

Solidarity and Prosocial Behavior

An Integration of Sociological and
Psychological Perspectives

CHAPTER 13

Wealth, Climate, and Framing: Cross-National Differences in Solidarity

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Solidarity in the form of showing concern for other people's welfare varies, not only across individuals, groups, and organizations, but also across countries (see also Fetchenhauer and Wittek, this volume). Not surprisingly, solidarity seems to be higher in more affluent countries, allegedly because people have more resources, enabling them to be generous (see below). There is contradictory evidence, however. Levine, Norenzayan, and Philbrick (2001) conducted a series of field experiments on spontaneous helping in large cities in 23 countries in North and South America, Western and Eastern Europe, Africa, and Asia. They found more helping in poor countries than in rich countries and concluded that prosperity may make people selfish. Who is right? How can these contradictory findings be explained?

In this chapter, we use framing theory to contextualize the influence of affluence on solidarity. We will do this by using an idea that appears to have been abandoned long ago: climate matters. More than a century ago, the proponents of the so-called geographical school argued that climate matters for all sorts of social phenomena (for an overview, see Sorokin, 1928). They could not explain, however, how climatic effects were brought about, and how they linked up to social circumstances. As a result, their theories were eventually rejected as crackpot ideas. Nevertheless, there is some truth to their original claim, certainly with regard to solidarity. For example, Van de Vliert, Schwartz, Huisman, Hofstede, and Daan (1999) followed up a study on cultural femininity by Hofstede (1998, 2001), and related cultural femininity to thermal climate. Inhabitants of countries with more feminine cultures tend to have more sympathy for the weak, empathize more with others regardless of their group, and feel that the needy should be helped and that immigrants should be integrated. In a simi-

Vliert, 1994; Rognes, 1994). Van de Vliert et al. (1999) found that feminine cultures flourish more in climatic environments that are cold (e.g., Scandinavia) or hot (e.g., East and West Africa), and that there is a strong positive relationship between climate and affluence (Hofstede, 2001). This, of course, does not explain why wealth sometimes has a positive and sometimes a negative impact on solidarity, but it led us to develop a mechanism that might help us solve the problem.

Framing, Climatic Demands, and Wealth Effects

The basic idea of our theory is a combination of framing-based solidarity theory and a climatic demand theory. Together, they are able to explain important effects of private and public wealth on solidarity. The solidarity theory (Lindenberg, 1998 and this volume) states that when people are strongly interdependent in a small face-to-face group they develop strong solidarity within the group and opportunistic behavior between groups. Their normative frame and their gain frame are antagonistic. Behavior toward the out-groups is governed by an unadulterated gain frame (with opportunistic behavior), whereas behavior toward the in-group is governed by a normative frame. Researchers investigating solidary behavior in a society with many such groups and found helping in situations of daily living (in the small circle) and little solidarity across groups. When the interdependence in the small group is weakened and replaced by functional interdependence among individuals from different groups, then strong solidarity gives way to weak solidarity, which extends across groups. The important feature of weak solidarity is that the gain frame and the normative frame are not antagonistic. Gain-seeking behavior toward strangers is tempered by normative concerns, and the latter are tempered by opportunities for gain. Researchers investigating a society with weak solidarity would find much less sacrifice for others in situations of daily living but more emphasis on egalitarianism, tolerance, and respect for strangers.

The climatic demand theory focuses on the homeostatic needs of individuals and the influence of climate on the amount of resources needed to meet homeostatic demands. Extreme climates create a demand for resources for dealing with extreme temperatures (hot or cold). People in poor countries with extreme climates use most of their resources to deal with homeostatic problems. This has consequences for solidarity (solidarity in the in-group and gain orientation toward the out-group, making solidarity and pursuit of gain clearly antagonistic). In terms of framing theory, people in rich countries with extreme climates have resources to spare and develop "weak solidarity" across

balance. In the remainder of this section, we will elaborate our integration of climatic demand theory and framing theory: we will then present some empirical evidence.

Climate and Resources

Like all warm-blooded species, humans regulate their body temperature within narrow limits. They must obtain and metabolize much food to maintain thermoregulation and health. The day-to-day topicality of these basic physiological needs is apparent from the frequency with which people worry and communicate about thermal discomfort, hunger or thirst, and related purchases. The climate-contingent needs for thermal comfort, nutrition, and health require that humans continuously use, adjust, and organize a variety of elements from their environment, especially in less temperate—colder or hotter—climates. Here, *climatic demands* refer to behavioral necessities for directly or indirectly coping with climatic cold or heat, while *climatic resources* refer to physical, technical, or sociopsychological means in the environment to cope with climatic cold or heat.

