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Eva G. T. Green, Jean-Claude Deschamps and Dario Páez

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VARIATION OF INDIVIDUALISM AND COLLECTIVISM WITHIN AND BETWEEN 20 COUNTRIES

A Typological Analysis

EVA G. T. GREEN
JEAN-CLAUDE DESCHAMPS
University of Lausanne

DARIO PÁEZ
University of the Basque Country

With data from a 20-nation study ($N = 2,533$), the authors investigated how individual patterns of endorsement of individualist and collectivist attitudes are distributed within and across national contexts. A cluster analysis performed on individual scores of self-reliance (individualist dimension), group-oriented interdependence (collectivist dimension), and competitiveness (individualist or collectivist dimension) yielded a typology of four constrained combinations of these dimensions. Despite the prevalence of a typology group within a given country, variability was observed in all countries. Self-reliant non-competitors and interdependent non-competitors were prevalent among participants from Western nations, whereas self-reliant competitors and interdependent competitors were more common in non-Western countries. These findings emphasize the benefits for cross-cultural research of a typological approach based on combinations of individualist and collectivist dimensions.

Keywords: individualism; collectivism; within-country variation; between-country variation

Individualism and collectivism are undeniably the most popular concepts, both theoretically and empirically, in contemporary cross-cultural psychology. The individualism-collectivism dimension has been used to describe, explain, and predict differences in attitudes, values, behaviors, cognition, communication, attribution, socialization, and self-concepts (for an overview, see Kagitçibasi, 1997; Oyserman, Coon, & Kemmelmeier, 2002). Research on individualism and collectivism frequently differentiates cultural and national groups from each other (Fiske, Kitayama, Markus, & Nisbett, 1998; Hofstede, 1980, 2001; Hui & Triandis, 1986; Markus & Kitayama, 1991; Triandis, 1995). Typically, scholars use individualist traits to characterize people from Western contexts (Western Europe, North America, Australia), whereas non-Western (Asian, South American, African) personalities are described with collectivist characteristics.

Individualism and collectivism are complex constructs and have both been defined in numerous ways (e.g., Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Hofstede, 1980, 2001; Kagitçibasi, 1997; Kim, 1994; Markus & Kitayama, 1991; Oyserman et al., 2002;

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Triandis, 1995, 1996). Typical attributes associated with individualism are independence, autonomy, self-reliance, uniqueness, achievement orientation, and competition. Individualists are portrayed as having control over and taking responsibility for their actions. Collectivism, in turn, is associated with a sense of duty toward one's group, interdependence with others, a desire for social harmony, and conformity with group norms. In this view, behavior and attitudes of collectivists are determined by norms or demands of the ingroup such as extended family or close-knit community.

The variability of individualism and collectivism, however, should not only be studied at the cross-cultural or interindividual level: People may be individualist and collectivist at the same time. The purpose of this article is to explore how different patterns of endorsement of three specific dimensions related to individualism and collectivism on the individual level are distributed within and across national contexts. We used self-reliance as an indicator of individualism and interdependence as an indicator of collectivism. The third dimension, competitiveness, has usually been regarded as an individualist dimension (e.g., Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). This assumption, however, has been questioned in recent research (e.g., Oyserman et al., 2002). We therefore examine empirically the status of competitiveness as an individualist or collectivist dimension. These questions were investigated in a 20-nation study with 2,533 participants.

VARIATION OF INDIVIDUALISM AND COLLECTIVISM WITHIN INDIVIDUALS

Besides the study of differences between countries, it is commonly acknowledged that individualist and collectivist attitudes are not mutually exclusive (Bontempo, 1993; Cha, 1994; Georgas, 1989; Kim, 1994; Kim, Triandis, Kagitçibasi, Choi, & Yoon, 1994; Maisonneuve, 2003; Mishra, 1994; Realo, Koido, Ceulemans, & Allik, 2002; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Sinha & Tripathi, 1994; Triandis, 1995; Triandis et al., 1986). They can, for example, coexist on the individual level. Singelis (1994) demonstrated that individuals have both independent and interdependent self-construals. Moreover, individualist and collectivist attitudes can also be activated as a function of social contexts and social relations (Hui, 1988; Matsumoto, Weissman, Preston, Brown, & Kupperbusch, 1997; see also Fiske, 1991). This line of research shows that individualist relations are common with some people or in particular situations, for example, in business relations, whereas with others the relationship is collectivist, for instance, with family members. Hui (1988) showed variation in individualist and collectivist attitudes in different types of relationships such as with one's spouse, parent, neighbor, or coworker (see also Matsumoto et al., 1997).

These studies suggest that individuals may be characterized by specific combinations of individualist and collectivist attitudes. Some people may be high on individualism and low on collectivism or vice versa. Others, in turn, can be high or low on both. In this research, we study variations of individualism and collectivism within individuals by classifying people into four constrained subgroups defined with specific patterns of individualism and collectivism. We then analyze how these subgroups are distributed across nations.

STUDYING INDIVIDUALISM-COLLECTIVISM DIFFERENCES WITHIN COUNTRIES

Many studies in cross-cultural psychology use nations or ethnic groups as cultural entities, thereby neglecting sources of variation within cultural contexts and treating national cultures as homogeneous and territorially defined units (see Fiske, 2002; Matsumoto,

Kudoh, & Takeuchi, 1996; Morales, Gavia, Molero, Arias, & Paez, 2000; Smith & Bond, 1998; Van de Vijver & Leung, 2000). Yet, failure to consider within-country variation leads easily to an overgeneralization of personality attributes because nations are made up of individuals with very diverse backgrounds and positions in the social structure.

The most frequently reported results of within-country variation of individualism and collectivism concern gender differences. Individualist characteristics have typically been associated with masculinity, whereas collectivist traits have been linked to femininity (Bakan, 1966; Bem, 1974; Gilligan, 1982; Kashima et al., 1995; Lorenzi-Cioldi & Dafflon, 1998; Williams & Best, 1982). Kashima et al. (1995) studied simultaneously between-country and within-country gender differences on individualist, relational, and collectivist dimensions of the self. Their findings show that between-country variation emerged most strongly on individualist self-dimensions, whereas gender differences were predominantly detected for the relational component of the self, women presenting themselves as more emotionally related to others than men.

