of the three scales. Levenson (1972) developed this scale to try and account for a more multidimensional measure of locus of control than Rotter's I-E Scale.

Internal consistency reliabilities for the student group Kuder-Richardson reliabilities are reported as: .64 for the I scale, .77 for the P Scale, and .78 for the C scale. For the adult group, Spearman-Brown split-half reliabilities were: .62 (I Scale), .66 (P Scale), and .64 (C Scale). Test-retest reliabilities for a one-week period were: .64 (I Scale), .74 (P Scale), and .78 (C scale).

According to item analyses done, distinguishing between high and low scorers for each of the three scales occurs. Correlations between the Marlowe-Crowne Social Desirability Scale (1964) and each of the items are near 0.00 with the highest being .19.

Each of the three scales is scored separately by adding a designated value for each response on the 6-point Likert scale. Three separate interpretations are made according to high or low aggregated scale sum. The

higher the score on each scale, the more a person perceives his/her life to be controlled by the source indicated.

### Marlowe-Crowne Social Desirability Scale (MCSDS)

This is a 33 item true/false questionnaire designed to measure a subject's tendency to respond to items in a socially admirably way. There are two kinds of items. Some are items high in probability of occurrence but low in social desirability, such as:

I have never intensely disliked anyone. (T)

Other items are low in probability of occurrence but high in social desirability:

Before voting I thoroughly investigate the qualifications of all the candidates. (T)

High scores indicate a general inclination to seek approval by conforming to social expectations. Research with the Marlowe-Crowne indicated that high scorers were more likely to give responses that conformed to those of confederates, and were more easily influenced by peers and authority figures, than low scorers. It has internal consistency (Kuder Richardson 20) of .88, and a one month test-retest reliability of .89 (Crowne & Marlow, 1960).

This research study involved examination of the constructs of individualism and collectivism. In order to uncover, discover, and investigate the measurement and structure of IC, structural equation modeling (SEM) with EQS was used. Analyses on INDCOL assessed whether IC was a one-, two-, or four- factor instrument. One factor, where there is no difference between IC; two factors where individualism and collectivism are the two distinct components, or that vertical and horizontal are the factors; or four factors where vertical-individualism (VI), vertical-collectivism (VC), horizontal-individualism (HI), and horizontal-collectivism (HC) are the main facets of IC. Analyses on the SRS assessed its factor structure.

Comparisons were made of INDCOL with the Self Representation Scale (SRS). Similar dimensions of the instruments were noted to be more related than dissimilar aspects. Correlational studies with previously noted instruments were also done to see what concepts and constructs were related with the vertical-horizontal items (32 items) of INDCOL and the SRS.

## **RESULTS**

Descriptive statistics for both females and males are presented in Table 1 and Table 2 respectively. They summarize how the participants responded by minimum, maximum, mean score, and standard deviation for each of the four scales of the 32-item INDCOL (HI, HC, VI, VC), three scales of the Social Representation Scale (individualism, collectivism, selfless giving), three scales of Levenson's Locus of Control (internal, external/powerful others, chance), and for social desirability in Marlowe-Crown Social Desirability Scale. Between gender, the greatest differences in response were with social desirability (female M = 20.243, SD = 3.419; male M = 14.047, SD = 6.157), and the SRS individualism (female M = 29.114, SD = 9.350; male M = 33.533, SD=10.718) and SRS collectivism (female M = 48.039, SD = 7.333; male M = 44.548, SD = 8.317) scales.

Reliabilities for all these scales was measured with Cronbach's alpha and are detailed in Table 3. It is noteworthy that overall, the reliability of the SRS was high. All alphas were .84 and above, suggesting strong internal reliability. The alpha reliabilities for the four scales on INDCOL were: VI .83, HC .75, HI .62, VC .58. Locus of Control reliabilities appeared moderate with powerful others .75, chance .72, and internal .62.

Tables 4 and 5 show intercorrelations among 11 scale measures of the four instruments for females and males. Table 6 shows intercorrelations among the four instruments for the total sample. Significant correlations are generally in the expected directions and provide evidence of convergence.

In hindsight, it was decided that the data from the Personal Values Scale (PVS) would not be used in analyses due to overall weak correlations with INDCOL across scales. About 10% of the items were found to have factor loadings less than .4. Initially, five (kindness, loyalty, honesty, self-control, independence) of the twelve scales on face validity seemed to be appropriate to compare with the other instruments, but due to the relative weakness of the instrument, it was decided to eliminate it from the validation process.

In analyzing the dimensions of IC, EQS was used employing maximum likelihood estimation. Confirmatory factor analyses (CFAs) were conducted on four different models of the 32 item INDCOL. The first model tested the first hypothesis, determining whether IC is a single factor or unidimensional construct with no significant difference between individualism and collectivism. A second model specified two dimensions or factors, individualism and collectivism, using the I and C designated items from the 32 items of the instrument. A third model specified two other factors, vertical and horizontal, using the V and H designated items of the 32 items. The fourth model specified four factors, a combination of individualism and collectivism with vertical and horizontal: VI, VC, HI, HC.

The fit of the models was assessed with multiple indexes. Two measures of fit were used to supplement chi-square: the normed fit index (NFI) and the comparative fit index (CFI). Table 7 summarizes the CFA results for the total sample and by females and males for the single factor (IC), two two-factor (HV; IC), and four-factor (HI, HC, VI, VC) models. The four factor model was a significant improvement from the two factor models, and in turn, the two factor models were better than the single factor model. Comparative fit indexes ranged from .33 to .75. Table 8 shows the 32 items break out (8 items each) of INDCOL for each of the four factors HI, HC, VI, VC.

Likewise, confirmatory factor analyses (CFAs) were conducted on three models of the SRS determining whether the instrument was measuring one, two, or three factors. The three factor (individualism, collectivism, selfless giving) model appeared the most plausible in comparison to the two-factor and single factor models. CFI indexes for the three-factor model were .89 for the total sample, .89 for females, and .88 for males. This is very near .90, the usual standard of a good fit. Comparative fit indexes ranged from .71 to .73 for the two-factor model, and from .48 to .50 for the single factor model. Table 9 summarizes the CFA results for the total sample, females, and males for the single factor, two-factor, and three-factor models. Table 10 details the break out (9 items each) of the 27 items of SRS according to the three factors. The relationship of INDCOL (four-factor) and SRS (three-factor) was further examined with a structural model. Fit of models was assessed with chi-square and degrees of freedom. Measures of fit were used to supplement chi-square. The CFI ranged from .77 for females, .78 for males, and .80 for the total sample. Table 11 outlines the fit indexes of the structural model.

Table 12 presents the standardized factor loadings and residual variances of the 32 item INDCOL, the 27 item SRS, and the four-factors (HI, HC, VI, VC) by total sample and by gender. The instruments are detailed by item and the four factors of INDCOL and three factors of SRS, respectively. Factor loadings for INDCOL for the total sample ranged from .17 for V5, F1 to .71 for V30, F3; factor loadings for SRS for the total sample ranged from .46 for V40, F5 to .79 for V58, F7. Generally, the factor loadings were .60 or greater for SRS, and appeared more consistent than INDCOL for the total sample as well as by gender. Table 13 presents the observed and latent variables of the two instruments and may be used in interpreting the parameters.

The path diagram or structural model of INDCOL and SRS is depicted in Figure 1 for the total sample, Figure 2 for females, and Figure 3 for males. The four factors of INDCOL and three factors of SRS are shown as unobserved or latent factors. The one-way arrows from the four factors of INDCOL pointing to each of the three SRS factors shows their linkage and represents regression coefficients of one factor on to another. The curved two-way arrows between each pair of the four INDCOL factors signifies correlational relationships. The smaller circles on the side of the each of the three SRS factors indicate residual error or disturbance in prediction of the unobserved factor.

The significant positive linkages for the total sample were VI and SRS-individualism at .61, HC and SRS-collectivism at .52, and VC and SRS-selfless giving at .45. The significant negative linkages were HI with SRS-selfless giving -.12, VI with SRS-selfless giving -.11, and HC with SRS-individualism -.13. For females in the sample, the significant positive linkages were HC and SRS-collectivism at .57, VI and SRS-individualism at .49, and VC and SRS-selfless giving at .41. HC and SRS-individualism indicated a significant negative tie -.14. Males indicated that VI and SRS-individualism at .70, HC and SRS-collectivism, and VC and SRS-selfless giving at .42 were the significant positive links. The significant negative links were HI and SRS-selfless giving -.27, HC and SRS-individualism -.20, VI and SRS-collectivism -.26, and VI and SRS-selfless giving -.21. Across the total sample and regardless of gender, the link between HI and SRS-individualism, HI and SRS-collectivism, and VC and SRS-individualism were not significant.

