



Climates Create Cultures

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Abstract

The circumstances in which societies adapt their cultural values and practices to cold, temperate, and hot climates include the availability of money to cope with climate. Country-level studies have shown that feeling good, doing good, altruistic volunteering, intrinsic work motivation, cooperative enculturation, and democratic leadership are least prevalent in poorer countries with more demanding climates, moderately prevalent in poor and rich countries with temperate climates, and most prevalent in richer countries with more demanding climates. The common denominator is that inhabitants of lower-income countries in more demanding climates emphasize survival values at the expense of self-expression values, whereas the inhabitants of higher-income countries in more demanding climates emphasize self-expression values at the expense of survival values. These findings have practical implications for the cultural consequences of global warming and economic growth, and for the effectiveness of financing for human development.

Hippocrates, Ibn Khaldun, Montesquieu, Quetelet, and Huntington, to mention only a handful of classic scientists, all have tried to kiss the frog of climate into a prince of culture. To my own surprise, I have discovered why they failed (for details, see Van de Vliert, forthcoming). The first mistake was that they measured climatic temperature on Celsius or Fahrenheit scales, with an arbitrary zero point of reference. But for humans as a warm-blooded species a temperature scale with a comfortability optimum as the point of reference is more appropriate. Both colder-than-temperate and hotter-than-temperate climates call for more cultural adaptation in the longer run. The second mistake was that, with the exception of Montesquieu (1748), climate-culture researchers overlooked the complicating role of money. A valid analysis of cultural adaptation to climate should take into account how much cash and capital a society has available to cope with bitter winters or scorching summers.

In my view, thermal climate and collective wealth are the Adam and Eve of all present-day cultures because today's world citizens have learned to use money to cope with atmospheric cold and heat. This holds true

for members from individualistic cultures in Western Europe to collectivistic cultures in East Asia, from masculine cultures in southern Africa to feminine cultures in Northern Europe, and from democratic cultures in North and South America to autocratic cultures in Central America. Everyone, everyday, everywhere satisfies climate-based needs for thermal comfort, nutrition, and health with the help of money resources. The corresponding values and practices have been learned with the greatest of ease, unaware of their age-long evolution, and with next to no recollection of survival as their ultimate objective. As a consequence, hidden cultural remnants of our climato-economic past are waiting to be discovered as companions of our climato-economic present.

A better understanding of the climato-economic roots of culture is urgently needed with a view to two huge threats humanity faces today: global warming and local poverty. The current article offers an overview of this fresh perspective on the origins of culture – i.e., values and practices that are passed on and changed from generation to generation in nongenetic ways. The first section contains an introduction and visualization of my model of cultural adaptations to climato-economic niches. The second section, offering a review of evidence in support of the model, is illustrated with a climato-economic map of 77 national cultures. The third section concludes the overview with a display of three remaining puzzles about the joint impact of climatic demands and money resources on human cultures.

Cultural Adaptations to Climato-Economic Niches

Self-evidently, a society may adapt its cultural values and practices to its climatic environment (e.g., Boyd & Richerson, 2005; House, Hanges, Javidan, Dorfman, & Gupta, 2004), its economic environment (e.g., Inglehart & Baker, 2000; Van de Vliert & Janssen, 2002), both in a parallel fashion (e.g., Nolan & Lenski, 2006), or both in a sequential fashion (e.g., Hofstede, 2001). But all of these viewpoints overlook the equally obvious viewpoint that the climatic and economic impacts on culture may influence each other. A more accurate understanding of culture may unfold when we think of the environment as an integrated climato-economic habitat requiring integrated cultural responses. Hence, my emphasis on the hypothesis that the interaction of climate and wealth matters most to culture.

The representation of this hypothesis in Figure 1 does not deny that culture also has relations with the available money and, through it, with climate (see dotted lines and arrows in red). But the current article highlights the solid lines and arrows in blue. Specifically, I propose that the impact of the demandingness of thermal climate on societal culture is influenced by the level of collective wealth, that is, by the overall availability of ready money (cash) or unready money (capital).