Within-country differences of individualist and collectivist attitudes have also been studied by comparing different ethnic groups (Coon & Kimmelmeier, 2001; Gaines, Marelich, Bledsoe, & Steers, 1997; Oyserman et al., 2002; Singelis, 1994), regions (Conway, Ryder, Tweed, & Sokol, 2001; Pirttilä-Backman, Kassea, & Ikonen, 2004; Vandello & Cohen, 1999), generations (e.g., Matsumoto et al., 1996; Mishra, 1994), and groups defined by social class, such that people from higher classes are frequently more individualist than people from lower classes (Freeman, 1997; Marshall, 1997; Wink, 1997). Acknowledging within-nation variation is thus essential in cross-cultural comparisons. This study accounts for within-nation variation by focusing on individual-level variation assessed with subdimensions of individualism and collectivism.

SUBDIMENSIONS OF INDIVIDUALISM AND COLLECTIVISM AND THE ROLE OF COMPETITIVENESS

In comparative research, several subdimensions of individualism and of collectivism have been evidenced (Kagitçibasi, 1994, 1997; Morales et al., 2000; Oyserman et al., 2002; Schwartz, 1990; Singelis et al., 1995; Triandis, 1995; Triandis et al., 1986). For example, Triandis et al. (1988) distinguished *distance from ingroups* and *self-reliance with competition* as dimensions measuring individualism. Green (in press) further separated self-reliance from competition. Individualism and collectivism have also been subdivided into horizontal and vertical types (Singelis et al., 1995; Triandis, 1995), where the horizontal aspect underlines equality between group members and the vertical aspect emphasizes hierarchy and competition. Schwartz (1992) has proposed a finer subdivision by differentiating both individual- and culture-level motivational value types that are associated with individualism and collectivism. Individualism is related to intellectual and affective autonomy at the cultural level and to self-direction, stimulation, and hedonism on the individual level. Collectivism, in turn, is related to conservatism at the cultural level and to tradition, conformity, and security at the individual level.

Of particular importance is the status of competitiveness as a subdimension. Results of the Oyserman et al. (2002) meta-analysis demonstrate that North Americans scored higher than participants from Hong Kong and Japan on a scale assessing individualism with personal independence and uniqueness. However, when competitiveness was added to the scale, the difference between North Americans and Japanese disappeared, suggesting that competitiveness is not an individualist dimension (see also Triandis, 1995). In a country-

level analysis of 29 nations, Basabe and Ros (in press) revealed that competitiveness was related to Hofstede's (2001) collectivism and power distance indices (see also Van de Vliert, 1998). Hofstede (1980) himself located competitiveness in his masculinity dimension and not in individualism.

Research has also shown that people compete for scarce resources in economically unfavorable contexts (e.g., Inglehart, 1977, 1990; Sherif, 1967). Scarcity gives rise to competitive value orientations and thus to instrumental individualism aimed at achieving economic success and material well-being (see also Turnbull, 1972). In contexts of affluence, in contrast, other individualist values such as individual freedom, personal development, quality of life, and relational interdependence (see Cross, Bacon, & Morris, 2000) become more important. The so-called postmaterialist value orientation is opposed to a materialist and competitive orientation (see also, Allik & Realo, 2004; Basabe & Ros, in press). In a Taiwanese sample, Yu and Yang (1994), in turn, found that achievement motivation as a form of competitiveness can be driven by individual or collective concerns. These findings support the idea that competitiveness is associated with individualism as well as with collectivism (see also Waterman, 1981). In this research, we will also examine the relationships of individualism and collectivism with competitiveness.

Investigating subdimensions of collectivism, the Oyserman et al. (2002) meta-analysis further shows that North Americans scored lower than other samples on scales emphasizing a sense of duty toward the ingroup, but on items related to relational interdependence, sense of belonging to ingroup, and seeking others' advice, they reported higher scores. For example, Cross et al. (2000) differentiated collectivist group-oriented interdependence (i.e., a sense of duty and ingroup loyalty) from relationship-oriented interdependence (i.e., voluntary interpersonal relatedness). Hofstede (2001) also argues that in individualist countries, people have to acquire social relationships as they are not socially predetermined or ascribed. Relational interdependence is thus not necessarily associated with collectivism (see Fernández, Paez, & González, in press). These observations also qualify the common proposition that individualism is mainly a Western attribute, whereas collectivism is mostly a non-Western feature.

THIS STUDY

We first sought to study patterns of individualism and collectivism within individuals by restricting our analysis to three specific dimensions. We assess how self-reliance (a subdimension of individualism) and group-based interdependence (a subdimension of collectivism) relate to competitiveness (either individualist or collectivist dimension). Individualism and collectivism are broad and complex constructs that cannot be reduced to some of their subdimensions. Hence, this research focuses on how three specific subdimensions relate to each other at the intraindividual level and how such combinations account for variations within and between national contexts.

A typology of individuals was created that distinguishes typical combinations of the three dimensions on the individual level, irrespective of national membership. For this, a cluster analysis was conducted in which individuals were classified into relatively homogeneous groups or clusters on the basis of a dissimilarity matrix. Cluster analysis is appropriate when large numbers of individuals are classified, as is the case in studies involving many nations. For example, Doise, Spini, and Clémence (1998) used this technique in a 35-country study on attitudes toward human rights to distinguish patterns of evaluation of the articles of the Universal Declaration of Human Rights.

Whereas cluster analysis is novel in cross-cultural psychology as a means for structuring individuals' positioning toward individualism and collectivism, this technique has recently attracted renewed interest in personality psychology (Asendorpf, 2002). The more common dimensional, or variable-centered, approach of personality has been questioned because it ignores the organization of traits within an individual. This claim holds for cross-cultural research of individualism and collectivism traits too. Thus, a typological or person-centered approach, based on the very aim of developing a taxonomy from various configurations of traits, has been called for (Asendorpf, 2002; Schnabel, Asendorpf, & Ostendorf, 2002). This strategy completes the dimensional approach studying individualism and collectivism. To our knowledge, this is one of the first studies examining individualism and collectivism from a typological perspective.