Among the intercorrelations of the four factors of INDCOL horizontal and collectivism seemed to be consistently correlated across the sample. HI and HC ranged in correlations from .35 for females, .41 for the total sample,

and .54 for males. HC and VC ranged in correlations from .54 for males, .75 for females, and .81 for the total sample. HI and VC were negatively correlated throughout the sample ranging from -.19 for females, -.23 for the total sample, and -.29 for males.

### Research Questions Examined

The major focus of this study was on the examination of the factor structure of the 32 item INDCOL that purports to measure individualism and collectivism among a college student sample. Four alternative models were tested.

#### Research Questions 1, 2, 3

Is IC a one-factor structure, a two-factor structure, or a four-factor structure?

As seen in Table 7, the single factor model purporting one construct, IC, did not fit very well across the sample. The two-factor models of horizontal-vertical and individualism-collectivism indicated improved degree of fit compared to the one-factor model, providing further evidence of the limitations of the unidimensional model. The four-factor model subsequently indicated improved degree of fit in comparison to both of the two-factor models. According to the fit indexes, the four factors, HI, HC, VI, VC, indicated IC as multifaceted. The CFI ranged from .72 for males, .73 for females, and .75 for the total sample. Although higher than indexes for two-factor and one-factor, this is generally not considered a good fit. An acceptable fit to the data is considered .90 or better (P. Bentler, 1992 as cited by Byrne, 1994, p. 55).

#### Research Question 4, 5, 6

**Is SRS a one-factor structure, two-factor structure, or three-factor structure?**

Table 9 summarizes the fit indexes for SRS and the three alternative models. The CFI for the three-factor model, approached good fit with indexes ranging from .88 to .89. In similar pattern to one-factor and two-factor INDCOL indexes, the two-factor model indicated improvement over the one-factor model.

### **Research Question 7**

**What is the relationship of IC with SRS? Are similar dimensions of IC and SRS more strongly related to one another than dissimilar dimensions of IC and SRS?**

Table 11 indicates the fit indexes of the structural model for the four-factor INDCOL and the three-factor SRS. CFIs range from .76 for males, .80 for females, and .83 for the total sample. Figures 1, 2, and 3 indicate the path coefficients or structural model of INDCOL to SRS by total sample, females, and males. The significant positive links are HC and SRS-collectivism, VI and SRS-individualism, and VC and SRS-selfless giving consistently across the sample. The significant negative links are HC with SRS-individualism across the sample. For males and the total sample, there was a significant negative link with VI and SRS-collectivism, and VI and SRS-selfless giving. For females, these two paths were negative but not significant. Generally, the similar dimensions of IC and SRS appeared more strongly related to one another than dissimilar dimensions.

## DISCUSSION

This investigation was undertaken to examine the 32 items of INDCOL and determine its constructs and measurements testing four alternative models. The four-factor structure of HI, HC, VI, VC of IC indicated the best fit of the four models. Another instrument, SRS, also purporting to measure IC was analyzed and three alternative models were tested. The three-factor structure of individualism, collectivism, and selfless giving presented the best fit of the three models approaching a fit index of .90 which is considered a good fit. Findings indicated that SRS and INDCOL have similar dimensions that are more strongly related than their dissimilar dimensions. SRS appears to be measuring IC more reliably than INDCOL based on reliabilities of their respective scales.

A major concern with INDCOL and its modification and evolution over time has been its low reliability as an instrument. This essentially questions the extent to which consistency is found in repeated measurements of IC with INDCOL and with internal consistency among individual measurement items. Validity, particularly construct validity, of INDCOL for IC is also questionable.

SRS in comparison to INDCOL appeared stronger in reliability in this single group investigation (Table 3; Figure 1). It appeared to measure the two entities, individualism and collectivism, and provided convergent validity. A third entity, selfless giving, was a proposed third entity of the three-factor model. This selfless giving factor has been described previously (Golin, 1992, Galleher, 1993) as a construct close to altruism and humanitarianism.

## Limitations of the Study

### Restricted Sample

While large, the sample for this study was taken from one university. The participants were largely young (mean age of 19 years of age), middle class, Caucasian American with Judeo-Christian affiliation and background. They were generally homogeneous. We cannot assume that study results would be representative of undergraduates from other universities, especially in a larger city and region with a more varied student body. The sample results also should not be considered representative of non-college populations from diverse backgrounds. Future consideration should be given to replicating research on IC with non-college populations. Although challenges readily exist with such things as access to a varied work force population, sampling selection, and randomization, research with IC should be done with other populations in the community outside of academia. Until this is done, it seems that there would be limits to generalizability of data, and hence, understanding of IC.

In this study, there were about 20% more females than males. It probably would have been better to control for a relatively even number of male and female participants in hind sight. Given the relatively large number of participants in relation to the number of variables involved, this may have affected certain response sets that females tend to endorse. Although there was no hypotheses testing per se involving gender responses, it is a potential factor that could impact data.

### Instrument Selection and Data Collection

The PVS (Scott, 1965, 1991) was initially included in the survey packet as a measure of personal values in the context of exploring convergent validity with INDCOL and SRS. This long-version listed 240 items and

necessarily boosted the need for a higher subject pool. Due to the relative large number of items in the instrument, it may have impacted, to some extent, how participants responded. The element of fatigue, possible errors in response, and random response should be taken into consideration. Another shorter, reliable, instrument measuring values should have been used instead. An example of an instrument measuring values at the individual level might be Schwartz's (1992) instrument (Oishi, Schimmack, Diener, & Suh, 1998).

While the focus of this study was mainly on measurement properties of instruments purporting to measure individualism and collectivism, let us not forget the base context of these constructs. Individualism and collectivism are human, personal constructs that relate to human environment, human perception, and human interaction. As stated earlier, they can be applied to the Lewinian concept, behavior is a function of the person and the environment.  $B = f(P, E)$ . Individualism and collectivism are part of the person and part of the environment. Further contributing to our understanding of social behavior in the context of culture, the group, and at the individual levels is the aim.

### Conceptualization of IC and Language Issues

The instrument, INDCOL, was initially created in two versions, Chinese and English (Hui, 1984, 1988). Even over time, most people's perception of the construct is somewhat dichotomous. There was and continues to be much cross-cultural research involving comparison of U. S. and western European participants with Asian participants regarding IC. The emphasis on differences is probably most apparent in cross-national, east-west

studies. The cultural differences based on seemingly opposite-like norms, values, attitudes, beliefs, world views readily influence the interpretation of the obtained data in this pattern or direction. Most of the instruments in cross-cultural research are predominantly measurements created and designed in English in western countries, by western educated academicians.

More recent developments and conceptualizations of IC have included specific cultural contexts of self-concept and relationships of others in studies of IC. IC has been more scrutinized and interpreted in varying and particular cultural contexts (Chan, 1994; Kim et al., 1994; Yamaguchi, 1994). The concepts of IC have become more culturally specific in interpretation and application, with an 'it depends' condition or explanation. Situational contexts, in this way, have been more overtly acknowledged as an important caveat and qualifier when interpreting and understanding IC. Researchers have found it necessary to contextualize IC in order to tap meaningful responses from subjects. This follows with anthropologist, Edward Hall's (1976) concept of dividing cultures by their ways of communicating, into high or low context.

A high-context (HC) communication or message is one in which most of the information is either in the physical context or internalized in the person, while very little is in the coded, explicit, transmitted part of the message. A low-context (LC) communication is just the opposite: i.e., the mass of the information is vested in the implicit code. (p. 91)

This difference in communication is a fundamental difference reflected in norms, values, beliefs, attitudes, world views not only of individuals, but of groups, communities, and societies. These cultural conditions are reflected in every aspect of societal systems—in the family roles and expectations; in a person's behavior and thinking of him/herself and in

relationship to others; language, its use in context, formal and informal, often in a humble/honorific system; at school, work, and other activities of daily living.

The units of analysis in this investigation were conducted at the individual level. Most research on IC, also at the cultural level, utilize self-report instruments. In psychology, the focus tends to be primarily on the individual, at times the group, but mostly on the one person. Other disciplines like sociology and anthropology tend to center attention on broader bands of populations and societies.

Some in the field may argue that psychology, being historically a western discipline, tends to be rather inherently individualistic and fits naturally within the U.S. value structure of self-reliance, independence, and autonomy. In this light, the perception of being collectivistic may be perceived somewhat negatively in the U.S. On the other hand, in more traditional societies, people may find the reverse to be so. Researchers are not immune from colored lens.

Technology has impacted and greatly facilitated access and speed of communication. Human behavior and human interaction is still understood best by other human beings.

There is a need for further research on IC across disciplines. Knowledge regarding IC and world views have applications not only in social psychology but in most human systems involving other humans. For example, in business, international relations, language interpretation and translation, schools, health care, including mental health, acknowledgment, understanding, and acceptance of people's world views are necessary to some degree to maintain equilibrium, interact effectively, and have positive outcomes.