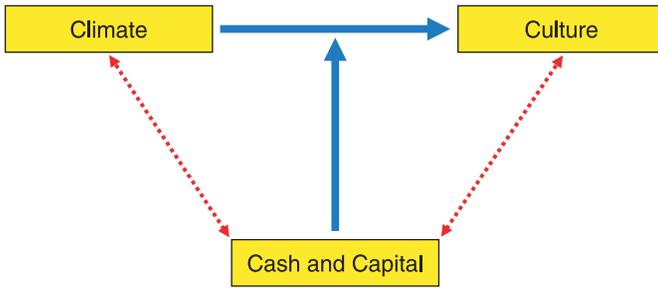


Figure 1 Model of cultural adaptations to climato-economic niches.

Colder-than-temperate and hotter-than-temperate climates make money resources more useful. Money resources make harsher climates less threatening and often more challenging. The climatic environment and the economic environment are introduced further before relating them to culture.

Climatic environment

Like all warm-blooded species, humans have to defend constant levels of high body temperature. For that reason, they have a characteristic relation between ambient temperature and physiology, represented in the so-called Scholander curve (Scholander, Hock, Walters, Johnson, & Irving, 1950). This curve describes the U-shaped dependence of heat production or rates of metabolism on ambient temperature. In an intermediate range of ambient temperatures, the thermoneutral zone, the metabolic rate required to maintain a core temperature of about 37°C (~ 99°F) is both minimal and independent of the ambient temperature. Below the thermoneutral zone, metabolism increases to generate enough heat (e.g., by shivering). Likewise, above the thermoneutral zone, metabolism increases to support active cooling (e.g., by sweating or panting). Thus, the biological costs of living increase on both sides of the thermoneutral zone. As a consequence, humans thrive in temperate climates and must invest more time and effort to meet survival needs for thermal comfort, nutrition, and health if they are living in colder or hotter regions of the world.

Temperate climates offer thermal comfort, abundant food resources owing to the rich flora and fauna, and negligible risks of unhealthy weather conditions. Both colder and hotter climates require more and better protective devices such as clothing, shelter structures, and heating or cooling systems. Work circumstances, work regulations, and work activities have to be adjusted, too. Increasingly colder or hotter climates also require increasing investments of time and effort in the pursuit of food and drink, and increasing concern about the climate-dictated

composition of nutrients in the diet. Finally, more and more measures have to be taken in increasingly colder and hotter climates to safeguard the health of oneself and one's family, especially in the tropics with its plagues of disease-producing substances, germs, bacteria, and insects. In short, it makes sense to search for relations between greater climatic deviations from comfortable temperatures and greater cultural adaptations.

Some good reasons support the adoption of 22°C (~ 72°F) as a point of reference for temperate climate. It is the highest world temperature in the coldest winter month (on the Marshall Islands). It is the lowest world temperature in the hottest summer month (on the Faroe Islands). And it is the approximate midpoint of the range of comfortable temperatures (Parsons, 1993). Average deviations from 22°C are indeed fitting indicators of the demandingness of climate. In theory, precipitation and humidity can lower or raise the comfortability optimum, but in practice somewhat lower or higher reference points than 22°C appeared to have almost identical cultural consequences (Van de Vliert, forthcoming). Therefore, a climate index can be based on four absolute deviations from 22°C, namely, the sum of the deviation scores for the average lowest and highest temperatures in the coldest month and in the hottest month. On this winter–summer index, climate ranges from most temperate on the Mariana Islands and the Seychelles to most extreme in Canada and Mongolia.

With a view to the model of cultural adaptations in Figure 1, it makes sense to assume that cash and capital are less important to cope with the sea climates on the Mariana Islands and the Seychelles than with the continental climates in Canada and Mongolia. In addition, it would not come as a surprise if climate has a different impact on the Mongolian culture, where the demanding climate is aggravated by poverty, than on the Canadian culture, where the demanding climate is compensated by wealth.

Economic environment

Only a few self-supporting societies in polar and desert regions have not yet developed a full-fledged system of shops and markets, and still use hunting, gathering, and exchanging nonfinancial goods to meet their survival needs. Everywhere else fully developed cash economies are in place to facilitate processes of satisfying survival needs for thermal comfort, nutrition, and health. Money is an extraordinarily ingenious tool because of the worldwide adherence to the agreement that worthless pieces of metal or paper, or even electronic codes, can be exchanged for all kinds of valuables. The magic of money is so overwhelming that we do not feel ridiculous at all when we are working long hours for an electronic bank transfer, and when we are trading

a credit card printout for valuable goods or services. Anthropologists agree that money has no essence apart from its uses.