Second, we explored within- and between-country variations of the typology distribution in 20 countries simultaneously by means of correspondence analysis. This multivariate technique maximizes the relationship between categorical variables and thus allowed us to study how membership in typology groups was linked to national membership (see Lebart, 1994). In this way, individual- and nation-level differences are accounted for simultaneously (see also Doise et al., 1998).

Although a pan-cultural typology does not allow the observation of culture-specific within-country variation, it is a viable approach for studying the prevalence of fixed types of individuals across nations. We expect that even in seemingly homogeneous student samples, variation in terms of individualism and collectivism would occur within nations.

However, because our analyses pool individuals across countries, the distinction between levels of analysis should be kept in mind. The study of the relationships between self-reliance, competitiveness, and group-oriented interdependence within individuals, within countries, as well as across countries is situated on levels of analysis that are statistically and conceptually independent of each other (Hofstede, 1980; Leung & Bond, 1989; Smith & Bond, 1998; Smith & Schwartz, 1997). On the first pan-cultural level, individual attributes are studied without taking into account the national origin of participants. On this level of analysis, the individual scores of the 2,533 participants from the 20 countries are used, that is, the individual is the unit of analysis. The second level focuses on country-specific characteristics or relationships of measures. Here, individuals within each country are studied separately. The third cross-cultural level investigates aggregate variation across countries. Country means are used on this level of analysis (20 units of analysis). Therefore, before constructing a cross-national typology, the degree of structural equivalence was studied. We assessed the psychometric qualities of the dimensions and verified that they relate to each other in a similar way across levels of analysis (e.g., Van de Vijver & Leung, 1997).

METHOD

PARTICIPANTS AND PROCEDURE

A questionnaire was administered to 2,546 university students in 20 countries (see Table 1). The subsample size of each country varied from 79 to 150 participants.¹ Thirteen participants were discarded due to missing answers. The final sample included 2,533 participants. Fifty-nine percent of participants were female, mean age was 22 years, and the majority of participants were undergraduates in social sciences or psychology. Participants were recruited from local universities where collaborators administered the questionnaire.

TABLE 1
Scores for Competitiveness, Self-Reliance, and Interdependence by Nation (raw data)

Nation	N	Competitiveness			Self-Reliance			Interdependence			Language	GNP per Capita ^a
		M	SD	α	M	SD	α	M	SD	α		
Argentina	150	1.80	.62	.71	1.84	.52	.57	3.14	.47	.61	Spanish	8,950
Belgium	79	1.85	.65	.79	2.17	.52	.63	2.94	.37	.61	French	26,730
Chile	128	1.99	.62	.74	1.88	.50	.64	3.02	.42	.64	Spanish	4,820
China	119	2.65	.69	.64	2.79	.50	.47	2.95	.49	.68	Mandarin	860
Colombia	127	2.49	.74	.77	2.18	.61	.72	3.02	.54	.72	Spanish	2,180
El Salvador	118	2.84	.71	.57	2.01	.56	.54	3.40	.47	.68	Spanish	1,810
France	149	2.28	.75	.79	2.28	.53	.58	2.91	.37	.49	French	26,300
Greece	116	2.19	.68	.70	2.25	.56	.61	3.03	.45	.67	Greek	11,640
Italy	113	2.12	.79	.80	2.21	.59	.72	2.92	.50	.66	Italian	20,170
Lebanon	118	2.95	.72	.64	2.56	.52	.54	3.11	.49	.64	French	3,350
Mexico	150	3.01	.72	.77	2.22	.59	.65	2.86	.48	.58	Spanish	3,700
Peru	120	2.88	.74	.74	2.30	.59	.62	3.14	.47	.59	Spanish	2,610
Portugal	150	2.21	.61	.68	2.02	.53	.63	3.14	.40	.63	Portuguese	11,010
Russia	139	2.83	.69	.66	2.46	.52	.51	2.99	.51	.65	Russian	2,680
Singapore	110	2.04	.64	.77	2.35	.55	.67	3.13	.39	.65	English	32,810
Spain	150	1.85	.56	.71	1.91	.55	.68	3.06	.45	.65	Spanish	14,490
Switzerland	150	1.90	.57	.68	2.22	.56	.68	2.97	.41	.65	French	43,060
Turkey	104	2.79	.69	.76	2.33	.53	.52	2.81	.44	.57	Turkish	3,130
United States	95	2.08	.67	.78	2.07	.59	.76	3.01	.42	.61	English	29,080
Venezuela	148	2.83	.72	.68	2.02	.54	.58	3.11	.51	.66	Spanish	3,480
Total	2,533	2.38	.80	.78	2.19	.59	.66	3.03	.47	.64		12,643

NOTE: Scores are on 4-point scales (1 = totally disagree, 4 = totally agree).
a. Gross National Product (GNP) per capita in USD in 1997.

The national samples were based on the majority ethnic or linguistic group of the country. In multilingual countries, the questionnaire was administered in one of the official languages, the one used in the region of the collaborating university. For example, in Switzerland and in Belgium, the questionnaires were administered in French-speaking universities. In Spain, data were collected in several parts of the country. In Lebanon, the study was conducted in a French-speaking school, but participants were Lebanese.

