

Prosocial to Egoistic Enculturation of Our Children: A Climato-Economic Contextualization

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Abstract

Are altruistic, cooperative, apathetic, and egoistic cultures passed on from generation to generation in nongenetic ways? A society-level analysis of data from the most recent World Values Surveys showed that adults in increasingly demanding cold or hot climates value cooperative enculturation of children to the extent that their society is richer, but egoistic enculturation to the extent that their society is poorer. These results refine the climatic demands–resources theory of prosociality, which posits that (a) humans in more demanding—colder or hotter—climates find it more difficult to satisfy homeostatic needs for thermal comfort, nutrition, and health; (b) increasingly demanding climates matched by wealth-based resources and availability of homeostatic goods produce more prosocial cultures; and (c) increasingly demanding climates unmatched by wealth-based resources and availability of homeostatic goods produce less prosocial cultures.

Human culture is learned from the previous generation and taught to the next “with an obstinacy that is often underestimated” (Hofstede, 2001, p. 3). This process of enculturation can, therefore, be defined as the collective programming of the mind that distinguishes the members of one society from members of another. One of the most basic mental programs that children in a society must learn is prosociality—the quality or

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state of being benevolently concerned about the other's goals, sometimes even at the expense of selfish concern for one's own goals (Deutsch, 1973; Eisenberg & Mussen, 1989; Schroeder, Penner, Dovidio, & Piliavin, 1995; Van Lange, Otten, De Bruin, & Joireman, 1997). As elaborated below, this theory-based definition implies that prosociality can be motivated by both self-serving desires and unselfishness—the quality or state of having no concern for one's own goals. Nevertheless, research into the fundamental difference between prosociality and unselfishness is virtually nonexistent. Breaking new ground, distinct combinations of prosocial and unselfish concern and enculturation will be highlighted in the study to be reported here.

Considerable cross-cultural differences exist in the degrees to which prosociality and unselfishness play a part in daily life (Bierhoff, 2002; Kabasakal & Bodur, 2004; Schroeder et al., 1995; Van de Vliert, Huang, & Levine, 2004). Viewed from the perspective of enculturation, adults tend to encourage children to value and practice both prosociality and unselfishness in Denmark and Venezuela, prosociality rather than unselfishness in Moldova and Spain, unselfishness rather than prosociality in Montenegro and Pakistan, and neither prosociality nor unselfishness in Algeria and Romania (Inglehart, Basáñez, Díez-Medrano, Halman, & Luijckx, 2004, variables A35 and A41). This raises the intriguing question, “What drives cross-cultural differences in combinations of prosociality and unselfishness?” We propose a typology of prosocial–unselfish enculturation, discuss the potential impact of the climato-economic context, and present arguments to support our use of society-level analyses of World Values Surveys data to test our hypotheses.

Types of Prosocial–Unselfish Enculturation

The above cross-cultural preferences for mixtures of prosocial and unselfish enculturation are not unprecedented observations. Far from it, individual-level theories of social motives (e.g., McClintock, 1972) and dual conflict management concerns (e.g., Pruitt, Kim, & Rubin, 2004) also treat prosociality and unselfishness as independent constructs. More or less concern for the other's goals and more or less concern for one's own goals appear to have different determinants (Pruitt et al., 2004) and different consequences (Janssen & Van de Vliert, 1996; Van de Vliert, 1997, pp. 92–100). Thus, individual-level theories as well as isomorphic data at national and individual levels support a taxonomy of four distinct types of prosocial–unselfish concern and enculturation.

As mapped out in Figure 1, in the case of altruistic enculturation children are encouraged to learn both prosociality and unselfishness. In the case of cooperative enculturation, they are encouraged to learn prosociality without unselfishness. In the case of apathetic enculturation, they are encouraged to learn unselfishness without prosociality. And in the case of egoistic enculturation, they are encouraged to learn neither prosociality nor unselfishness.