Money enables us to buy clothing, housing, heaters, refrigerators, household energy, meals, drinks, kitchenware, medicines, medical treatment, and even future security. Because such common purchases help directly or indirectly to maintain the human body's constant state, or homeostasis, Parker (2000) calls the items bought *homeostatic goods*. In higher-income countries, families appear to spend up to 50 percent of their household income on a wide variety of such homeostatic goods. This figure rises to 90 percent in lower-income countries, and in the case of abject poverty many needs for homeostatic goods cannot be met at all by a majority of the population.

In different climates money may be useful for different purchases. For example, money may be a *sine qua non* for heating and eating in colder regions, but a *sine qua non* for preventing and recovering from major vector-borne diseases in hotter regions (e.g., malaria, yellow fever, schistosomiasis, and Chagas' disease). But there is no reason to assume that the underlying psychosocial processes of the joint impact of climatic demands and money resources are fundamentally different in harsher cold and hot climates. Elsewhere I have shown that temperate versus demanding climates rather than cold winters versus hot summers can best account for variations in our psychosocial functioning (Van de Vliert, forthcoming). Analogously, in both colder and hotter climates, more income is thought to lead to less climatic threats and often to more climatic challenges. In short, the same train of psychological events is bound for different cultural destinations in societies living in temperate climates, in poorer societies living in harsher climates, and in richer societies living in harsher climates.

Cultural adaptations

Psychologists and sociologists alike will almost automatically and uncontrollably react to the above reading of Figure 1 in terms of climatic demands and money resources with basically the same sort of theoretical reflexes. The demands-control theory (Karasek, 1979), the cognitive stress theory (Lazarus & Folkman, 1984), the theory of planned behavior (Ajzen, 1991), the self-efficacy theory (Bandura, 1997), the social production function theory (Ormel, Lindenberg, Steverink, & Vonkorff, 1997), and the challenge-threat appraisal theory (Tomaka, Blascovich, Kibler, & Ernst, 1997) differ widely in their basic tenets. Yet, all these theoretical frameworks address demands and resources, and all view demands as a two-edged sword depending on the available resources.

Greater demands matched by adequate personal or societal resources to meet the demands improve psychosocial functioning as the actors can control the situation, can turn threats into opportunities, and can

experience relief and pleasure instead of disappointment and pain. By contrast, greater demands mismatched by unavailable or inadequate personal or societal resources to meet the demands impair psychosocial functioning as the actors cannot control the threatening and stressful situation. If the demands are negligible, the personal or societal resources do not serve a useful purpose, with the consequence that no joint impact of demands and resources on psychosocial functioning occurs.

Application of this general demands-resources theory to our model in Figure 1 leads to the following considerations and predictions of cultural adaptations. Psychological functioning in terms of individual and social values, practices, motives, and satisfaction will be languishing in poor societies having to survive cold winters, hot summers, or both, as their members are in the worst position for buying goods and services to meet their survival needs for thermal comfort, nutrition, and health. By contrast, psychological functioning will be flourishing in rich societies having to survive cold winters, hot summers, or both. On the one hand, members of affluent societies have the challenging opportunity to cope with the demanding climate satisfactorily. On the other hand, only members of affluent societies living in threatening climates have both the climate-based drive and the financial means to sublimate obsessions with survival and control into obsessions with self-expression and creation (Van de Vliert, forthcoming). Finally, psychological functioning will be intermediate in poor and rich societies living in undemanding climates, simply because their members have both less pressing survival needs and less pressing self-expression needs, so that the overall degree of poverty versus wealth does not make as much of a difference as in harsh climates.

Support for the Model of Cultural Adaptations

To date, the viability of the proposed climato-economic foundations of cross-cultural differences has successfully been explored for the cultural components of feeling good and doing good, motives for volunteer work, motives for paid work, egoistic and cooperative enculturation, autocratic and democratic leadership, and the like. Brief discussions follow. Most attention will be paid to the syndromes of survival and self-expression cultures as adaptations to climatic demands and money resources in concert.