MEASURES

Participants indicated their attitudes concerning competitiveness, self-reliance, and interdependence on a 4-point scale ranging from 1 (*totally disagree*) to 4 (*totally agree*) (see Table 1). Four items measuring competitiveness such as “Winning is everything” and six measuring self-reliance such as “Only those who depend on themselves get ahead in life” were obtained from the Self-Reliance with Competition subscale from the Triandis et al. (1988) scale. Previous research has demonstrated the adequacy of separating self-reliance from competitiveness (Green, in press; see also Yu & Yang, 1994). Six group-oriented interdependence items (e.g., “It is important for me to maintain harmony within my group”) were obtained from the Singelis (1994) scale.²

Back-translation. The scales were originally created in English but were translated with the back-translation method (Brislin, 1986) into the official language of the respective universities. Initially, the questionnaire was translated into Spanish by a bilingual social psychologist, then back to English by a team of researchers. The Spanish version was written in standard Castilian, in order to be comprehensible in all of Spain and Latin America. The French and Mandarin versions were back-translated based on both the English and Spanish questionnaires, the Italian questionnaire was back-translated from English and French, and the Portuguese and Turkish versions were based on both the Spanish and the French versions. The Greek questionnaire was translated solely on the basis of the French version and the Russian one only from the English version. The translations were done either by bilinguals or individuals who were fluent in both languages and had lived several years in the target country. Moreover, the final translated versions were examined carefully by the local research team administering the questionnaire, and in the case of the French and Spanish translations, by the native-speaking second and third author, respectively.

Structural equivalence. Overall, the internal consistencies of the three scores were moderate, but adequate, when calculated over pooled participants as well as within countries. For self-reliance, however, scale reliability remained modest in some countries (see Table 1). To the extent that low reliabilities are a typical shortcoming in cross-cultural research on individualism and collectivism (Singelis et al., 1995), the reliability coefficients did not vary much across countries. Moreover, principal components analyses with both VARIMAX and Oblimin rotations within each country revealed three factors separating competition, self-reliance, and interdependence items. Because equivalence of scales across nations was considered sufficient, competitiveness, self-reliance, and interdependence scores were computed.

Next, the equivalence of relationships between the three dimensions was studied on the pan-, cross-, and within-cultural level. The pan-cultural (2,533 individuals as units of analysis) and cross-cultural (20 countries as units of analysis) correlations (Leung & Bond, 1989) between competition and self-reliance were positive ($r = .38, p < .001$, for pan-cultural and

$r = .49, p < .05$, for cross-cultural), and the same pattern was revealed within all 20 nations (correlation coefficients ranged from .23 to .61), only in Venezuela this correlation was not statistically significant. The pan-cultural and cross-cultural correlations of self-reliance and interdependence were negative ($r = -.25, p < .001$, and $r = -.33$, ns), although not significant in the cross-cultural analysis. This pattern was replicated within 17 nations (correlation coefficients ranged from $-.15$ to $-.45$), only in the United States, Singapore, and Turkey, this correlation was not significant. Finally, competition and interdependence had a weak and marginally significant negative pan-cultural correlation ($r = -.04, p = .07$) and did not correlate in the cross-cultural analysis ($r = .05$, ns). Competition and interdependence were uncorrelated in 11 out of 20 nations; this correlation was marginally positive in El Salvador and Turkey; marginally negative in Chile, Switzerland, Russia, and Greece; and negative in Singapore, Italy, and Lebanon.

The within-country correlations remained the same when controlling for self-reported length of parents' education. In line with previous studies on the effect of socioeconomic status (e.g., Marshall, 1997), the length of fathers' education had a negative relationship with interdependence ($\beta = -.06$) and mothers' education had a marginally positive link with self-reliance ($\beta = .04$), although the effect sizes were negligible ($\Delta R^2 < .003$). Education level did not have an effect on the other measures. It is important that after partialling out the effect of parents' education, the residual scores of competitiveness, self-reliance, and interdependence revealed a ranking of nations identical to that of the raw scores. This finding provides evidence that the relative socioeconomic differences of participants are not confounded with cross-national variation.

Overall, the similarity of pan-cultural, cross-cultural, and within-country correlations indicated equivalency of relationship and patterning effect of the measures (Leung & Bond, 1989), allowing the data to be pooled for a pan-cultural cluster analysis. Within-subject standardization of scores was carried out to account for response bias (Leung & Bond, 1989; Van de Vijver & Leung, 1997; see also Green, 2003). Although eliminating response bias may remove valid cross-national differences, leaving bias untreated can cause misattribution of artifactual variation (Smith & Schwartz, 1997). Analyses were thus carried out on both standardized and raw scores (Van de Vijver & Leung, 1997).

RESULTS

First, to examine variability of patterns of individualism and collectivism at the intra-individual level, a typology was created by means of cluster analysis. In the next step, to study within-nation variability, distributions of typology groups within countries were compared. Finally, a correspondence analysis was carried out to observe the relationships between typology groups and countries.

TYPOLOGY

A K-means cluster analysis with an iterative classification procedure was conducted to group the participants as a function of their attitudes toward competitiveness, self-reliance, and interdependence. This procedure categorized participants (without taking into account national membership) by maximizing dissimilarity, in terms of Euclidean distances, between categories and similarity within categories. A solution with four clusters was retained due to its interpretability with raw as well as with standardized data.

TABLE 2
Mean Scores for Competitiveness, Self-Reliance, and Interdependence by
Typology Obtained in Cluster Analysis (standardized data in parentheses)

	Groups			
	<i>Self-Reliant Competitors</i>	<i>Interdependent Competitors</i>	<i>Self-Reliant Non-Competitors</i>	<i>Interdependent Non-Competitors</i>
Competitiveness	3.38 _a (.00 _a)	2.95 _b (-.37 _b)	2.07 _c (-1.16 _c)	1.62 _d (-1.63 _d)
Self-reliance	2.88 _a (-0.51 _a)	1.93 _c (-1.39 _c)	2.51 _b (-0.74 _b)	1.69 _d (-1.51 _d)
Interdependence	2.84 _c (-0.68 _c)	3.28 _a (-.06 _a)	2.80 _c (-0.46 _b)	3.18 _b (-0.05 _a)
<i>n</i>	480 (409)	584 (643)	692 (690)	777 (791)

NOTE: For raw data, scores are on 4-point scales (1 = *totally disagree*, 4 = *totally agree*). Means in the same row that do not share subscripts differ at $p < .001$ in the Scheffé comparison.