Further investigation of IC should be considered in adjustment, adaptation, and perhaps, acculturation research. This may potentially impact research with immigrant, refugee, and sojourner groups, along with mental health topics, and cross-cultural training among other issues. This continued pursuit of knowledge of others in a global society, global economy, with shared universal values is essential.

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**APPENDICES**

**APPENDIX A**  
**INDIVIDUALISM-COLLECTIVISM (INDCOL) SCALE**

## INSTRUCTIONS

Below are statements concerning personal beliefs, attitudes, and behaviors. Each statement represents a commonly held position and there are no right or wrong answers. You will probably disagree with some items and agree with others. We are interested in the extent to which you agree or disagree with each statement.

Read each statement carefully and indicate your level of agreement/disagreement by selecting a number from the scale below and blackening the corresponding circle on the NCS answer sheet with a No. 2 pencil. Please base your answers on your present beliefs and actions, not on what you think others believe or how you wish you behaved. You can help most by being as frank and truthful about yourself as possible. If you find that numbers from the scale do not adequately represent your attitudes and behaviors, use the number which is closest. Please give your honest response to each statement.

The scale is:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. I prefer to be direct and forthright when discussing with people.
2. My happiness depends very much on the happiness of those around me.
3. I would do what would please my family, even if I detested that activity.
4. I usually struggle through a personal problem by myself.
5. I usually feel that my relationships with others are more important than my individual accomplishments.
6. Winning is everything.
7. It is important for me to enjoy my life.
8. My choice of spouse is independent of my parents' views.
9. One should live ones life independently of others.
10. Parents of those who did win an award have every right to feel that they themselves have earned it.
11. It is important to me that I respect decisions made by my groups.
12. What happens to me is my own doing.
13. To be superior, a person must stand alone.
14. I usually sacrifice my self-interest for the benefit of my group.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	----------------------------	----------------	------------------	----------------

1	2	3	4	5	6	7
---	---	---	---	---	---	---

15. It annoys me when other people perform better than I do.
16. It is important for me to maintain harmony within my group.
17. It is important to me that I do my job better than others.
18. I like sharing little things with my neighbors.
19. I enjoy working in situations involving competition with others.
20. We should keep our aging parents with us at home.
21. Work must be emphasized over pleasure.
22. Even if I go to a college near where my parents live, I would rather rent an apartment.
23. The well-being of my coworkers is important to me.
24. I enjoy being unique and different from others in many ways.
25. If a relative were in financial difficulty, I would help within my means.
26. Children should feel honored if their parents receive a distinguished award.
27. Too much emphasis on pleasure has weakened our society.
28. If my younger brother or sister fails, I feel responsible.
29. People should volunteer their services to the community even if they aren't paid.
30. I often do "my own thing."
31. Competition is the law of nature.
32. If a coworker gets a prize, I would feel proud.
33. I am a unique individual.
34. To me, pleasure is spending time with others.
35. When another person does better than I do, I get tense and aroused.
36. One of the most important goals of my life is for me to be happy.
37. I would sacrifice an activity that I enjoy very much if my family did not approve of it.
38. I like my privacy.
39. Without competition, it is not possible to have a good society.
40. I like to live close to my ~~god~~ friends.
41. Children should be taught to place duty before pleasure.
42. Life should be fun.
43. Before making a decision, I like to consult widely.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	----------------------------------	-------------------	---------------------	-------------------

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1	2	3	4	5	6	7
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- 44. I feel good when I cooperate with others.
- 45. I hate to disagree with others in my group.
- 46. Some people emphasize winning; I am not one of them.
- 47. Before taking a major trip, I consult with most members of my family and many friends.
- 48. Cooperation is the law of nature.
- 49. When I succeed, it is usually because of my abilities.
- 50. I want my aging parents to live with me in my home.

**APPENDIX B**  
**PERSONAL VALUES SCALE (PVS)**

Please read over the following statements, and at each one indicate (by a check in the appropriate space) whether it is something you *always admire* in other people or something you *always dislike*, or something that *depends on the situation* whether you admire it or not.

	Always Admire	Depends on Situation	Always Dislike
	1	2	3
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
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20.			
21.			
22.			
23.			
24.			
25.			
26.			

Always Admire                      Depends on Situation      Always Dislike

- 
- |     | 1   | 2 | 3 |
|-----|---|---|---|
| 27. | Finding ways to help others less fortunate than oneself.                              |   |   |
| 28. | Being utterly selfless in all one's actions.  |   |   |
| 29. | Having a deep love of all people, whoever they are.                                   |   |   |
| 30. | Going out of one's way to help someone new feel at home.                              |   |   |
| 31. | Being concerned about the happiness of other people.                                  |   |   |
| 32. | Looking out for one's own interests first.  |   |   |
| 33. | Ridiculing other people.  |   |   |
| 34. | Being selfish.  |   |   |
| 35. | Ignoring the needs of other people.   |   |   |
| 36. | Revengeing wrongs that other people have done to one.                                 |   |   |
| 37. | Being unable to empathize with other people.  |   |   |
| 38. | Hurting other people's feelings.  |   |   |
| 39. | Making jokes at the expense of other people.  |   |   |
| 40. | Letting each person go it alone, without offering help.                               |   |   |
| 41. | Refusing any aid to people who don't deserve it.                                      |   |   |
| 42. | Being well-mannered and behaving properly in social situations.                       |   |   |
| 43. | Dressing and acting in a way that is appropriate to the occasion.                     |   |   |
| 44. | Being able to get people to cooperate with one.                                       |   |   |
| 45. | Being poised, gracious, and charming under all circumstances.                         |   |   |
| 46. | Always doing the right thing at the right time.                                       |   |   |
| 47. | Being informed in proper etiquette.   |   |   |
| 48. | Being able to plan social functions smoothly.   |   |   |
| 49. | Being popular with everyone.  |   |   |
| 50. | Always behaving properly in public.   |   |   |
| 51. | Being concerned about what kind of impression one makes on others.                    |   |   |
| 52. | Being able to get along with all kinds of people, whether or not they are worthwhile. |   |   |
| 53. | Being the person in the group who is the most popular with the opposite sex.          |   |   |
| 54. | Being a social isolate.   |   |   |
| 55. | Dressing sloppily.  |   |   |
| 56. | Displaying unpleasant personal habits in public.                                      |   |   |
| 57. | Interrupting others while they are talking.   |   |   |

Always Admire                      Depends on Situation                      Always Dislike

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1

2

3

58. Constantly making social blunders.
59. Talking constantly and attracting attention to oneself.
60. Having bad manners.
61. Being discourteous.
62. Being unable to act in a way that will please others.
63. Being ignorant of the rules of proper behavior.
64. Defending the honor of one's group whenever it is unfairly criticized.
65. Working hard to improve the prestige and status of one's groups.
66. Helping organize group activities.
67. Attending all meetings of one's groups.
68. Upholding the honor of one's group.
69. Supporting all activities of one's organizations.
70. Doing more than one's share of the group task.
71. Performing unpleasant tasks, if these are required by one's group.
72. Remembering one's group loyalties at all times.
73. Taking an active part in all group affairs.
74. Treating an attack on one's group like an attack on oneself.
75. Concealing from outsiders most of one's dislikes and disagreements with fellow members of the group.
76. Doing all one can to build up the prestige of the group.
77. Betraying one's group to outsiders.
78. Letting other people do all the work for the group, and not getting involved oneself.
79. Letting people get away with unfair criticism of one's group.
80. Being unconcerned with what other people think about one's group.
81. Being uncooperative.
82. Failing to support group functions.
83. Paying little attention to what the members of one's group think.
84. Criticizing one's own group in public.
85. Getting by with as little involvement in organizations as possible.
86. Not taking one's group memberships seriously.

Always Admire      Depends on Situation      Always Dislike

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1

2

3

87. Studying hard to get good grades in school.
88. Working hard to achieve academic honors.
89. Trying hard to understand difficult lectures and textbooks.
90. Striving to get the top grade-point average in the group.
91. Studying constantly in order to become a well-educated person.
92. Being studious.
93. Getting the top grade on a test.
94. Treating one's studies as the most important thing in college life.
95. Doing well in school.
96. Priding oneself on good grades.
97. Being content with a "gentlemanly C" grade.
98. Making fun of academic grinds.
99. Being satisfied with poor grades.
100. Priding oneself on being able to get by in school with little work.
101. Not doing well in one's coursework.
102. Not letting studies interfere with one's college life.
103. Doing one's best to avoid working hard in a course.
104. Being proud of poor grades.
105. Paying no attention to lectures and textbooks that are difficult.
106. Taking snap courses that don't require any work.
107. Being graceful and well-coordinated in physical movements.
108. Taking good care of one's physical self, so that one is always healthy.
109. Being good in some form of sport.
110. Developing physical strength and agility.
111. Developing an attractive body that others will admire.
112. Having a good figure or physique.
113. Having good muscular coordination.
114. Being a well-developed, outdoors type who enjoys physical activity.
115. Keeping in good physical shape.
116. Exercising regularly.