Feeling good and doing good

A first study compared the extent to which citizens of poorer and richer countries living in more temperate or harsher climatic zones of the earth feel good (happiness) and want to do good (altruism). We borrowed a 55-nation index of happiness from Diener, Diener, and Diener (1995)

and constructed a 71-nation index of altruism ourselves (for details, see Van de Vliert, Huang, & Parker, 2004). Climate was measured as the colder-than-temperate or hotter-than-temperate deviation of the country's average temperature from the average temperature across all countries investigated. Collective wealth was represented by the natural logarithm of the gross national product per head in US dollars.

We expected societies with lower-income resources to be unhappier and less altruistic in more demanding climates and societies with higher-income resources to be happier and more altruistic in the same sort of more demanding climates. These expectations could be confirmed. Gearing for a trial of strength between the feeling-good model of cultural adaptation and the doing-good model of cultural adaptation, we additionally found that poorer societies living in colder-than-temperate or hotter-than-temperate climates tend to couple lower degrees of happiness with a somewhat stronger motivation to improve the happiness of others. Mirrorwise, richer societies living in colder-than-temperate or hotter-than-temperate climates tend to couple higher degrees of happiness with a somewhat weaker motivation to improve the happiness of others. Thus, cultural adaptations to climato-economic niches are stronger for feeling good than for doing good.

Motives for volunteer work

Unpaid voluntary workers are doing good, but their volunteerism may be motivated by some combination of self-serving desires and unselfish altruism (Schroeder, Penner, Dovidio, & Piliavin, 1995). More egoistic motives of volunteers include the want of something worthwhile to do, meeting people, and gaining new skills and useful experience. More altruistic motives of volunteers include religious beliefs, solidarity with the poor and disadvantaged, and giving people who are suffering hope and dignity. We investigated these and similar motives among thousands of volunteers in 33 nations (for details, see Van de Vliert, Huang, & Levine, 2004). Our ultimate tableau of reasons for doing voluntary work revealed, for example, that Germans are higher on egoistic motives, Chinese higher on altruistic motives, Italians low on both, and Brazilians high on both.

Using the same indicators of climate and wealth as in the first study, further analysis uncovered the following ecological niches of cross-cultural differences in balancing the egoistic and altruistic motives. In lower-income countries with demanding climates (e.g., Baltic states), voluntary workers tend to have either predominantly egoistic or predominantly altruistic motives. In higher-income countries with demanding climates (e.g., Scandinavia), voluntary workers tend to integrate egoistic and altruistic motives. And in countries with temperate climates (e.g., Southern Europe), egoistic and altruistic motives for volunteer work

did neither exclude nor include each other. That is, in tentative support of the model of cultural adaptation, the trade-off between egoistic and altruistic helping is maximal in lower-income countries with demanding climates, minimal in higher-income countries with demanding climates, and moderate in countries with temperate climates irrespective of their level of collective wealth.

Motives for paid work

Paid work can be done more for the money (extrinsic motivation) or more for the fun of accomplishment (intrinsic motivation). The demands-resources model of cultural adaptations proposes that working for money is more important, and that working for fun is less important, among workers in poorer countries with harsher climates. This hypothesis was put to the test with the help of World Values Surveys data from 38 countries (source: Inglehart, Basáñez, Díez-Medrano, Halman, & Luijckx, 2004). Work motives were operationalized in two ways, as the national percentage of people endorsing the viewpoint that a good income is most important (Van de Vliert, Van Yperen, & Thierry, forthcoming), and as this percentage of income responses minus the percentage of accomplishment responses (Van de Vliert, forthcoming). From this study onward, climate was the sum of the absolute deviations from 22°C for the average lowest and highest temperatures in the coldest month and in the hottest month, and wealth was the logged purchasing-power income per head.

In support of the hypothesis, working for money was strongest in the poorest countries with the harshest climates (e.g., Armenia, Azerbaijan, Georgia, Macedonia, and Moldova), whereas working for fun was strongest in the richest countries with the harshest climates (e.g., Australia, Canada, Norway, Switzerland, and the USA). Moderately strong extrinsic and moderately strong intrinsic work motives were found in countries with undemanding climates irrespective of whether these countries are relatively poor (e.g., Dominican Republic and Tanzania) or relatively rich (e.g., Brazil and Singapore). The country's inflation rate, the size of the informal grey economy, income inequality, and the use of performance-related pay in the country's organizations could not account for the findings.