The means of competitiveness, self-reliance, and interdependence in the four groups are presented in Table 2. The first group was named *self-reliant competitors*, as they had the highest score on self-reliance as well as on competitiveness. The second group, *interdependent competitors*, had a high score on competitiveness but not on self-reliance. Moreover, their score on interdependence was high, illustrating that endorsement of competitiveness and interdependence can coexist. *Self-reliant non-competitors*, the third group, scored high on self-reliance and also higher on self-reliance than on competitiveness. For *interdependent non-competitors*, the fourth group, both of these scores were the lowest of all four groups. However, their mean score for interdependence was high. Participants were grouped in the clusters as follows: 30.7% (31.2% for standardized data) as interdependent non-competitors, 27.3% (27.2%) as self-reliant non-competitors, 23.1% (25.4%) as interdependent competitors, and 18.9% (16.1%) as self-reliant competitors.³

Because cluster analysis maximizes the differences between groups, group means differed strongly on all three measures. Although the F values as such are not informative, their relative sizes as well as effect sizes can be compared. The differences were the greatest for competitiveness, $F(3, 2529) = 2443.47$, $p < .001$, $\eta^2 = .74$, and $F(3, 2529) = 2387.50$, $p < .001$, $\eta^2 = .74$, for raw and standardized data, respectively, and self-reliance, $F(3, 2529) = 1276.46$, $p < .001$, $\eta^2 = .60$, and $F(3, 2529) = 929.82$, $p < .001$, $\eta^2 = .52$, for raw and standardized data, respectively. All four groups described themselves as interdependent (i.e., all means were superior to 2.5 on raw data, testing against scale midpoint all t values $p < .001$). Smaller differences were observed for this variable but were still statistically highly significant, $F(3, 2529) = 194.24$, $p < .001$, $\eta^2 = .19$ and $F(3, 2529) = 307.53$, $p < .001$, $\eta^2 = .27$ for raw and standardized data.

To ensure validity of the typology across nations, cluster analyses were carried out separately in geographically or linguistically defined regions: South and Central America (Argentina, Chile, Colombia, El Salvador, Mexico, Peru, Venezuela), French-speaking Europe (France, Switzerland, Belgium), Southern Europe (Spain, Portugal, Italy, Greece), East Asia (China, Singapore), and the Middle East (Lebanon, Turkey). Russia and the United States were analyzed individually. The four typology groups were replicated across regions and approximately corresponded to the classification of participants in the original cluster analysis ($kappa$ values ranged from .54 to .83). However, in the United States and in Russia, this classification did not replicate well, presumably due to small sample sizes (Schnabel et al., 2002). Nevertheless, the mean $kappa$ value across all regions was .67, a level of accept-

able replication (Schnabel et al., 2002). A second replication of cluster types was sought by classifying the nations in terms of wealth. Based on GNP per capita (see Table 1), four groups were created: high income (Belgium, France, Singapore, Switzerland, United States), high-middle income (Argentina, Greece, Italy, Portugal, Spain), middle income (Chile, Colombia, Lebanon, Mexico, Peru, Russia, Turkey, Venezuela), and low income (El Salvador, China).⁴ The clusters generated within all four groups replicated the original cluster solution (mean kappa = .69). This result supports the conjecture of sufficient equivalence within categories of nations.

A cross-tabulation between the typologies with raw and standardized data showed a strong overlapping, Cramer's $V = .77$; $\chi^2(9) = 4553.50$, $p < .001$. Consequently, for the remaining analyses in this article, only the results for raw data are presented.

DISTRIBUTION OF TYPOLOGY WITHIN NATIONS

For all 20 countries, distribution of participants in four groups of the typology is presented in Figure 1. In most European and Western countries, self-reliant non-competitors were the most frequent group, followed by interdependent non-competitors. However, participants from Spain, Portugal, Belgium, and the United States were most often classified as interdependent non-competitors, and then as self-reliant non-competitors or as interdependent competitors. Russian participants were mostly self-reliant competitors and interdependent competitors.

Participants from Argentina and Chile were most often in the group of interdependent non-competitors. Columbians were self-reliant non-competitors, interdependent competitors, or non-competitors. Participants of other Central and South American countries were mostly classified as interdependent competitors, but also as self-reliant competitors.

In the Middle East, Lebanese participants were mostly self-reliant competitors and Turkish participants were self-reliant non-competitors and competitors. In Eastern Asia, whereas Chinese participants were mostly self-reliant non-competitors and competitors, Singaporeans were self-reliant non-competitors and interdependent non-competitors.

LINKING THE TYPOLOGY TO NATIONS: CORRESPONDENCE ANALYSIS

A chi-square test revealed that the relationship between the typology and national affiliations was highly significant, $\chi^2(57) = 865.10$, $p < .001$. A correspondence analysis was carried out next to study in more detail the relationship between the four typology groups and the 20 countries. This method analyzes the association between two or more categorical variables by representing the categories of the variables as points within a space (Clausen, 1998). "Correspondence analysis can be considered as a special case of multidimensional scaling, where the dissimilarities are quantified using the chi-square distance" (Blasius, 1994, p. 42). Typology and nations were active variables that define the dimensions, and gender was a supplementary variable that does not contribute to inertia (explained variance) but provides additional information for interpretation (Clausen, 1998; Doise, Clémence, & Lorenzi-Cioldi, 1993; Greenacre, 1993).⁵

The first two dimensions representing 9.7% and 7.4% of total inertia are displayed in Figure 2.⁶ Typology groups and countries are depicted on this two-dimensional space. The first dimension opposed self-reliant competitors and interdependent competitors (i.e.,