Climato-Economic Contextualization

Entering uncharted territory, we sought to explain cultural differences in altruistic, cooperative, apathetic, and egoistic enculturation with the interplay of two objective contextual circumstances—cold, temperate, or hot climate and collective wealth. The

		Prosocial?	
		Yes	No
Unselfish?	Yes	<i>Altruistic</i>	<i>Apathetic</i>
	No	<i>Cooperative</i>	<i>Egoistic</i>

Figure 1. Four types of prosocial–unselfish concern and enculturation.

most important impetus for this choice of explanatory factors was the recent psychological interest in the relationship between thermal climate and societal culture (House, Hanges, Javidan, Dorfman, & Gupta, 2004, pp. 205–207, 208–215, 259–261, 320–322, 352–353, 418–422, 549–551, 580–581, 638–639). Mapping and explaining linkages between thermal climate and prosocial–unselfish enculturation is an interesting endeavor because atmospheric climates influence entire societies in unobtrusive, unnoticed, and uncomprehended ways.

Climate was combined with societal wealth because, unlike other warm-blooded species, humans have invented money as an extraordinarily ingenious and convenient tool to help them cope with demanding climates. Indeed, around the globe, money is used to compensate colder-than-temperate or hotter-than-temperate climates by satisfying basic needs for thermal comfort, nutrition, and health. This holds true for members from individualistic cultures in Western Europe to collectivistic cultures in East Asia, from feminine cultures in Northern Europe to masculine cultures in Southern Africa, and from democratic cultures in North and South America to autocratic cultures in Central America. All world citizens teach children how to cope with climate and how to use money to do so. These values and practices are taught and learned with the greatest of ease, unaware of their age-long evolution, and with next to no recollection of survival as their ultimate objective. If so, hidden cultural remnants of our climato-economic past may be waiting to be discovered as cultural companions of our climato-economic present. If so, it would be a big leap forward if it could be shown that the prosocial–unselfish enculturation of our children has, at least in part, a solid basis in the climato-economic context. This theoretical point of departure deserves to be discussed in more detail.

Basic homeostatic needs for thermal comfort, nutrition, and health make human life in colder or hotter climates more demanding than life in temperate climates. Colder or hotter climates entail nastier weather, a wider variety of thermoregulatory requirements and adjustments, less amenable vegetation, greater risks of food shortage and

food spoilage, stricter diets, more health problems, and so forth (e.g., Parker, 2000; Parsons, 1993; Sachs, 2000). Acclimatization, i.e., marginal long-term adjustment in anatomy and physiology, is not enough. The primary needs for thermal comfort come with secondary needs for special clothing, housing, cooling or heating devices, household energy, etc. The primary needs for nutrition, including a higher caloric intake in cold climates and the intake of water and salt in hot climates, come with secondary needs for the production, transportation, trade, storage of food, etc. And the primary needs for health come with secondary needs for medications, care and cure facilities, specific employer–employee arrangements, etc.

Societal wealth provides a population with more collective and individual resources to meet the greater needs for thermal comfort, nutrition, and health in a more demanding—colder or hotter—climate. As a rule, homeostatic goods, needed to secure comfort and health, are for sale and have a price. Ready money (cash) and unready money (capital) can buy clothing, housing, refrigerators, heaters, household energy, meals, drinks, kitchenware, medicines, medical treatment, and the like. In higher-income nations, families appear to spend up to 50% of their household income on a wide variety of such homeostatic goods. This figure rises to 90% in lower-income nations (Parker, 2000, pp. 144–147), and in the case of abject poverty in harsh climates, many needs for homeostatic goods cannot be met at all by a majority of the population (United Nations Development Programme, 2003).

These considerations have recently led to the formulation and tentative empirical confirmation of a climatic demands–resources theory of prosociality (Van de Vliert, Huang, & Levine, 2004; Van de Vliert, Huang, & Parker, 2004), which made no distinction between prosocial concern and unselfish concern. According to this theory, increasingly demanding climates matched by wealth-based resources and availability of homeostatic goods produce more basic needs fulfillment, more satisfaction, more control, and more prosocial cultures as a result. By contrast, increasingly demanding climates unmatched by wealth-based resources and availability of homeostatic goods produce less basic needs fulfillment, less satisfaction, less control, and less prosocial cultures as a result. Given the isomorphic nation-level and individual-level support for the existence of the four types of prosocial–unselfish concern and enculturation shown in Figure 1, it would be a great advance if the climatic demands–resources theory of prosociality could be further developed to specify whether better climate-wealth matches produce more altruism, more cooperativeness, less apathy, less egoism, or a combination of these.