Egoistic and cooperative enculturation

Culture is only real culture when children pick up values and practices from their parents, carry them, and pass them on to following generations. One of the most rudimentary things parents must pass on is cooperativeness. Children must learn to have less than minimal concern for their own goals, more than minimal tolerance and respect for other

people's goals, or both. Against this background, the next question was whether the process of cultural adaptation to climato-economic niches is generalizable from egoistic and altruistic motives to egoistic and cooperative enculturation of children. Two 74-nation indices of whether children should be encouraged to act and react egoistically or cooperatively, were related to the same climato-economic composite as in the preceding study (for details, see Van de Vliert, forthcoming; Van de Vliert, Van der Vegt, & Janssen, forthcoming).

Again, the empirical results supported the theoretical framework. In poorer societies living in more demanding climates (e.g., Soviet successor states), adults in the child's environment provide models and give lectures about looking after one's own interests first. Egoism is encouraged at the expense of cooperativeness. In richer societies in more demanding climates (e.g., North America), adults in the child's environment provide models and give lectures about acting unselfish and prosocial. Thus, cooperativeness is encouraged at the expense of egoism. In societies in temperate climates (e.g., Philippines and Singapore), where money resources are anything but critical for survival, adults in the child's environment provide few models and lectures about concerns for self and other. Consequently, children do not learn to be relatively egoistic or relatively cooperative.

Autocratic and democratic leadership

In an 84-nation analysis of survey responses from 19,525 managers, Peter Smith and I have uncovered that leaders in more developed nations, especially in nations with more demanding climates, rely more on subordinates as sources of information and as targets of delegation (Van de Vliert & Smith, 2004). Building on that preliminary study, and on the outlines of the above model of cultural adaptations, we drafted a climato-economic theory of leadership consisting of four propositions: a climate-based demands proposition, a wealth-based resources proposition, a demands-resources match proposition, and a leadership proposition (for the most recent formulation of the theory, see Van de Vliert, forthcoming). This theory about the occurrence of different degrees of democratic leadership under particular climate-by-wealth conditions was next tested for the effectiveness of autocratic leadership and of its opposite, democratic leadership.

Indices for the perceived effectiveness of autocratic versus democratic leadership were derived from GLOBE survey data gathered in 58 countries (House, Hanges, Javidan, Dorfman, & Gupta, 2004; for details on the indices and the analyses, see Van de Vliert, 2006, forthcoming). In elegant agreement with the theory, autocratic leadership is seen as more effective and democratic leadership as less effective in poorer countries with more demanding climates (e.g., China and Kazakhstan), whereas

autocratic leadership is seen as less effective and democratic leadership as more effective in richer countries with more demanding climates (e.g., Austria and Finland). Inhabitants of poorer and richer countries in temperate climates (e.g., Malaysia and Zambia) tend to endorse neither downright autocratic nor downright democratic styles of leadership.

Survival versus self-expression cultures

Not surprisingly, positive cross-national relations exist among feeling good, doing good, altruistic volunteering, intrinsic work motivation, cooperative enculturation, and the occurrence and endorsement of democratic leadership (Van de Vliert, forthcoming). This pattern of interrelations strongly suggests the heretofore hidden existence of a common denominator of culture that can map and clarify the typical clustering of the above specific values and practices in given climate-economic niches. For theoretical, methodological, and practical reasons touched on shortly, the World Values Surveys' dimension of survival versus self-expression may be the best available proxy for this common denominator of culture. Its survival pole is referring to unhappiness, physical and economic security, extrinsic work motivation, discrimination, and distrust. Its self-expression pole is referring to happiness, self-actualization and quality of life, intrinsic work motivation, tolerance, and trust.

The theoretical reason for concentrating on survival versus self-expression cultures is that they have insightful relations with the climate-contingent survival needs for thermal comfort, nutrition, and health. The methodological reason is that four waves of the World Values Surveys have consistently produced this cultural dimension of survival versus self-expression values and practices (Inglehart, 1997; Inglehart & Baker, 2000; Inglehart et al., 2004; Inglehart, Basáñez, & Moreno, 1998). And the practical reason is that, hopefully, future interventions can mitigate the present problems of global warming and local poverty by moving cultures away from survival values and practices toward self-expression values and practices. A 77-nation study (for details, see Van de Vliert, 2007, forthcoming) has supported the idea that the demandingness of climate and the availability of money resources in concert function as roots of survival versus self-expression syndromes of culture.