Climatic Demands

Climate-contingent needs for physiological comfort are linked with corresponding behavioral necessities. For fully acclimatized people, the most comfortable outdoor temperature ranges from 17.8°C (64°F) to 22.2°C (72°F) in Britain (Ambler, 1968), and from 26°C (78.8°F) to 28°C (82.4°F) in the tropical climates of Nigeria, Calcutta, Singapore, New Guinea, and North Australia (Fanger, 1972). Note that acclimatization has only a marginal effect on the variation of comfortable temperatures around the mean of 22.5°C (72.5°F). The above-mentioned figures, therefore, allow the corollary that, on a worldwide scale, environments colder than 20°C (68°F) produce more heat loss, constriction of blood vessels, and shivering. Environments hotter than 27°C (80.6°F) produce more heat storage, dilation of cutaneous vessels, and sweating. As a result, notwithstanding the acclimatization effect, more extreme ambient temperatures evoke more intense feelings of physiological and psychological discomfort, greater relocation risks, and a stronger need for behavioral interventions (Parsons, 1993). Examples of adaptive behaviors that individual members of a society learn to deem necessary, to believe in, and to strive for are changing activities, putting on or taking off clothing, changing location, using heating or cooling methods, changing jobs or working hours, or buying protective or compensatory devices (e.g., a sauna bath or swim-

interventions produce collective demands for different clothing, housing, and working arrangements, and health provisions (for example, against frost bite, pneumonia, asthma, rheumatism, gout, and influenza in cold climates, and malaria, yellow fever, schistosomiasis, trypanosomiasis, ochocerciasis, Chagas' disease, and filariasis, among others, in hot climates; see Sachs, 2000, p. 32).

To balance the high energy costs of keeping warm, cold climates require a higher caloric intake. To compensate for sweating, hotter climates increase the need for water and salt. At the same time, these climates make it more difficult to meet these demands. Food production is lower in cold climates because of reduced solar radiation and frost and snow, even if fish or other forms of wildlife can provide abundant food supplies. In the warmest climates, food is often limited owing to droughts, soil erosion, and rapid food spoilage. After the initial African genesis, human populations achieved flourishing expansion and evolution once they settled in the temperate zones of the earth.

Climatic Resources

Societies in more extreme climates, which have to resolve continuously the basic problems of thermal and nutritional discomfort and climate-related illnesses, use available financial means to solve these basic problems as satisfactorily as possible. Although physiological comfort can be achieved through behavioral interventions in and of themselves (e.g., more or less activity in case of cold or heat), comfort is often achieved using resources to cope with cold or heat. Some self-supporting societies, especially in the polar and desert regions, have not yet developed a full-fledged system of shops and markets for trading "homeostatic goods" and still use their creativity to develop housing, clothing, and equipment that effectively protect them. As a rule, however, climatic resources are for sale and have a price; that is, they share financial means as an underlying dimension. Money can buy a wide variety of immovables, conveniences, appliances, recreational facilities, services, practices, and consumables that overcome or mitigate the hardships of climatic cold or heat. Diener, Diener, and Diener (1995) even related national wealth to the fulfillment of basic physiological needs ($r = .76, n = 55, p < .001$ for the link between wealth and a composite index of need fulfillment). Accordingly, most income is used to enhance fulfillment of the basic physiological needs (housing, clothing, food, and household energy), even if goods and services consumed in the pursuit of income to purchase such homeostatic goods are left out of consideration (e.g., certain fractions of health care, education, and transportation) (Parker, 2000). For a populace living in a less temperate—colder or hot-

consequences (for the interactive effects of the possession and evaluation of money see Diener and Oishi [2000]). The findings of a study reported by Van de Vliert, Huang, and Parker (2004) show that this could well be the case. Economic development professionals from each continent who had all traveled extensively in low-income and high-income countries were asked the following question: "Assume that the average income of a German today is indexed at 100. Based on your knowledge, how much would the average person from your country of origin need to earn to be equally happy to the average German? Please base your answer on the index of 100 (e.g., if your country of origin is Germany, your answer must be 100; if the average person would be as happy as the average German by earning less, the answer must be between 0 and 100)." The aggregated ratings demonstrated that a country's residents do indeed need more income to reach the same crude standard of happiness to the extent that the climate they live in deviates from the comfortable average temperature of 22.5°C (72.5°F; $r = .65, n = 34$ countries, $p < .001$).

In high-income countries, up to 50% of personal income is spent on all conceivable kinds of homeostatic goods. This figure goes up to 90% in low-income countries (Parker, 2000), and in cases of grinding poverty many needs for homeostatic goods cannot be met at all by a majority of the population. In addition, poverty fails to protect people from extreme weather disasters (Triandis, 2000). All in all, it is no wonder that a secondary analysis of 11 datasets by Inkeles (1997) yielded a strongly positive median correlation ($r = .55$) between the level of national wealth and the aggregated degree of ability to cope, manage, and master. Financial resources are a means of control in general and a means of thermal and nutritional control in particular. In short, no better proxy of the country-level availability of climatic resources and control of physiological comfort exists than national wealth.