Hypotheses Formulation

In the present research, we aimed to rethink, refine, and retest the above demands–resources theory of prosociality on the basis of the following line of reasoning. The bottom line is that, in more demanding climates, apathetic concern and enculturation contribute less to meeting the greater needs for thermal comfort, nutrition, and health than do altruistic, cooperative, or egoistic concern and enculturation. The next presumption is that increases in altruistic, cooperative, and egoistic values and practices are not equally likely under these increasingly cold or hot and demanding

circumstances. Because homeostatic needs for thermal comfort, nutrition, and health are aroused by internal conditions of the human body, and because their fulfillment regulates the maintenance of relatively favorable internal conditions, the link between increasingly demanding climates and increasingly difficult gratification of homeostatic needs has a self-concerned rather than other-concerned nature and impact. Consequently, increasingly demanding climates were expected to produce decreases in unselfish concern and enculturation, thus increases in either cooperative or egoistic concern and enculturation (main downward effect in Figure 1).

Collective wealth complicates this picture. Members of high-income societies, with abundant tangible resources, can afford prosociality and even derive self-esteem from sharing their surplus resources (Bierhoff, 2002; Schroeder et al., 1995). They live on the left side of Figure 1, so to say. In increasingly demanding climates, their prosocial orientation has to be combined with less unselfishness in the form of more cooperativeness rather than more egoism. Thus, for higher-income societies in those harsher climates, we expected the following interactive effect in the cooperative quadrant in Figure 1. Under colder or hotter climatic circumstances, more adults in the child's proximal environments will provide models and give lectures about being considerate of both the self and others.

By contrast, members of low-income societies, with scarce tangible resources, have little choice but to endorse less prosocial values and practices (for large-scale empirical evidence, see Van de Vliert, 2009; Van de Vliert, Huang, & Parker 2004). Living on the right side of Figure 1, they have less surplus resources for altruism and cooperativeness, and additional climatic demands worsen the already painful living conditions by increasing self-centered concern with the gratification of homeostatic needs. Thus, for lower-income societies in increasingly demanding climates, we expected the following interactive effect in the egoistic quadrant in Figure 1. Under colder or hotter climatic circumstances, more adults in the child's proximal environments will provide models and give lectures about looking after one's own interests first.

Recently released data from the 1999–2002 World Values Surveys (Inglehart et al., 2004) enabled us to examine whether the climatic demands–resources theory of prosociality can be refined by taking into account the degree of unselfishness, helping to explain the occurrence of cooperative and egoistic cultures and enculturation (represented in the lower part of Figure 1). Specifically, we tested whether adult members of societies in increasingly demanding climates find it increasingly important that children learn to be cooperative to the extent that these societies are richer (e.g., Canada and Sweden), but find it increasingly important that children learn to be egoistic to the extent that these societies are poorer (e.g., Armenia and Moldova).

Method

Level of Analysis

For two reasons, the climato-economic roots of altruistic, cooperative, apathetic, and egoistic enculturation of children were investigated at the aggregate level of nations. First, “nations are political units with distinctive ecological, historical, political, educational,

legal, regulatory, social, and economic characteristics. As such, they constitute systems and have cultures” (Smith, Bond, & Kağıtçıbaşı, 2006, p. 77). Second, demanding climate and collective wealth are society-level variables, producing differences between rather than within nations. All country-level analyses were also done for females and males separately. Because no sex differences surfaced, we only report the results for the undivided sample.

Sample

Seventy-four nationally representative subsamples of adult interviewees ($M = 1,437$) were included, for which both collective-wealth data and enculturation data were available. The 74 countries represented over 80% of the world’s population. To reduce the impact of biased sampling of nations, each country’s contribution to the regression equations was weighted (w) for the within-continent under-representation of the number of countries over 10,000 km² (Europe, North America, Australia, and New Zealand $n = 38$, $w = 1$; Asia $n = 19$, $w = 2.42$; South America $n = 9$, $w = 2.44$; Africa $n = 8$, $w = 5.87$).