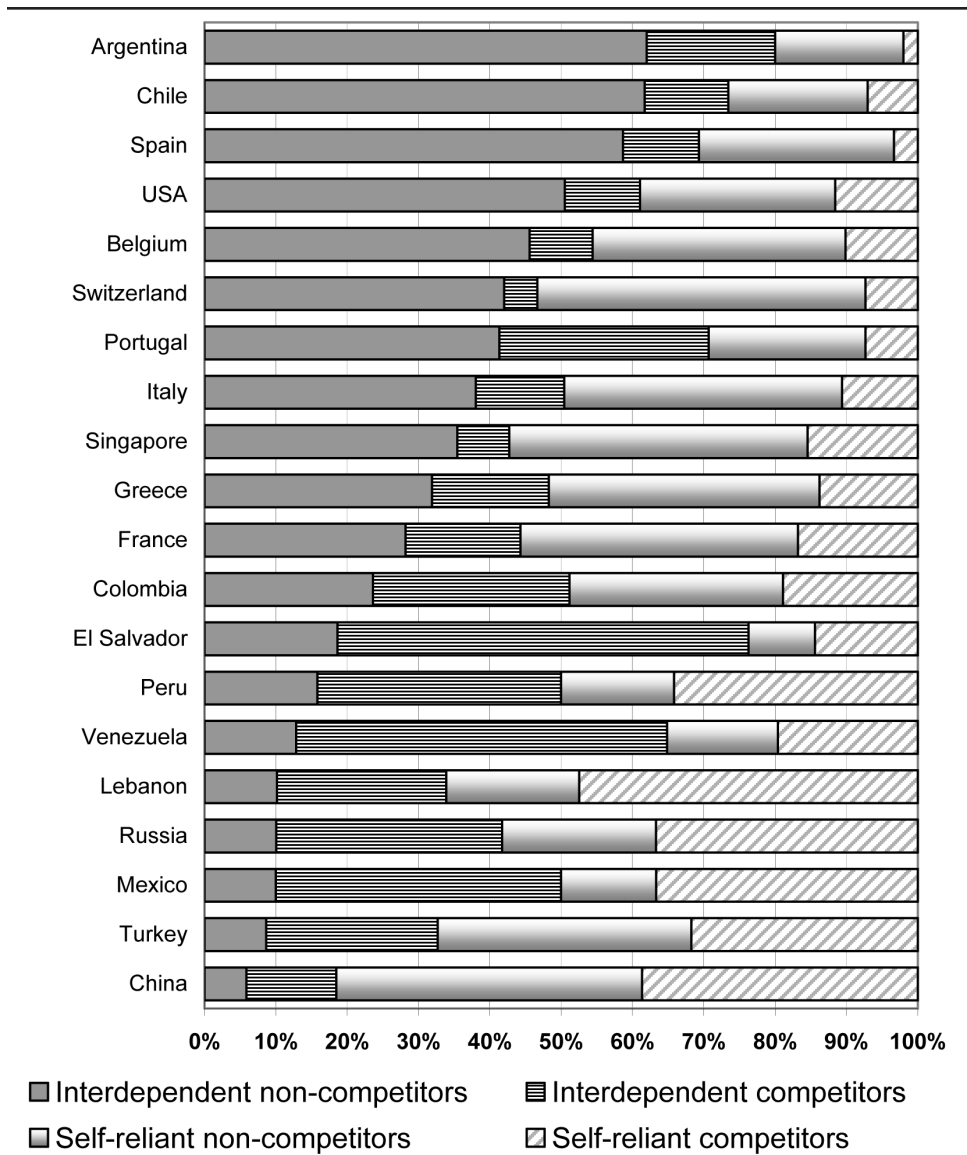


Figure 1: Distribution of Typology by Nation, Raw Scores
 NOTE: Ordered as a function of decreasing proportion of interdependent non-competitors.

groups high on competitiveness) to interdependent non-competitors, and to a lesser extent to self-reliant non-competitors (i.e., groups low on competitiveness). Similarly, competitive nations (Mexico, Lebanon, Russia, Venezuela, and Peru) were distinguished from less competitive nations (Spain, Argentina, and Chile) on this dimension. Although only Mexico, Lebanon, Spain, and Argentina had contributions above the mean level on this dimension, the positions of the other countries were consistent with the interpretation that higher levels of competition were opposed to lower levels. On the second dimension, self-reliant non-

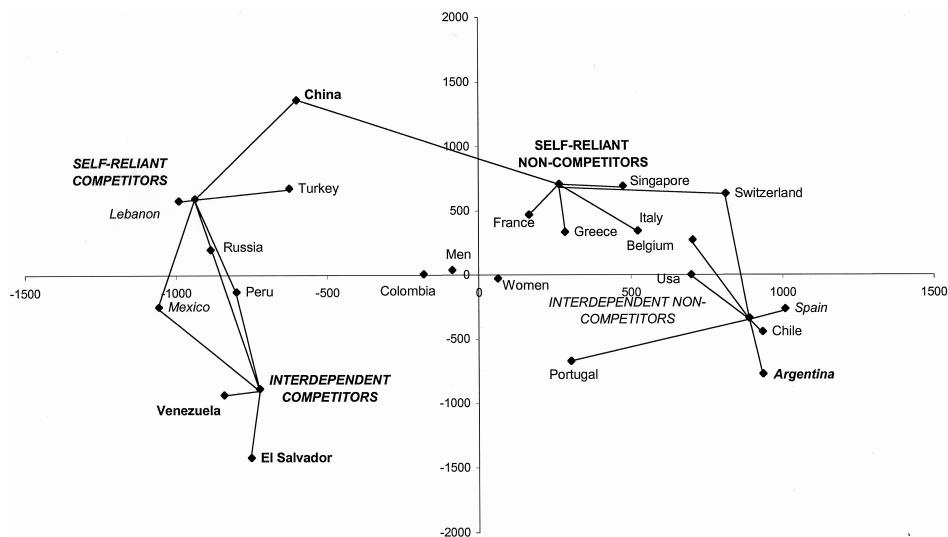


Figure 2: Correspondence Analysis Between Nations and Typology, Raw Scores

NOTE: Italics indicate above mean contribution on first dimension, bold on second dimension. Lines indicate prevalence of typology group within a nation, $\chi^2(1) > 3.84$, $p < .05$.

competitors and competitors were opposed to interdependent competitors and non-competitors. Hence, individualism and collectivism were contrasted on this second dimension. On this dimension, China, Lebanon, Turkey, Singapore, Switzerland, and France were separated from El Salvador, Venezuela, Argentina, and Portugal. Colombia was located at the center of the factorial space, indicating that it did not contribute to the definition of either of the two dimensions. Men and women were also located in the center, indicating that gender did not qualify the interpretation of the dimensions.⁷