This analysis showed that climatic demands (0%), income per head (52%), and climate and wealth in concert (20%) accounted for 72 percent of the cross-national variation in survival versus self-expression cultures. The details of these results are plotted in Figure 2, illustrated with 67 country names, crowding out 10 others (Azerbaijan, Brazil, El Salvador, Israel, Malta, Pakistan, Philippines, Portugal, Uruguay, and Venezuela). The red downward slope indicates that poorer societies living in more demanding climates tend to have survival cultures. The blue upward

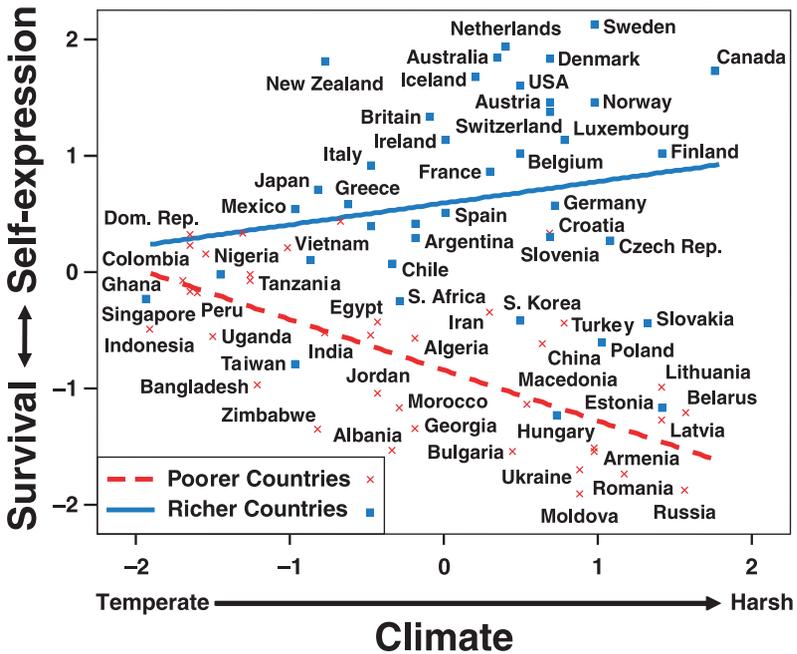


Figure 2 Effect of climatic demands on survival versus self-expression culture, broken down for poorer and richer countries.

slope, indicating that richer societies living in more demanding climates, tend to have self-expression cultures. It is important to note that this upward slope becomes steeper and steeper to the extent that one considers less and less countries as really rich.

In the lower right-hand corner of Figure 2, we see that survival cultures thrive in regions with harsh climates where the inhabitants are short of cash and capital resources to cope with climate (e.g., Moldova and Russia). In the upper right-hand corner, we see that self-expression cultures thrive in regions with harsh climates where the inhabitants have plenty of cash and capital resources to cope with climate (e.g., Canada and Sweden). And in the middle at the left, we see that in-between cultures thrive in regions with temperate climates irrespective of whether the inhabitants are rather poor (e.g., Ghana) or rather rich (e.g., Singapore). Retests with the countries' surface area as overall complication, with precipitation as climatic complication, and with income inequality as economic complication, could not destroy the results.

The most general complication in need of attention is the existence of biases in geographical distribution. It is clear that countries are not distributed randomly with regard to the demandingness of climate and the availability of money resources. Historically, the most affluent peoples have Christian religions, endorse state policies of democratic governance,

and are living in the colder climates. Methodologically it may mean that there is a problem of confounding variables other than surface area, precipitation, and income inequality. However, when this overarching problem of possible confounders was addressed by controlling the countries' midrange latitude, midrange longitude, and their interaction term, none of the three geographic-location effects could destroy the results. All in all, there is robust support for the demands-resources model of cultural adaptations to climato-economic niches.