Dependent Variables: Four Types of Enculturation

The perceived importance of altruistic, cooperative, apathetic, and egoistic enculturation was derived from the 1999–2002 World Values Surveys (source: Inglehart et al., 2004; <http://www.worldvaluessurvey.org>). In face-to-face interviews, adults were asked, “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five.” (1 = *important*; 0 = *not important*). The qualities listed were tolerance and respect for other people, unselfishness, independence, hard work and feeling of responsibility, imagination, thrift, determination, religious faith, and obedience. The interviewer gave each quality a code of 1 or 0; interviewees with more than five 1-codes were removed.

We, the three authors, rated each quality on concern for the other’s goals and concern for one’s own goals, and agreed that “tolerance and respect for other people” is the best proxy of prosocial concern whereas “unselfishness” represents unselfish concern. On the basis of the binary responses, we categorized each respondent as endorsing altruistic enculturation (tolerance and respect for other people = 1; unselfishness = 1), cooperative enculturation (tolerance and respect for other people = 1; unselfishness = 0), apathetic enculturation (tolerance and respect for other people = 0; unselfishness = 1), or egoistic enculturation (tolerance and respect for other people = 0; unselfishness = 0). Under the assumption that types of enculturation would reflect a shared reality within each nation, the 106,343 individual-level categorizations were converted into four percentages per country.

If the shared-reality assumption is valid, we would expect to find that enculturation categorizations within each country are more similar to one another than they are to enculturation categorizations from other countries. We examined this expectation using one-way analyses of variance and intraclass correlation coefficients (ICC_1 and ICC_2 ;

ICC₁ is unadjusted, whereas ICC₂ is adjusted for the size of each country sample). The one-way analyses of variance indicated that the percentages of people endorsing altruistic, cooperative, apathetic, and egoistic enculturation differed significantly between countries at $p < .001$.

The ICC₁ values showed that 42% of the individual ratings of altruistic enculturation is due to country residency; 45% of cooperative enculturation is due to country residency; 32% of apathetic enculturation is due to country residency; and 44% of egoistic enculturation is due to country residency (Bliese, 2000). And the reliability of the country means, as estimated by the ICC₂ coefficient, was .97 for altruistic enculturation, .98 for cooperative enculturation, .96 for apathetic enculturation, and .98 for egoistic enculturation. Together, these analyses support the aggregation of individual responses to create country-level variables for each of the four types of prosocial–unselfish concern and enculturation.

Because the national percentages total up to 100, the four dependent variables were interrelated. In support of the conceptual framework in Figure 1, the most negative cross-national relations were observed between altruistic and egoistic enculturation ($r = -.77$, $p < .001$) and between cooperative and apathetic enculturation ($r = -.83$, $p < .001$). Nevertheless, the pattern of interrelations was far from completely symmetrical. Whereas altruistic enculturation was related to cooperative and apathetic enculturation ($r = -.55$, $p < .001$, and $r = .28$, $p < .05$, respectively), egoistic enculturation had no significant relations whatsoever with cooperative enculturation ($r = -.06$) and apathetic enculturation ($r = .12$).

The construct validity of the four types of enculturation was apparent from their relations to a cross-national index of altruism (source: Van de Vliert, Huang, & Parker 2004; $n_{\text{overlap}} = 56$; $r = .35$, $p < .01$ for altruistic; $r = .30$, $p < .05$ for cooperative; $r = -.44$, $p < .001$ for apathetic; $r = -.55$, $p < .001$ for egoistic). In addition, an opposite pattern of associations surfaced between the four types of enculturation and an opposite cross-national index of competitiveness (source: Lynn, 1991; $n_{\text{overlap}} = 36$; $r = -.24$, $p < .08$ for altruistic; $r = -.24$, $p < .08$ for cooperative; $r = .40$, $p < .05$ for apathetic; $r = .41$, $p < .05$ for egoistic).

Independent Variables: Climate and Wealth

Demanding climate was the sum of the squared deviations from 22°C for the lowest and highest temperatures in the coldest winter month and in the hottest summer month (source: Parker, 1997). The reference point for a temperate climate was set at 22°C—the approximate midpoint of the range of comfortable temperatures (Parsons, 1993). Twenty-two degrees Centigrade also happens to be the highest world temperature in the coldest month (on the Marshall Islands) and the lowest temperature in the hottest month (on the Faeroe Islands). The scores for demanding climate, ranging from 327 in Singapore to 4,231 in Canada, approximated a normal distribution. As large variations of within-country temperatures might influence the results, it is important to know that giving these countries a much smaller weight—25% or even 10%—in the regression analyses produced essentially the same results.