Always Admire                      Depends on Situation                      Always Dislike

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1

2

3

- 117. Being physically weak and puny.
- 118. Being an indoor type, and avoiding outdoor activities.
- 119. Being poorly proportioned physically.
- 120. Being uninterested in sports.
- 121. Being listless and uninterested in strenuous activity.
- 122. Being awkward in bearing and walk.
- 123. Being unable to do anything that requires physical effort.
- 124. Being unskilled in any form of athletics.
- 125. Ignoring one's own physical condition.
- 126. Avoiding any form of exercise.
- 127. Being respected by people who are themselves worthwhile.
- 128. Gaining recognition for one's achievements.
- 129. Being in a position to direct and mold others' lives.
- 130. Making sure that one is respected.
- 131. Doing what one is told.
- 132. Being in a position to command respect from others.
- 133. Having all the respect that one is entitled to.
- 134. Being dignified in bearing and manner.
- 135. Being looked up to by others.
- 136. Enjoying great prestige in the community.
- 137. Having the ability to lead others.
- 138. Showing great leadership qualities.
- 139. Acting beneath one's dignity.
- 140. Not being able to do anything better than other people.
- 141. Not being recognized for one's true worth.
- 142. Being in a subordinate position.
- 143. Having little effect on other people's actions.
- 144. Being unable to exert any influence on things around one.
- 145. Failing to develop contacts that could improve one's position.
- 146. Being content with an inferior position all one's life.

Always Admire                      Depends on Situation      Always Dislike

---

1

2

3

147. Associating with worthless people.
148. Not taking pride in one's achievements.
149. Never cheating or having anything to do with cheating situations, even for a friend.
150. Always telling the truth, even though it may hurt oneself or others.
151. Never telling a lie, even though to do so would make the situation more comfortable.
152. Sticking up for the truth under all circumstances.
153. Always representing one's own true thoughts and feelings honestly.
154. Speaking one's mind truthfully, without regard for the consequences.
155. Testifying against friends, if need be, in order that the truth be known.
156. Presenting oneself completely and honestly, even if it is unnecessary to do so.
157. Going out of one's way to bring dishonest people to justice.
158. Volunteering information concerning wrongdoing, even if friends are involved.
159. Helping a close friend get by a tight situation, even though one may have to stretch the truth a bit to do it.
  
160. Taking things that don't belong to one.
161. Telling white lies.
162. Deceiving others.
163. Using other's property without asking permission.
164. Telling falsehoods in order to help other people.
165. Helping a friend through an examination.
166. Using a false ID card to get into restricted places.
167. Stealing when necessary.
168. Being dishonest in harmless ways.
169. Being devout in one's religious faith.
170. Always living one's religion in his daily life.
171. Always attending religious services regularly and faithfully.
172. Avoiding the physical pleasures that are prohibited in the Bible.
173. Encouraging others to attend services and lead religious lives.
174. Saying one's prayers regularly.
175. Seeking comfort in the Bible in time of need.

Always Admire      Depends on Situation      Always Dislike

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1

2

3

- 176. Adhering to the doctrines of one's religion.
- 177. Having an inner communication with the Supreme Being.
- 178. Having faith in a Being greater than man.
- 179. Being an atheist.
- 180. Denying the existence of God.
- 181. Paying little attention to religious matters.
- 182. Treating man, rather than God, as the measure of all things.
- 183. Abstaining from trivial religious rituals.
- 184. Not falling for religious mythology.
- 185. Taking a skeptical attitude toward religious teachings.
- 186. Seeking scientific explanations of religious miracles.
- 187. Treating the Bible only as an historical or literary work.
- 188. Regarding religions as crutches for the primitive peoples of the world.
- 189. Practicing self-control.
- 190. Replying to anger with gentleness.
- 191. Never losing one's temper, no matter what the reason.
- 192. Not expressing anger, even when one has a reason for doing so.
- 193. Suppressing hostility.
- 194. Keeping one's feelings hidden from others.
- 195. Suppressing the urge to speak hastily in anger.
- 196. Hiding one's feelings of frustration from other people.
- 197. Keeping one's hostile feelings to himself.
- 198. Not getting upset when things go wrong.
- 199. Always being patient with people.
- 200. Losing one's temper easily.
- 201. Showing one's feelings readily.
- 202. Telling people off when they offend one.
- 203. Expressing one's anger openly and directly when provoked.
- 204. Getting upset when things don't go well.
- 205. Letting others see how one really feels.

Always Admire      Depends on Situation      Always Dislike

---

1

2

3

206. Letting off steam when one is frustrated.
207. Swearing when one is angry.
208. Becoming so angry that other people know about it.
209. Letting people know when one is annoyed with them.
210. Being able to create beautiful and artistic objects.
211. Developing new and different ways of doing things.
212. Constantly developing new ways of approaching life.
213. Inventing gadgets for the fun of it.
214. Trying out new ideas.
215. Being original in one's thoughts and ways of looking at things.
216. Always looking for new roads to travel.
217. Doing unusual things.
218. Creating unusual works of art.
219. Being an innovator.
220. Creating beautiful things for the enjoyment of other people.
221. Devoting one's entire energy to the development of new theories.
222. Doing routine things all the time.
223. Not having any new ideas.
224. Always doing things in the same way.
225. Enjoying a routine, patterned life.
226. Doing things the same way that other people do them.
227. Abiding by traditional ways of doing things.
228. Repeating the ideas of others, without any innovation.
229. Working according to a set schedule that doesn't vary from day to day.
230. Painting or composing or writing in a traditional style.
231. Keeping one's life from changing very much.
232. Being a free-thinking person, who doesn't care what others think of his opinions.
233. Being outspoken and frank in expressing one's likes and dislikes.
234. Being independent.
235. Standing up for what one thinks right, regardless of what others think.

Always Admire                      Depends on Situation                      Always Dislike

---

1

2

3

236. Going one's own way as he pleases.
237. Being a nonconformist.
238. Being different from other people.
239. Encouraging other people to act as they please.
240. Thinking and acting freely, without social restraints.
241. Living one's own life, independent of others.
242. Being independent, original, nonconformist, different from other people.
243. Conforming to the requirements of any situation and doing what is expected of one.
244. Going along with the crowd.
245. Acting in such a way as to gain the approval of others.
246. Keeping one's opinions to himself when they differ from the group's.
247. Being careful not to express an idea that might be contrary to what other people believe.
248. Always basing one's behavior on the recognition that he is dependent on other people.
249. Acting so as to fit in with other people's way of doing things.
250. Always checking on whether or not one's intended actions would be acceptable to other people.
251. Never acting so as to violate social conventions.
252. Suppressing one's desire to be unique and different.
253. Working and living in harmony with other people.

**APPENDIX C**  
**SOCIAL REPRESENTATION SCALE (SRS)**

Read each statement carefully and indicate your level of agreement/disagreement by selecting a number from the scale below and blackening the corresponding circle on the NCS answer sheet with a No. 2 pencil. Please base your answers on your present beliefs and actions, not on what you think others believe or how you wish you behaved. You can help most by being as frank and truthful about yourself as possible. If you find that numbers from the scale do not adequately represent your attitudes and behaviors, use the number which is closest. Please give your honest response to each statement.

The scale is:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

1. My goal in life is to acquire as much status, wealth, and power as possible.
2. I always put my problems aside so that I can attend fully to the needs of others.
3. The best advice I can give to others for living a rewarding life is: "Look out for number one."
4. I consider my needs along with the needs of others in order to make decisions which best satisfy the needs of both.
5. In today's competitive world, you have to grab for all you can get.
6. Nothing is of greater value than living my life for others.
7. I am in the best position to live a successful and rewarding life when I consider both my needs and the needs of others.
8. Things tend to work out best when I forget about myself and focus my attention on the needs of others.
9. The best measure of a person's success in life is the level of fame and fortune they have achieved.
10. I consider the needs of everyone involved (including my own) before deciding on a course of action.
11. In order to live a truly meaningful life, I must be willing to sacrifice my happiness for the happiness of others.
12. It's a "dog-eat-dog" world out there and my best chance for survival is to "get while the getting is good."
13. If my needs conflict with those of others, I always put their needs first.
14. When individuals are making decisions that affect others, I expect them to take the welfare of other people (including mine) into account.
15. By becoming selfless and totally devoting myself to improving the lives of others, my life will have true meaning and significance.
16. I try to compromise (i.e., seek a middle ground) when my needs conflict with those of others.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1	2	3	4	5	6	7

17. I consider other people's needs to be more important than my own.
18. If there is something I really want, I'll find a way to get it even if it creates problems for others.
19. I give equal weight to my needs and the needs of others when making life decisions.
20. I maintain a "survival of the fittest" attitude in order to find success in today's competitive world.
21. When making important decisions, I always consider how my behavior will affect others.
22. It's a guiding principle in my life to put other people's needs ahead of my own.
23. I am generally willing to compromise in order to resolve conflicts with others.
24. Nobody gets ahead in this world by looking out for the needs of others.
25. Living for and completely devoting myself to others is the best path to a meaningful life.
26. Money is the main motivating factor in my life.
27. Things work out best when I consider both my needs and the needs of others.