Prevalence of typology groups in countries can also be established by observing chi-square contributions of category modalities. This calculation is based on two-by-two contingency tables where each typology group is crossed with each country (4×20 tables), $\chi^2(1) > 3.84$, $p < .05$, indicating statistically significant associations (Cibois, 1984). Significant links show the prevalence of a typology group over others in a nation but do not imply causality. They are depicted as lines in Figure 2 and show that countries were coherently organized in terms of geographic and economic criteria. The affluent Western countries and Singapore were located close to each other, the most common type for this category being self-reliant non-competitors. However, interdependent non-competitors were most common in Belgium, the United States, Spain, and Portugal, as well as in relatively affluent South American nations. Less affluent South and Central American nations were grouped together. Interdependent competitors, and to some extent self-reliant competitors, were prevalent in this region. Finally, Turkey, Lebanon, and Russia were located close to each other and had a prevalence of self-reliant competitors. China was associated with self-reliant competitors and non-competitors.

DISCUSSION

TYPOLOGY OF INDIVIDUALIST AND COLLECTIVIST DIMENSIONS

This study addressed simultaneous within- and between-country variation of individualism and collectivism with measures of self-reliance, group-oriented interdependence, and competitiveness. A cluster analysis evidenced four combinations of individualism and collectivism: self-reliant competitors, self-reliant non-competitors, interdependent competitors, and interdependent non-competitors. Self-reliant competitors, representing instrumental individualism, had high scores on both competitiveness and self-reliance, whereas self-reliant non-competitors scored high on self-reliance only. Interdependent non-competitors expressed high scores of interdependence but low scores of self-reliance and competitiveness. Interdependent competitors, in turn, were high on both interdependence and competitiveness. Thus, competitiveness, despite its apparent individualist character, coexists with individualist as well as with collectivist dimensions within individuals. Although a pan-cultural typology does not capture country-specific variation (e.g., Leung & Bond, 1989), we were able to replicate the typology within different regions.

Our typology can also be interpreted in light of the distinction between vertical and horizontal individualism and collectivism (Singelis et al., 1995; Triandis, 1995). Vertical individualism is associated with competitiveness and therefore parallels self-reliant competition, whereas vertical collectivism is analogous to interdependent competition. Horizontal individualism resembles self-reliant non-competition, and horizontal collectivism is akin to interdependent non-competition. Horizontal individualism has nevertheless a somewhat different focus from self-reliant non-competition as it emphasizes individual uniqueness and equality instead of self-reliance.

Individualism and collectivism constructs have commonly been treated as dimensions, whereas a typological approach, studying patterns of coexistence of individualism and collectivism, has heretofore not been used in cross-cultural research. Although typologies are convenient for describing and summarizing patterns of several attitudes or traits under one label, they have less predictive power than the dimensions from which they are constructed (Costa, Herbst, McCrae, Samuels, & Ozer, 2002; Hofstee, 2002). This shortcoming is not of great consequence for this study because our aim was to observe variation of a fixed set of types across nations.

TYPOLOGY ACROSS NATIONS

We found that despite the prevalence of a given typology group within a country, variability was observed in all countries. A correspondence analysis opposed high competitiveness (self-reliant competitors and interdependent competitors) to low competitiveness (interdependent non-competitors and self-reliant non-competitors) on the first dimension, and individualism (self-reliant competitors and non-competitors) to collectivism (interdependent competitors and non-competitors) on the second dimension. Moreover, supporting and generalizing the conclusions by Oyserman et al. (2002), the correspondence analysis and chi-square contributions showed that whereas self-reliance was prevalent in affluent and Western countries, competition was not. Interdependent non-competition was the most frequent type found in Portugal, Spain, Belgium, and the United States as well as the wealthier South American nations, whereas interdependent competition or self-reliant competition was dominant among people from less affluent South and Central American countries. Self-

reliant competition was most common among individuals from Lebanon, Russia, Turkey, and China (together with self-reliant non-competition in China).

In general, the correspondence analysis grouped together nations that were geographically close. For example, South American countries were located near each other. When the grouping of nations was not geographically determined, the proximity could be interpreted in terms of the economic context of the countries. This said, one must bear in mind that the prevalence of a typology group in a nation does not warrant firm conclusions about general cross-cultural differences.

Overall, results concerning cross-cultural differences must be interpreted with caution if relying solely on the factorial space revealed by the correspondence analysis. Correspondence analysis is an exploratory method that defines the general structure by graphically summarizing a contingency table, but not the distances between the typology groups and the countries (Clausen, 1998; Greenacre, 1993). Thus, the two sets of points are not directly comparable with respect to each other. Observation of chi-square contributions (Cibois, 1984) as well as distributions of typology classes within countries nevertheless supported our interpretation of the correspondence analysis.

COMPETITIVENESS: INDIVIDUALISM OR COLLECTIVISM?

Our findings suggest that competitiveness can be associated with both individualism and collectivism because it appeared combined with both self-reliance and group-oriented interdependence. The combination of competitiveness and self-reliance, illustrated with the category of self-reliant competitors, was frequently found among individuals from fairly poor countries. The combination of competitiveness and interdependence, as defined in the category of interdependent competitors, was common in less affluent Latin American countries.

An interpretation of the predominance of competitive goals in collectivist countries is that competitiveness may be motivated not only by individual but also by social and collective concerns (Yu & Yang, 1994). This could be especially true for interdependent competitors. Interdependence can therefore be compatible with competition and achievement motivation—but this is done for the group one feels attached to and whose well-being one is concerned about, for example, family, close-knit community, or the corporation one works for (e.g., Fyans, Salili, Maehr, & Desai, 1983; Niles, 1998; Phaet & Claeys, 1993).