Remaining Puzzles

Colleagues keep telling me that theoretical connections between atmospheric climate and psychosocial functioning are farfetched. Nonetheless, the discovery of the pivotal role of money resources highlighted here, is beginning to integrate thermal climate, the warm-blooded human being, and the evolution of shared individual values and practices. A major challenge for scholars in this interdisciplinary field is to now weave a more complex web of relations between lifelong exposure to thermal climate, hypothalamic monitoring of homeostasis, homeostatic utility maximization, money-based consumption of homeostatic goods, and collective adaptation (for more on several parts of this web of relations, see Parker, 2000). As yet, the seminal state-of-the-science of climato-economic niches of culture raises perhaps more questions than it answers. Indeed, my claim that 'Climates Create Cultures' may radiate overconfidence. At the very least, climates come with a winter-plus-summer puzzle, creation with a time-it-takes puzzle, and cultures with a help-the-needy puzzle.

The winter-plus-summer puzzle

Climate in this article consists of average deviations from comfortable temperatures in winters and summers. This raises the further question whether winters, summers, or unique combinations of winters and summers must be held responsible for the findings. I conducted the required more specific analyses and found that demanding cold and demanding heat are both important, but that cold winters bear more responsibility for the climato-economic impact on survival versus self-expression cultures than do hot summers. But in a study of the occurrence of child labor around the globe hot summers outstripped cold winters. Specifically, the percentage of working children is maximal in poor nations with hot summers and temperate winters (e.g., Togo), intermediate in poor nations with temperate summers and temperate winters (e.g., Somalia), minimal in poor nations with temperate summers and cold winters (e.g., Zambia), and negligible in rich nations irrespective of climate (Van de Vliert, forthcoming). These findings favor the joint

effects of climatic cold, climatic heat, and collective wealth on the values and practices that are prevalent in differing national cultures as future frontiers of cross-cultural research.

The time-it-takes puzzle

Although cultural adaptation takes time, the cross-sectional studies just reported ignore time lags. Right now there is only one longitudinal study of cultural adaptation to conglomerates of climatic stability and economic change. Over 8- to 19-year periods, inhabitants of 38 countries in more demanding climates appeared to have moved from self-expression values and practices toward survival values and practices to the extent that they were exposed to economic decline rather than economic growth (Van de Vliert, 2007). Given the view of most theorists that cultures are extremely stable over time, this covariation of climato-economic change and culture change is striking for the limited span of time investigated. It would be a great leap forward if we were to succeed in mapping and explaining time differences in adaptations of distinct cultural values and practices to different climato-economic environments.

The help-the-needy puzzle

Research into the complexity, generalizability, and causality of climate-culture links is desirable also with a view to better cut the Gordian knot of global warming and local poverty. If the findings so far are valid and reflect causality rather than simultaneity, global warming produces living conditions that reinforce self-expression values and practices in lower-income societies in cold climates (e.g., Baltic states and Russia), but survival values and practices in lower-income societies in hot climates (e.g., sub-Saharan Africa). Inextricably related to this, to enable people to enjoy a decent standard of living (freedom from want), and to secure freedom from fear, discrimination, injustice, and exploitation, freedom of speech, and freedom to develop and realize one's potential (UN Development Programme, 2000, 1–13), financing for human development should be fine-tuned to the harshness of climate. The findings so far suggest that foreign aid, debt relief, and expanding access to innovations and markets are more effective in securing 'the seven freedoms' in lower-income societies living in harsher climates.

Prophecy

One day, when the remaining puzzles are solved, we will have to stop taking for granted that human evolution, unlike the evolution of animals and plants, has somehow contrived to wipe out its own climatic underpinnings.

Short Biography

Evert Van de Vliert received his PhD from the Free University in Amsterdam in 1973, and has held teacher and researcher positions at the same university, at the University of St. Andrews in Scotland, and at the Royal Military Academy in the Netherlands. At present, he is Professor Emeritus of organizational and applied social psychology at the University of Groningen in the Netherlands, and research professor of work and organizational psychology at the University of Bergen in Norway. Current research concentrates on cross-national organization psychology, with an emphasis on the impact of atmospheric climate on national and organizational culture. He has published more than 200 articles, chapters, and books, and is currently writing the book *Climate and Cash Rock the Cradle of Culture*. In 2005, he received the Lifetime Achievement Award of the International Association for Conflict Management. Website: www.rug.nl/gmw/faculteit/medewerkers/objecten/523.

Endnotes

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