**APPENDIX D**  
**LEVENSON'S LOCUS OF CONTROL SCALE**

Instructions: Each statement represents a commonly held opinion and there are no right or wrong answers. You will probably disagree with some items and agree with others. We are interested in the extent to which you agree or disagree with such matters of opinion.

Reach each statement carefully. Then indicate the extent to which you agree or disagree by circling the number in front of each statement. The numbers and their meaning are indicated below.

Strongly Disagree	Disagree Somewhat	Slightly Disagree	Slightly Agree	Agree Somewhat	Strongly Agree
----------------------	----------------------	----------------------	-------------------	-------------------	-------------------

---

1	2	3	4	5	6
---	---	---	---	---	---

1. Whether or not I get to be a leader depends mostly on my ability.
2. To a great extent, my life is controlled by accidental happenings.
3. I feel like what happens in my life is mostly determined by powerful people.
4. Whether or not I get into a car accident depends mostly on how good a driver I am.
5. When I make plans, I am almost certain to make them work.
6. Often there is no chance of protecting my personal interest from bad luck happenings.
7. When I get what I want, it's usually because I'm lucky.
8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.
9. How many friends I have depends on how nice a person I am.
10. I have often found that what is going to happen will happen.
11. My life is chiefly controlled by powerful others.
12. Whether or not I get into a car accident is mostly a matter of luck.
13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.
14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.
15. Getting what I want requires pleasing those people above me.
16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.

	Strongly Disagree	Disagree Somewhat	Slightly Disagree	Slightly Agree	Agree Somewhat	Strongly Agree
	1	2	3	4	5	6
18.	I can pretty much determine what will happen in my life.					
19.	I am usually able to protect my personal interests.					
20.	Whether or not I get into a car accident depends mostly on the other driver.					
21.	When I get what I want, it's usually because I worked hard for it.					
22.	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.					
23.	My life is determined by my own actions.					
24.	It is chiefly a matter of fate whether or not I have a few friends or many friends.					

**APPENDIX E**  
**MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE (MCSDS)**

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is TRUE or FALSE as it pertains to you.

1. Before voting I thoroughly investigate the qualifications of all the candidates.
2. I never hesitate to go out of my way to help someone in trouble.
3. It is sometimes hard for me to go on with my work if I am not encouraged.
4. I have never intensely disliked anyone.
5. On occasion, I have had doubts about my ability to succeed in life.
6. I sometimes feel resentful when I don't get my way.
7. I am always careful about my manner of dress.
8. My table manners at home are as good as when I eat out in a restaurant.
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it.
10. On a few occasions, I have given up doing something because I thought too little of my ability.
11. I like to gossip at times.
12. There have been times when I felt like rebelling against people in authority even though I knew they were right.
13. No matter who I'm talking to, I'm always a good listener.
14. I can remember "playing sick" to get out of something.
15. There have been occasions when I took advantage of someone.
16. I'm always willing to admit it when I make a mistake.
17. I always try to practice what I preach.
18. I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.
19. I sometimes try to get even rather than forgive and forget.
20. When I don't know something, I don't at all mind admitting it.
21. I am always courteous, even to people who are disagreeable.
22. At times I have really insisted on having things my own way.
23. There have been occasions when I felt like smashing things.
24. I would never think of letting someone else be punished for my wrongdoings.

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is TRUE or FALSE as it pertains to you.

25. I never resent being asked to return a favor.
26. I have never been irked when people expressed ideas very different from my own.
27. I never make a long trip without checking the safety of my car.
28. There have been times when I was quite jealous of the good fortune of others.
29. I have almost never felt the urge to tell someone off.
30. I am sometimes irritated by people who ask favors of me.
31. I have never felt that I was punished without cause.
32. I sometimes think when people have a misfortune they only got what they deserved.
33. I have never deliberately said something that hurt someone's feelings.

**Table 1**

**Descriptive Statistics for INDCOL, SRS, Locus of Control, and Social Desirability Scales (Females)**

<b>Variable</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
<b>HI</b>	<b>507</b>	<b>13.00</b>	<b>56.00</b>	<b>45.14</b>	<b>5.39</b>
<b>HC</b>	<b>507</b>	<b>10.00</b>	<b>56.00</b>	<b>44.91</b>	<b>5.56</b>
<b>VI</b>	<b>507</b>	<b>9.00</b>	<b>55.00</b>	<b>31.98</b>	<b>8.48</b>
<b>VC</b>	<b>507</b>	<b>15.00</b>	<b>49.00</b>	<b>34.49</b>	<b>6.45</b>
<b>SRS-Ind</b>	<b>507</b>	<b>9.00</b>	<b>63.00</b>	<b>29.11</b>	<b>9.35</b>
<b>SRS-Coll</b>	<b>507</b>	<b>27.00</b>	<b>63.00</b>	<b>48.04</b>	<b>7.33</b>
<b>SRS-Ssg</b>	<b>507</b>	<b>9.00</b>	<b>63.00</b>	<b>32.54</b>	<b>9.79</b>
<b>LOC-Internal</b>	<b>507</b>	<b>20.00</b>	<b>48.00</b>	<b>35.26</b>	<b>4.96</b>
<b>LOC-Powerful Others</b>	<b>507</b>	<b>8.00</b>	<b>47.00</b>	<b>23.04</b>	<b>6.07</b>
<b>LOC-Chance</b>	<b>507</b>	<b>8.00</b>	<b>45.00</b>	<b>24.83</b>	<b>5.92</b>
<b>Social Desirability</b>	<b>507</b>	<b>11.00</b>	<b>44.00</b>	<b>20.24</b>	<b>3.42</b>

**Note.** HI = horizontal individualism, HC = horizontal collectivism, VI = vertical individualism, VC = vertical collectivism, SRS-Ind = Social Representation Scale, individualism, SRS-Coll = Social Representation Scale, collectivism, SRS-Ssg = Social Representation Scale, selfless giving, LOC-Internal = Locus of Control, internal LOC-Powerful Others = Locus of Control, powerful others, LOC-Chance = Locus of Control, chance

**Table 2**

**Descriptive Statistics for INCDCOL, SRS, Locus of Control, and Social Desirability Scales (Males)**

<b>Variable</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>M</b>	<b>SD</b>
<b>HI</b>	<b>339</b>	<b>13.00</b>	<b>56.00</b>	<b>44.89</b>	<b>5.42</b>
<b>HC</b>	<b>339</b>	<b>17.00</b>	<b>54.00</b>	<b>41.33</b>	<b>6.17</b>
<b>VI</b>	<b>339</b>	<b>13.00</b>	<b>56.00</b>	<b>37.49</b>	<b>9.00</b>
<b>VC</b>	<b>339</b>	<b>14.00</b>	<b>53.00</b>	<b>33.21</b>	<b>6.59</b>
<b>SRS-Ind</b>	<b>339</b>	<b>9.00</b>	<b>63.00</b>	<b>33.53</b>	<b>10.72</b>
<b>SRS-Coll</b>	<b>339</b>	<b>9.00</b>	<b>63.00</b>	<b>44.55</b>	<b>8.32</b>
<b>SRS-Ssg</b>	<b>339</b>	<b>9.00</b>	<b>63.00</b>	<b>32.76</b>	<b>9.75</b>
<b>LOC-Internal</b>	<b>339</b>	<b>15.00</b>	<b>48.00</b>	<b>35.13</b>	<b>5.38</b>
<b>LOC-Powerful Others</b>	<b>339</b>	<b>8.00</b>	<b>45.00</b>	<b>24.34</b>	<b>5.93</b>
<b>LOC-Chance</b>	<b>339</b>	<b>8.00</b>	<b>42.00</b>	<b>25.18</b>	<b>5.93</b>
<b>Social Desirability</b>	<b>339</b>	<b>1.00</b>	<b>71.00</b>	<b>14.05</b>	<b>6.16</b>

Table 3

**Pearson Internal Consistency Reliability Coefficients**

<b>Variable</b>	<b>Total Sample N = 846</b>	<b>Females n = 507</b>	<b>Male n = 339</b>
<b><u>INDCOL</u></b>			
HI	.62	.63	.61
HC	.75	.72	.74
VI	.83	.80	.82
VC	.58	.58	.58
<b><u>Social Representation Scale (SRS)</u></b>			
Individualism	.86	.84	.86
Collectivism	.84	.82	.85
Selfless Giving	.88	.89	.88
<b><u>Locus of Control</u></b>			
Internal	.62	.60	.66
Powerful Others	.75	.77	.71
Chance	.72	.72	.72

**Table 4**

**Pearson Correlations Between All Scales (Females)**

	SDS	HI	HC	VI	VC	SRS1	SRS2	SRS3	LOC1	LOC2	LOC3
SDS	1										
HI	.080	1									
HC	.116**	.151**	1								
VI	.058	.134**	-.023	1							
VC	.137**	-.030	.437**	.107*	1						
SRS1	.101*	.080	-.122**	.411**	.043	1					
SRS2	.113*	.046	.435**	-.031	.284**	-.259**	1				
SRS3	.084	-.054	.286**	-.013	.391**	-.105*	.377**	1			
LOC1	.149**	.312**	.141**	.202**	.067	.130**	.145**	-.024	1		
LOC2	.129**	-.154**	-.009	.246**	.136**	.341**	-.040	.071	-.006	1	
LOC3	.145**	.006	.002	.093*	.058	.221**	.018	.073	-.076	.594**	1

\* correlation is significant at the .05 level (2-tailed); \*\* correlation is significant at the .01 level (2-tailed).