Collective wealth was the natural logarithm of the gross national income per head in the year 2000 (purchasing power parity US\$; source: United Nations Development Programme, 2002). The scores, ranging from 6.26 in Tanzania to 10.82 in Luxembourg, showed no departures from normality. Collective wealth was somewhat higher in more demanding climates ($r = .30, p < .01$).

Results

We employed hierarchical regression analysis to investigate the effects on enculturation using standardized demanding climate, standardized collective wealth, and their multiplicative interaction term as predictors. As shown in Table 1, the predictor set accounted for 19%, 9%, 20%, and 23% of the variance in altruistic, cooperative, apathetic, and egoistic enculturation, respectively. The main effects indicate that people living in increasingly demanding climates find it less and less important that children learn to be unselfish (vertical comparisons of Demanding Climate values), and that people living in increasingly wealthy societies find it more and more important that children learn to be prosocial (horizontal comparisons of Collective Wealth values).

However, as indicated by significant increases in the r^2 -value from the second to the third step, some main effects are qualified by climate-by-wealth interaction effects. As

Table 1
Results of Hierarchically Regressing Four Types of Enculturation on Demanding Climate and Collective Wealth

Predictor	Altruistic enculturation			Apathetic enculturation		
	ΔR^2	b^a	SE	ΔR^2	b^a	SE
Demanding climate (DC)	.00	-2.39	1.32	.17***	-1.63**	0.53
Collective wealth (CW)	.17***	5.31***	1.38	.02	-0.96	0.55
DC \times CW	.02	1.66	1.29	.01	-0.57	0.51
Constant		18.10***	1.24		9.26***	0.50
R^2	.19***			.20***		
Adjusted- R^2	.15***			.17***		

Predictor	Cooperative enculturation			Egoistic enculturation		
	ΔR^2	b^a	SE	ΔR^2	b^a	SE
Demanding climate (DC)	.04 [†]	2.70*	1.27	.01	1.32	1.08
Collective wealth (CW)	.01	0.66	1.32	.12**	-5.00***	1.13
DC \times CW	.04*	2.12 [†]	1.23	.10**	-3.21**	1.05
Constant		49.42***	1.19		23.23***	1.01
R^2	.09*			.23***		
Adjusted- R^2	.05*			.19***		

^aTwo-sided tests for DC and CW, one-sided test for DC \times CW. Unstandardized regression coefficients from the final step of the analysis are reported.

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

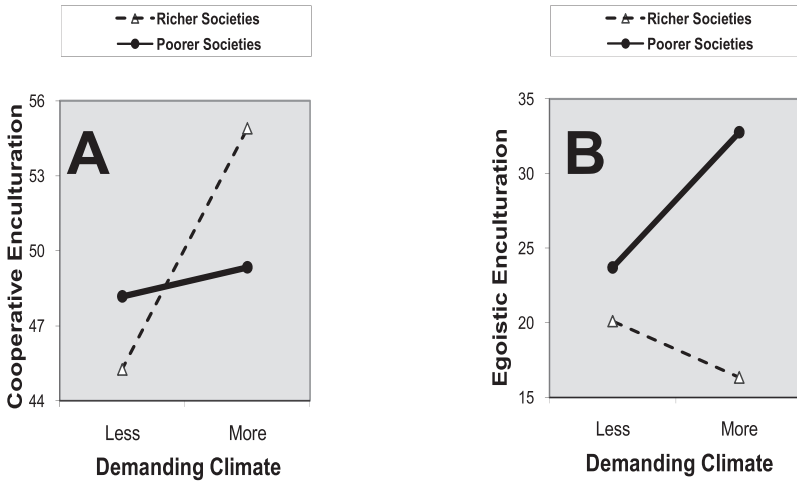


Figure 2. Joint effects of demanding climate and collective wealth on cooperative enculturation and egoistic enculturation.

expected, the interaction effects of demanding climate and collective wealth on the relatively selfish types of cooperative and egoistic enculturation reached significance. There was no multicollinearity of the predictor terms ($VIFs < 1.24$), and there were no outliers (Cook's $Ds < .62$).