The status of competitiveness can also be studied at the country level. Analyzing the same data set as the one used in this study but including more countries, Basabe and Ros (in press) correlated country-level competitiveness and self-reliance dimensions (Green, in press) with Hofstede's (2001) individualism and power distance indices and Schwartz's (1994) intellectual and affective autonomy and hierarchy indices. They reported that whereas individualism as well as intellectual and affective autonomy were negatively related to competitiveness, power distance had a positive relationship. Hierarchy, in turn, was positively correlated with self-reliance. In complementing this analysis, we also found that Hofstede's masculinity index correlated with self-reliance ($r = .47, p < .05$). When controlling for power distance, the relationship between individualism and competitiveness disappeared ($r = -.22, ns$). Thus, the first dimension of our correspondence analysis can also be interpreted as opposing high to low power distance nations.

It is necessary to qualify the arguments based on national affluence and poverty because students, the participants of this study, are hardly representative of the general population. Therefore, only limited conclusions can be drawn to the entire populations of the countries under scrutiny (Ongel & Smith, 1994; Van de Vijver & Leung, 2000). Furthermore, even

among students within national contexts, the discrepancies in terms of social status may be considerable. Some individuals in wealthy countries have only limited resources, whereas in poor countries, some individuals may be very affluent. It is likely that students from poor countries are part of the elite in their countries (see also Smith & Bond, 1998). They are thus not directly or at least less concerned about the scarcity prevailing in their countries. These relatively privileged persons presumably also have more possibilities to be in touch with the Western world and its individualist values (Fiske, 2002; see also Smith & Bond, 1998). The disparities of wealth are often more pronounced in poor countries and the living conditions in general are harsher than in wealthier nations. Nevertheless, when controlling for length of parents' education, considered a proxy of socioeconomic status, we found that the competitiveness, self-reliance, and interdependence scores and rankings of nations remained identical, suggesting that cross-national variation was not due to socioeconomic differences of samples.

CONCLUSION

The analysis of individualism and collectivism in 20 countries demonstrated that even in markedly homogeneous student samples, within-country variation exists. Individuals endorsed different combinations of individualist and collectivist dimensions. But because individualism and collectivism cannot be reduced to the three dimensions under scrutiny in this study, research employing a larger range of dimensions is needed to determine more comprehensive typologies. Future studies should also address this question in a wider range of national samples to gain better understanding of this variation. Once the antecedents have been determined, the effect of types of individualism and collectivism on other attitudes and behavior can be studied. In any case, the use of typologies is a strategy to account for within-nation variation. Accounting for variation at different levels is therefore a way to get a more accurate picture of cross-cultural differences.

NOTES

1. Twenty-nine countries were included in the original sample. To ensure valid comparisons, Ghana, Guatemala, Nigeria, and Taiwan were removed from these analyses as less than 50 participants were available for each country. Iran, Germany, Bolivia, Brazil, and Panama were omitted from the analyses due to structure inequivalence. Although reliability coefficients were often similar to those in the countries remaining in the sample, factor analyses did not reveal identical structures. Nevertheless, the results remained identical when the five countries were included in the analyses presented in this article.

2. Due to unacceptable reliabilities, the rest of the subscales from Triandis et al. (1988) and Singelis (1994) were not used.

3. Initially, a three-group solution was also extracted. This solution did not include the self-reliant non-competitors group. Apart from omitting the self-reliant non-competitors, this solution resembled the four-group solution. The advantage in the four-group solution is that the group size does not vary a lot.

4. This grouping of countries was based on the World Bank (2001) income classification distinguishing high-, middle-, and low-income countries. We added a high-middle income class because the high-income nations were overrepresented in our sample.

5. The presented analysis was conducted with TRIDEUX software (Cibois, 1984, 2002) specialized in correspondence analysis. This program separates active and supplementary variables and indicates contributions of each category modality. HOMALS- and CATPCA-analyses in SPSS 11.5 revealed almost identical factorial patterns.

6. The total number of extracted dimensions is determined by subtracting 1 from the number of modalities in the active variable with the least modalities (here with 20 countries and 4 typology groups: $4 - 1 = 3$). The third dimen-

sion accounted for 5.8% of the inertia and was not interpreted. The percentage of total inertia accounted for by the first two factors may also seem low. However, in correspondence analysis as conducted with TRIDEUX, the number of dimensions used to calculate total inertia is equal to the number of modalities of active variables entered in the analysis subtracted by 1 (here $24 - 1 = 23$). According to this approach, useful dimensions for interpreting the factorial space explain a proportion of inertia that is higher than the average proportion (determined by $100\% / k$, where k is the total number of dimensions; in our case, $100\% / 23 = 4.3\%$). The first factor explained twice the average proportion and the second factor, 1.5 times. In an alternative calculation (e.g., in ANACOR SPSS 11.5; see Clausen, 1998), the extracted factors represent total inertia. With this calculation, the first two factors accounted for 68% and 26% of total inertia.

7. However, ANOVAs revealed that men were more competitive ($M = 2.50, SD = .82$) and self-reliant ($M = 2.25, SD = .60$) than women ($M = 2.30, SD = .77$, and $M = 2.16, SD = .58$), $F(1, 2531) = 41.57, p < .001, \eta^2 = .02$, and $F(1, 2531) = 15.65, p < .001, \eta^2 = .01$. Women ($M = 3.06, SD = .47$), in turn, were more interdependent than men ($M = 3.01, SD = .47$), $F(1, 2531) = 6.75, p < .01, \eta^2 = .00$. Nevertheless, observation of means and effect sizes suggests that these differences are not substantial.

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Eva G. T. Green received her Ph.D. at the University of Lausanne, Switzerland. After a postdoctoral stay at the University of California, Los Angeles, she is currently a visiting research fellow at Utrecht University, funded by the Swiss National Science Foundation. Her research interests include individualism and collectivism, racism, immigration attitudes, and ethnic identity.

Jean-Claude Deschamps is a professor of social psychology at the School of Social and Political Sciences, University of Lausanne, Switzerland. He has studied social identity and intergroup relations, causal attribution, and social representations.

Dario Páez is a professor of social psychology at the University of the Basque Country, San Sebastian, Spain. He has done research on social identity, emotions and health, collective memory, and social representations.