SDS = Social Desirability Scale; SRS1 = SRS, individualism; SRS2 = SRS, collectivism; SRS3 = SRS, selfless giving; LOC1 = LOC, internal; LOC2 = LOC, powerful others; LOC3 = LOC, chance.

**Table 5**

**Pearson Correlations Between All Scales (Males)**

	SDS	HI	HC	VI	VC	SRS1	SRS2	SRS3	LOC1	LOC2	LOC3
SDS	1										
HI	.018	1									
HC	.103	.222**	1								
VI	-.146**	.121*	.038	1							
VC	.091	-.054	.406**	.100	1						
SRS1	-.097	.045	-.148**	.543**	.022	1					
SRS2	.140**	.123*	.399**	-.135*	.301**	-.332**	1				
SRS3	.180**	-.196**	.292**	-.104	.390**	-.251**	.398	1			
LOC1	.089	.393**	.156**	.215**	.089	.110*	.251**	-.073	1		
LOC2	-.091	-.022	.069	.198**	.201**	.370**	.001	.137*	-.027	1	
LOC3	-.086	-.055	.045	-.025	.100	.186**	.020	.150**	-.201**	.543**	1

\* correlation is significant at the .05 level (2-tailed); \*\* correlation is significant at the .01 level (2-tailed).

SDS = Social Desirability Scale; SRS1 = SRS, individualism; SRS2 = SRS, collectivism; SRS3 = SRS, selfless giving; LOC1 = LOC, internal; LOC2 = LOC, powerful others; LOC3 = LOC, chance.

**Table 6**

**Pearson Correlations Between All Scales (Total Sample)**

	SDS	HI	HC	VI	VC	SRS1	SRS2	SRS3	LOC1	LOC2	LOC3	GENDER
SDS	1											
HI	.012	1										
HC	.147**	.406**	1									
VI	-.045	.367**	.316**	1								
VC	-.005	.498**	.325**	.413**	1							
SRS1	-.121**	.173**	.014	.164**	.223**	1						
SRS2	.246**	.181**	.306**	.135**	.116**	-.326**	1					
SRS3	.096**	.271**	.320**	.045	.156**	-.161**	.374**	1				
LOC1	.120**	.208**	.177**	.203**	.205**	.116**	.191**	-.045	1			
LOC2	-.057	.124**	.112**	.051	.139**	.365**	-.044	.098**	-.016	1		
LOC3	-.034	.037	.118**	.055	.053	.207**	.012	.104**	-.129	.574**	1	
GENDER	-.614**	.103**	-.124**	.117**	.077*	.214**	-.216**	.011	-.012	.105*	.030	1

\* correlation is significant at the .05 level (2-tailed); \*\* correlation is significant at the .01 level (2-tailed).

SDS = Social Desirability Scale; SRS1 = SRS, individualism; SRS2 = SRS, collectivism; SRS3 = SRS, selfless giving; LOC1 = LOC, internal; LOC2 = LOC, powerful others; LOC3 = LOC, chance.

Table 7

**Fit Indexes for INDCOL Alternative Models**

Model	Chi-Square	df	NFI	CFI	RMR
<b>Single factor</b>					
Total	4038.25	464	.31	.33	.12
Females	2491.75	464	.28	.32	.11
Males	1918.44	464	.27	.32	.12
<b>Two factor (Horizontal-Vertical)</b>					
Total	2740.31	463	.53	.57	.10
Females	1855.45	463	.46	.53	.10
Males	1396.42	463	.47	.56	.10
<b>Two factor (Individualism-Collectivism)</b>					
Total	2519.31	463	.57	.62	.09
Females	1692.20	463	.51	.59	.09
Males	1370.75	463	.48	.58	.09
<b>Four factor (HI, HC, VI, VC)</b>					
Total	1777.50	458	.70	.75	.07
Females	1256.87	458	.64	.73	.07
Males	1052.34	458	.60	.72	.08

Note. NFI = normed fit index; CFI = comparative fit index;  
RMR = standardized root mean squared residual

Table 8

Vertical and Horizontal Individualism and Collectivism Items from INDCOLHorizontal individualism (HI)

- 0 I prefer to be direct and forthright when discussing with people.
- 0 One should live ones life independently of others.
- 0 What happens to me is my own doing.
- 0 I enjoy being unique and different from others in many ways.
- 0 I often do "my own thing."
- 0 I am a unique individual.
- 0 I like my privacy.
- 0 When I succeed, it is usually because of my abilities.

Vertical individualism (VI)

- 0 Winning is everything.
- 0 It annoys me when other people perform better than I do.
- 0 It is important to me that I do my job better than others.
- 0 I enjoy working in situations involving competition with others.
- 0 Competition is the law of nature.
- 0 When another person does better than I do, I get tense and aroused.
- 0 Without competition, it is not possible to have a good society.
- 0 Some people emphasize winning; I am not one of them.

Horizontal collectivism (HC)

- 0 My happiness depends very much on the happiness of those around me.
- 0 It is important for me to maintain harmony within my group.
- 0 I like sharing little things with my neighbors.
- 0 The well-being of my coworkers is important to me.
- 0 If a relative were in financial difficulty, I would help within my means.
- 0 If a coworker gets a prize, I would feel proud.
- 0 To me, pleasure is spending time with others.
- 0 I feel good when I cooperate with others.

Vertical collectivism (VC)

- 0 I would do what would please my family, even if I detested that activity.
- 0 I usually sacrifice my self-interest for the benefit of my group.
- 0 We should keep our aging parents with us at home.
- 0 I would sacrifice an activity that I enjoy very much if my family did not approve of it.
- 0 Children should be taught to place duty before pleasure.
- 0 I hate to disagree with others in my group.
- 0 Before taking a major trip, I consult with most members of my family and many friends.

Table 9

**Fit Indexes for Social Representation Scale (SRS) for Alternative Models**

Model	Chi-Square	df	NFI	CFI	RMR
<b>Single factor</b>					
Total	4795.77	324	.46	.48	.14
Females	2757.32	324	.46	.48	.14
Males	2137.98	324	.46	.50	.14
<b>Two factor</b>					
Total	2722.23	323	.69	.72	.11
Females	1597.63	323	.69	.73	.10
Males	1356.61	323	.66	.71	.11
<b>Three factor</b>					
Total	1235.18	321	.86	.89	.06
Females	865.95	321	.83	.89	.07
Males	747.98	321	.81	.88	.07

Note. NFI = normed fit index; CFI = comparative fit index;  
RMR = standardized root mean squared residual

Table 10

**Individualism, Collectivism, and Selfless Giving Items from SRS****Individualism**

- 0 My goal in life is to acquire as much status, wealth, and power as possible.
- 0 The best advice I can give to others for living a rewarding life is: "Look out for number one."
- 0 In today's competitive world, you have to grab for all you can get.
- 0 The best measure of a person's success in life is the level of fame and fortune they have achieved.
- 0 It's a "dog-eat-dog" world out there and my best chance for survival is to "get while the getting is good."
- 0 If there is something I really want, I'll find a way to get it even if it creates problems for others.
- 0 I maintain a "survival of the fittest" attitude in order to find success in today's competitive world.
- 0 Nobody gets ahead in this world by looking out for the needs of others.
- 0 Money is the main motivating factor in my life.

**Collectivism**

- 0 I consider my needs along with the needs of others in order to make decisions which best satisfy the needs of both.
- 0 I am in the best position to live a successful and rewarding life when I consider both my needs and the needs of others.
- 0 I consider the needs of everyone involved (including my own) before deciding on a course of action.
- 0 When individuals are making decisions that affect others, I expect them to take the welfare of other people (including mine) into account.
- 0 I try to compromise (i.e., seek a middle ground) when my needs conflict with those of others.
- 0 I give equal weight to my needs and the needs of others when making life decisions.
- 0 When making important decisions, I always consider how my behavior will affect others.
- 0 I am generally willing to compromise in order to resolve conflicts with others.
- 0 Things work out best when I consider both my needs and the needs of others.