To provide graphic representations of the two significant interaction effects, we plotted climate–enculturation regression lines for relatively poor societies (1 SD below the mean) and relatively rich societies (1 SD above the mean). As is apparent from the upwardly sloping regression lines in Figure 2A, in more demanding climates, members of richer societies ($b = 4.83, p < .01$) endorse cooperative enculturation to a greater extent than do members of poorer societies ($b = 0.58, p > .72$). By contrast, the upwardly sloping regression line in Figure 2B reveals that, in more demanding climates, members of poorer societies endorse egoistic enculturation to a greater extent ($b = 4.53, p < .001$); the opposite tendency for members of richer societies did not reach significance ($b = -1.89, p > .25$). Because cooperative and egoistic enculturation are unrelated ($r = -.06, p > .59$), Figure 2A,B illustrates independent climate-by-wealth effects on cooperative and egoistic enculturation. Both findings supported our expectations derived from the climatic demands–resources theory of prosociality.

Rival explanations of the results were also examined using the same data. The alternative viewpoint, that climate and culture in concert drive collective wealth (Sachs, 2000), was disconfirmed. Cross-nationally, demanding climate, cooperative enculturation, and egoistic enculturation accounted for 32% of the variance in wealth, but the interaction terms did not reach significance ($\Delta R^2 = .04; b = 0.02, p > .24$ for cooperative enculturation; $b = -0.02, p > .14$ for egoistic enculturation). Furthermore, regional effects for neighboring societies sharing the same historical, religious, or political circumstances were explored by controlling for each country's mid-range latitude, mid-range

longitude, and their interaction in a preceding step of the regression analysis. Regional effects could not convincingly account for the climate-by-wealth interaction effect on enculturation (remaining $\Delta R^2 = .04$, $b = 2.20$, $p < .10$ for cooperative enculturation; remaining $\Delta R^2 = .09$; $b = -3.21$, $p < .01$ for egoistic enculturation).

Discussion

A common theme running through all major religions, and through many folktales and parables, is that human beings should concern themselves with the well-being of other people (Schroeder et al., 1995). When societies find it necessary to preach and teach prosocial values and norms, one can reasonably surmise that prosociality is not self-evident, and that there is a natural tendency for people to rely on, and revert to, selfishness instead. Viewed this way, encouraging children to be more or less prosocial, unselfish, or both may be seen as the crux of cultural socialization through education. In the present comparative study, we uncovered two interacting contextual roots of cross-cultural differences in cooperative and egoistic enculturation. In terms of Berry's (1997) ecocultural model, those roots are the ecological context of demanding climate and the sociopolitical context of collective wealth.

Four general conclusions may be drawn from the results of this study. First, the conceptual structure of altruistic, cooperative, apathetic, and egoistic enculturation, defined by prosociality crossed with unselfishness, is a viable one. The proposed four types of concern and enculturation are anchored in theories of interpersonal motivation (e.g., McClintock, 1972; Pruitt et al., 2004; Van de Vliert, 1997), show a cross-national pattern of interrelations that reflects the conceptual structure, relate to existing cross-national indices of altruism and competitiveness in predictable ways, and have distinct relationships with the complex climato-economic context of a country's cold, temperate, or hot climate and degree of wealth.

Second, different cultural groups of world citizens have different ideas about the absolute and relative importance of altruistic, cooperative, apathetic, and egoistic enculturation of the next generation (cf. Bierhoff, 2002; Kabasakal & Bodur, 2004; Van de Vliert, Huang, & Levine, 2004; Van de Vliert, Huang, & Parker 2004). For example, cooperative enculturation is considered much more important than egoistic enculturation in China and Iceland, but much less important than egoistic enculturation in Algeria and Georgia. Such tendencies may help explain why societies differ so greatly. Our daily news keeps recording huge cross-cultural differences in the amount of conflict that exists and in what people do when conflict occurs (for scientific overviews, see Gelfand & Brett, 2004; Rahim & Blum, 1994; Ross, 1993; Ting-Toomey & Oetzel, 2001; Van de Vliert, Schwartz, Huisman, Hofstede, & Daan, 1999). Relatedly, outside of the news beam, societies vary highly in the degrees to which intimate partners, students, employees, customers, and clients are treated and managed with empathy and helpfulness. These differences in selflessness versus selfishness and cooperativeness versus competitiveness have many roots. One of the least obvious roots, uncovered here, is the functional adaptation of child enculturation to the given context of climatic demands and collective wealth.