**Selfless Giving**

- 0 I always put my problems aside so that I can attend fully to the needs of others.
- 0 Nothing is of greater value than living my life for others.
- 0 Things tend to work out best when I forget about myself and focus my attention on the needs of others.
- 0 In order to live a truly meaningful life, I must be willing to sacrifice my happiness for the happiness of others.
- 0 If my needs conflict with those of others, I always put their needs first.
- 0 By becoming selfless and totally devoting myself to improving the lives of others, my life will have true meaning and significance.
- 0 I consider other people's needs to be more important than my own.
- 0 It's a guiding principle in my life to put other people's needs ahead of my own.
- 0 Living for and completely devoting myself to others is the best path to a meaningful life.

**Table 11**

**Fit Indexes of INDCOL (Four-factor) and SRS (Three-factor)**

	Chi-Square	df	NFI	CFI	GFI	AGFI	RMR
<b>Total</b>	<b>4624.82</b>	<b>1634</b>	<b>.72</b>	<b>.80</b>	<b>.83</b>	<b>.81</b>	<b>.14</b>
<b>Females</b>	<b>3499.62</b>	<b>1634</b>	<b>.65</b>	<b>.77</b>	<b>.80</b>	<b>.78</b>	<b>.14</b>
<b>Males</b>	<b>3060.34</b>	<b>1634</b>	<b>.62</b>	<b>.78</b>	<b>.76</b>	<b>.74</b>	<b>.17</b>

**Note.** Chi-Square values,  $p < .001$ ; NFI = normed fit index; CFI = comparative fit index; GFI = goodness-of-fit index; AGFI = GFI adjusted for degrees of freedom; RMR= standardized root mean squared residual.

**Table 12**

**Standardized Factor Loadings and Residuals with INDCOL-SRS  
by Total Sample and Gender**

<b>Parameter</b>	<b>Total Sample</b>		<b>Females</b>		<b>Males</b>	
	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>
V1, F1	.413	.911	.404	.915	.438	.899
V2, F2	.407	.914	.368	.930	.411	.912
V3, F4	.537	.843	.425	.905	.561	.828
V4, F3	.698	.717	.598	.802	.720	.694
V5, F1	.174	.985	.219	.976	.101	.995
V6, F1	.300	.954	.267	.964	.355	.935
V7, F4	.357	.934	.321	.947	.366	.931
V8, F3	.475	.880	.496	.868	.486	.874
V9, F2	.547	.837	.507	.862	.509	.860
V10, F3	.578	.816	.593	.805	.538	.843
V11, F2	.554	.833	.498	.867	.537	.843
V12, F3	.628	.778	.629	.778	.579	.815
V13, F4	.299	.954	.263	.965	.330	.944
V14, F2	.655	.756	.566	.824	.655	.755
V15, F1	.637	.771	.626	.780	.613	.790
V16, F2	.443	.897	.383	.924	.510	.850
V17, F4	.330	.944	.519	.855	.287	.958
V18, F1	.514	.858	.530	.848	.475	.880
V19, F3	.669	.743	.629	.778	.659	.752
V20, F2	.477	.879	.488	.873	.429	.903
V21, F1	.673	.739	.677	.736	.673	.739

Table 12 (continued)

**Standardized Factor Loadings and Residuals with INDCOL-SRS  
by Total Sample and Gender**

<b>Parameter</b>	<b>Total Sample</b>		<b>Females</b>		<b>Males</b>	
	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>
V22, F2	.567	.824	.503	.864	.548	.837
V23, F3	.526	.850	.539	.842	.486	.874
V24, F4	.586	.811	.467	.884	.620	.784
V25, F1	.431	.902	.392	.920	.483	.876
V26, F3	.562	.827	.479	.878	.608	.794
V27, F4	.309	.951	.265	.964	.318	.948
V28, F2	.593	.805	.610	.792	.537	.843
V29, F4	.285	.959	.332	.943	.312	.950
V30, F3	.710	.704	.680	.733	.685	.728
V31, F4	.346	.938	.470	.833	.298	.954
V32, F1	.304	.953	.305	.952	.296	.955
V33, F5	.693	.721	.658	.753	.733	.680
V34, F5	.569	.823	.534	.846	.596	.803
V35, F5	.742	.670	.712	.703	.755	.655
V36, F5	.534	.845	.449	.893	.607	.795
V37, F5	.780	.626	.770	.638	.769	.640
V38, F5	.526	.851	.486	.874	.508	.862
V39, F5	.731	.683	.713	.702	.723	.691
V40, F5	.457	.889	.424	.906	.464	.886
V41, F5	.649	.760	.625	.781	.659	.753

Table 12 (continued)

**Standardized Factor Loadings and Residuals with INDCOL-SRS  
by Total Sample and Gender**

<b>Parameter</b>	<b>Total Sample</b>		<b>Females</b>		<b>Males</b>	
	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>	<b>Factor loading</b>	<b>Residual</b>
V42, F6	.604	.797	.574	.819	.606	.795
V43, F6	.648	.762	.583	.812	.717	.697
V44, F6	.610	.793	.619	.785	.578	.816
V45, F6	.522	.853	.518	.856	.542	.840
V46, F6	.615	.788	.570	.822	.646	.764
V47, F6	.499	.867	.526	.850	.475	.880
V48, F6	.638	.770	.642	.766	.655	.755
V49, F6	.587	.809	.543	.840	.604	.797
V50, F6	.705	.709	.674	.739	.717	.697
V51, F7	.537	.843	.570	.822	.497	.868
V52, F7	.644	.765	.662	.750	.636	.771
V53, F7	.677	.736	.700	.714	.653	.758
V54, F7	.663	.748	.653	.758	.690	.724
V55, F7	.692	.722	.693	.721	.701	.714
V56, F7	.667	.745	.691	.723	.645	.764
V57, F7	.747	.665	.747	.665	.758	.652
V58, F7	.789	.614	.788	.616	.805	.594
V59, F7	.658	.753	.657	.754	.677	.736

Table 13

**Observed and Latent Variables in INDCOL-SRS Structural Model**

<b>Label</b>	<b>Item</b>
V1 =	I prefer to be direct and forthright when discussing with people.
V2 =	My happiness depends very much on the happiness of those around me.
V3 =	I would do what would please my family, even if I detested that activity.
V4 =	Winning is everything.
V5 =	One should live ones life independently of others.
V6 =	What happens to me is my own doing.
V7 =	I usually sacrifice my self-interest for the benefit of my group.
V8 =	It annoys me when other people perform better than I do.
V9 =	It is important for me to maintain harmony within my group.
V10 =	It is important to me that I do my job better than others.
V11 =	I like sharing little things with my neighbors.
V12 =	I enjoy working in situations involving competition with others.
V13 =	We should keep our aging parents with us at home.
V14 =	The well-being of my coworkers is important to me.
V15 =	I enjoy being unique and different from others in many ways.
V16 =	If a relative were in financial difficulty, I would help within my means.
V17 =	Children should feel honored if their parents receive a distinguished award.
V18 =	I often do "my own thing."

## Table 13 (continued)

V19 = Competition is the law of nature.

V20 = If a coworker gets a prize, I would feel proud.

V21 = I am a unique individual.

V22 = To me, pleasure is spending time with others.

V23 = When another person does better than I do, I get tense and aroused.

V24 = I would sacrifice an activity that I enjoy very much if my family did not approve of it.

V25 = I like my privacy.

V26 = Without competition, it is not possible to have a good society.

V27 = Children should be taught to place duty before pleasure.

V28 = I feel good when I cooperate with others.

V29 = I hate to disagree with others in my group.

V30 = Some people emphasize winning; I am not one of them.

V31 = Before taking a major trip, I consult with most members of my family and many friends.

V32 = When I succeed, it is usually because of my abilities.

V33 = My goal in life is to acquire as much status, wealth, and power as possible.

V34 = I always put my problems aside so that I can attend fully to the needs of others.

V35 = The best advice I can give to others for living a rewarding life is: "Look out for number one."

V36 = I consider my needs along with the needs of others in order to make decisions which best satisfy the needs of both.

## Table 13 (continued)

- V37 = In today's competitive world, you have to grab for all you can get.
- V38 = Nothing is of greater value than living my life for others.
- V39 = I am in the best position to live a successful and rewarding life when I consider both my needs and the needs of others.
- V40 = Things tend to work out best when I forget about myself and focus my attention on the needs of others.
- V41 = The best measure of a person's success in life is the level of fame and fortune they have achieved.
- V42 = I consider the needs of everyone involved (including my own) before deciding on a course of action.
- V43 = In order to live a truly meaningful life, I must be willing to sacrifice my happiness for the happiness of others.
- V44 = It's a "dog-eat-dog" world out there and my best chance for survival is to "get while the getting is good."
- V45 = If my needs conflict with those of others, I always put their needs first.
- V46 = When individuals are making decisions that affect others, I expect them to take the welfare of other people (including mine) into account.
- V47 = By becoming selfless and totally devoting myself to improving the lives of others, my life will have true meaning and significance.
- V48 = I try to compromise (i.e., seek a middle ground) when my needs conflict with those of others.
- V49 = I consider other people's needs to be more important than my own.
- V50 = If there is something I really want, I'll find a way to get it even if it creates problems for others.
- V51 = I give equal weight to my needs and the needs of other when making life decisions.

**Table 13 (continued)**

- V52 = I maintain a "survival of the fittest" attitude in order to find success in today's competitive world.**
- V53 = When making important decisions, I always consider how my behavior will affect others.**
- V54 = It's a guiding principle in my life to put other people's needs ahead of my own.**
- V55 = I am generally willing to compromise in order to resolve conflicts with others.**
- V56 = Nobody gets ahead in this world by looking out for the needs of others.**
- V57 = Living for and completely devoting myself to others is the best path to a meaningful life.**
- V58 = Money is the main motivating factor in my life.**
- V59 = Things work out best when I consider both my needs and the needs of others.**

- F1 = HI (INDCOL)**  
**F2 = HC (INDCOL)**  
**F3 = VI (INDCOL)**  
**F4 = VC (INDCOL)**  
**F5 = Individualism (SRS)**  
**F6 = Collectivism (SRS)**  
**F7 = Selfless Giving (SRS)**

**Structural Model of INDCOL and Social Representation Scale (Total Sample)**

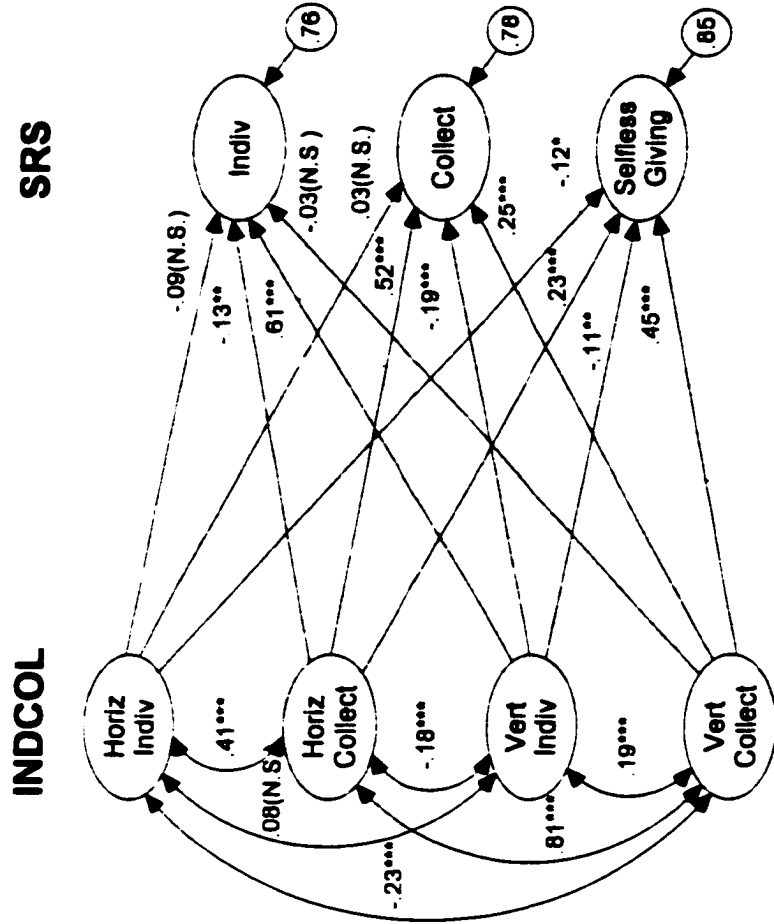


Figure 1 (N = 846) \*p < .05 \*\*p < .01 \*\*\*p < .001

### Structural Model of INDCOL and Social Representation Scale (Females)

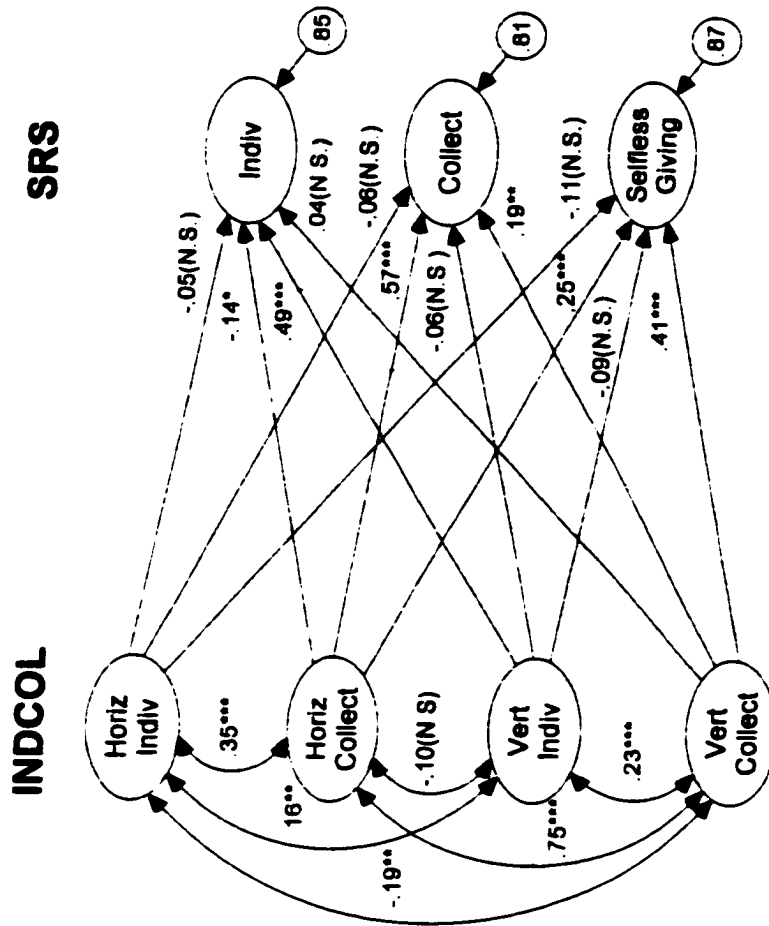
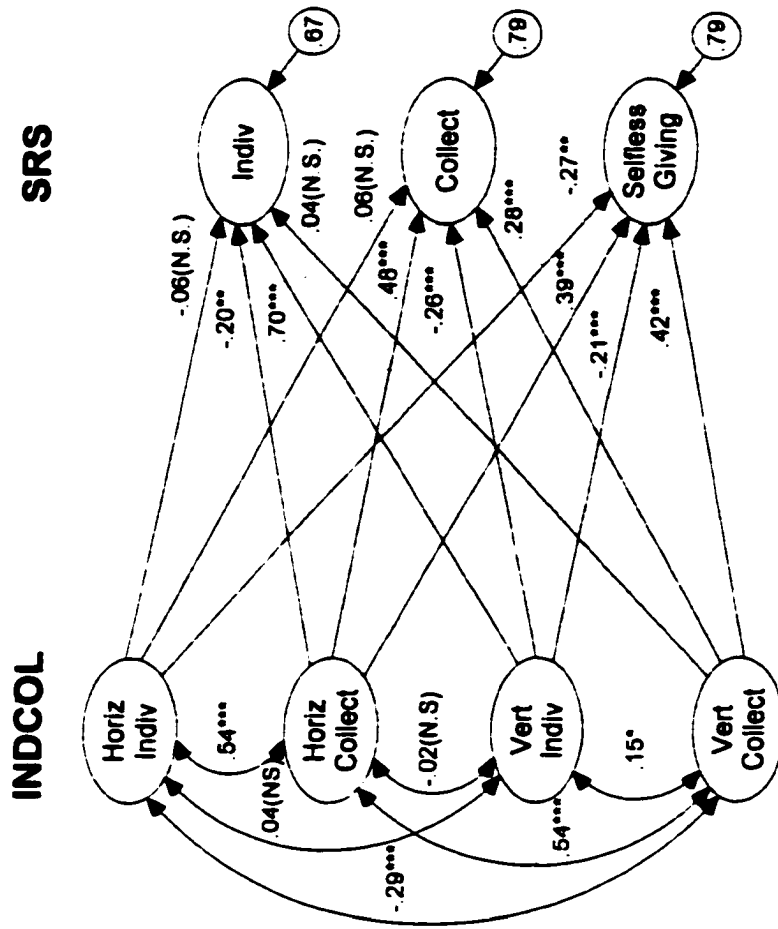


Figure 2 (n = 507) \*p < .05 \*\*p < .01 \*\*\*p < .001

**Structural Model of INDCOL and Social Representation Scale (Males)**



**Figure 3** (n = 339) \*p < .05 \*\*p < .01 \*\*\*p < .001