Third, cooperative enculturation is valued more by members of societies in increasingly demanding cold or hot climates, especially if they live in richer societies (e.g., Austria). By contrast, egoistic enculturation is valued more by members of poorer societies, especially if they live in more demanding climates (e.g., Iran). These findings both reconfirm and refine the climatic demands–resources theory of social functioning including prosociality (Van de Vliert, 2009; Van de Vliert, Huang, & Levine, 2004, Van de Vliert, Huang, & Parker, 2004). There is support for the viewpoint that members of societies in increasingly demanding climates are increasingly less unselfish or more selfish in order to better meet homeostatic needs for thermal comfort, nutrition, and health. They have adapted their cultures in the direction of more cooperativeness to the extent that they possess wealth-based resources and homeostatic goods, but in the direction of more egoism to the extent that they lack wealth-based resources and homeostatic goods. In combination with our typology of prosocial–unselfish enculturation, there is support also for the viewpoint that gratifying homeostatic needs in increasingly demanding climates increasingly undermines unselfishness rather than prosociality.

Additionally, the results support and exemplify Bronfenbrenner's (1979) ecological perspective, which has influenced the psychology of parenting and child development worldwide. Bronfenbrenner situates the education and enculturation of children as occurring within layers of more proximal and more remote contexts. The child is in interaction with micro-level environments in the family, in the classroom, during leisure time, etc., which are embedded within meso-level environments of the place of residence, the school, the wider community, etc., which are in turn embedded within macro-level environments of culture, politics, economy, etc. More advantageous contexts are thought to have a more constructive influence on child development. In line with this ecological perspective, across 74 nations, more advantageous climate–wealth matches produce more cooperative and less egoistic enculturation of the next generation.

Fourth, there is a wealth-dependent impact of thermal climate on enculturation rather than a culture-dependent impact of thermal climate on collective wealth. Contributing to an ongoing debate (Hofstede, 2001; Inglehart & Baker, 2000; Parker, 2000), this final conclusion strengthens the economy–drives–culture camp rather than the culture–drives–economy camp. In particular, it supports the purpose of the United Nations Development Programme (2000, pp. 1–13) to use foreign aid, debt relief, and expanding access to markets as economic means to implement cultural value systems of freedom everywhere. On the basis of the findings represented in Figure 2A,B, we predict that, under otherwise equivalent circumstances, financial aid for human development will be more successful in changing societal cultures in harsher climates.

The present study is not without inherent strengths and weaknesses as a result of the methods employed. The strength of introducing a typology of prosocial–unselfish concerns came with the weakness of using competitiveness for the purpose of construct validation only. On the basis of the reported positive link between egoistic enculturation and competitiveness, we hypothesize that competitive enculturation is produced by the same climato-economic contexts as egoistic enculturation. Another strength, the use of a worldwide sample of over 100,000 respondents, came with the weakness that we used

only two binary responses per respondent. In statistical terms, reliability was sought in multiple observers instead of multiple items or multiple measuring moments. Finally, the strength that the predictor variables of demanding climate and national wealth were unobtrusive measures from separate datasets, eliminating reactivity in the estimates of altruistic, cooperative, apathetic, and egoistic enculturation, came with the weakness of correlational analyses that offered no conclusive evidence for causality.

Unless the weaknesses of this research overrule its strengths, the present results concerning the occurrence of cooperative and egoistic enculturation complement previous study results concerning the perceived effectiveness of cooperativeness and egoism across cultures. Using entirely different cross-national survey data, Van de Vliert and Einarsen (2008) showed that team-oriented leadership is seen as more effective by managers from richer societies in more demanding climates (e.g., Canada and Finland), whereas autocratic and self-protective leadership are seen as more effective by managers from poorer societies in more demanding climates (e.g., China and Kazakhstan). Indeed, a cultural syndrome of cooperativeness seems to thrive in harsh/rich environments, whereas a cultural syndrome of egoism seems to thrive in harsh/poor environments. In agreement with, and in the words of Van Lange et al. (1997, p. 733), we conclude that these cooperative and egoistic cultural syndromes are “partially rooted in different patterns of social interaction as experienced during the periods spanning early childhood to young adulthood.”

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