Framing

If a country is poor (i.e., many people are poor and the country lacks important facilities that help people deal with extreme temperatures) and if the climate is extreme, a large part of private resources is absorbed in people's basic homeostatic regulation. This is likely to have important consequences for framing. In all likelihood, it will create strongly contrasting "master frames" (Lindenberg, this volume). Because climatic resources are scarce, expectations that people will help each other to meet the homeostatic demands and the demands of daily living are likely to be strong where they are likely to be most relevant: in the small group or in small aspects of daily living across groups. In these situations, the goal to act unambiguously is likely to be strongly supported by tradition public

clear expectations in the mental model for relationships to which the norms apply (cf. Lindenberg, this volume). By contrast, because resources are scarce, situations to which these norms do not apply are likely to be seen as legitimately open to opportunistic behavior (with a gain frame). For example, stealing from a person who one is not obliged to help may be illegal, but is likely not to be considered immoral. In short, the frames are clearly separated by situation. A person is motivated either normatively or by self-interest. Solidary behavior and gain-oriented behavior are seen as opposites. Weber (1961, p. 261) already observed that, historically, where in-groups were strongly normatively regulated, the behavior toward out-groups was virtually unregulated ethically.

If the climate is extreme but the country is rich (i.e., many people are rich and the country has important facilities that help people deal with extreme temperatures), the homeostatic demands can be met with resources to spare. Again, this is likely to have important consequences for framing. As there are resources to spare, there will be less emphasis on helping in the small circle and in daily living. Interdependence within the small group is likely to have given way to "system" interdependence among individuals of different groups, through the very processes that helped to create the wealth in the first place (specialization, contractual relations embedded in rational-legal regulations, infrastructure and welfare provisions by the state, and so forth). The solidarity norms of former times (of helping in the small circle and in daily living) will have changed into the norms of a weak form of solidarity across groups and into norms that are not in opposition to gain but can function as regulatory devices for achieving gain across groups (such as egalitarianism, tolerance, respect for strangers).¹ In such "weak" solidarity, the normative and the gain frames keep each other "in check" in the sense that neither is likely to dominate a situation among strangers or acquaintances. This leads to the paradoxical situation that people in poor countries with extreme climates are likely to put more emphasis on help in the small circle and in daily living, but are at the same time less likely to have general altruistic values and behavior across groups than people in comparable rich countries.

People in countries with temperate climates are unlikely to have experienced scarcity of homeostatic resources and are thus less likely

¹ Of course, situations in which solidarity norms and rules regulating gain are compatible rather than antagonistic develop gradually. In all likelihood, this requires important institutional changes (see Weber, 1961, p. 261ff). In other words, the implicit assumption in solidarity theory is that the wealth of a country is based on changes in its infrastructure and institutions. Thus, the theory should be less applicable to countries whose wealth is based mainly on natural resources (such as oil) without much change in the conditions that reduce

to have developed in-groups with strong solidarity norms. For this reason, they are also less likely to have developed traditions of extreme opportunism toward out-groups. Normative and gain frames have not been strongly separated by the scarcity of resources, nor have they come to support each other. These two frames, are, therefore, neither extremely salient nor strongly interdependent. Situations may or may not cause altruistic motivations to be combined with gain motivation, depending on people's personal circumstances rather than on general conditions of the country as a whole.

Some Empirical Evidence

Climatic Conditions and Cultural Femininity

As mentioned earlier, studies of cultural femininity provide interesting findings on the relationship between climatic conditions and solidarity. For our theory, the most important findings have to do with the correlation of a culture of femininity (akin to weak solidarity) with climatic conditions. In his by now classic large-scale study of 53 national and regional cultures, Hofstede (1998, 2001) has demonstrated that solidary attitudes and behavior are more prevalent in societies that value gender equality and quality of life rather than caring women versus caring men. Cultural femininity and the concomitant norms of weak solidarity frames flourish in Northern Europe (Norway, Sweden, Finland, Denmark, and the Netherlands) but founder in Japan, in Germanic countries (Germany, Switzerland, and Austria), and in some Latin European and Latin American countries (Italy, Mexico, and Venezuela). More feminine cultures are associated with more sympathy for the weak, empathy regardless of group membership, and readiness to help the needy and integrate immigrants. Conflicts tend to be resolved through problem solving and compromise rather than open aggression or avoidance (Emans et al., 1994; Rognes, 1994). With regard to work, members of more feminine cultures participate more in voluntary associations and activities, and attach more importance to cooperative relations and solidarity with managers and fellow workers in paid work.

A follow-up study (Van de Vliert et al., 1999) showed that cultural femininity and weak solidarity thrive in more difficult climatic environments that are closer to the icecaps, on the one hand (e.g., Scandinavia), and closer to the equator, on the other hand (e.g., East and West Africa). This U-shaped climate-femininity relationship is a robust finding that survives when population size and density and the country's standing in civil liberties and political rights are controlled. In addition, although cultural femininity is not related to geographical latitude in all coun-

(Hofstede, 2001). Taken together, and given that wealthier countries tend to be located in colder climates, this suggests that the curvilinear link between climate and cultural femininity is steeper on the cold side than on the hot side of the U-shaped curve. But the U shape itself is evidence in support of the assumption that weak solidarity thrives when the climate is more demanding and the country is rich.

Altruistic (Weak Solidarity) Values

Inspired by Levine et al.'s (2001) prior study, Van de Vliert et al. (2004) constructed a 71-nation index of altruistic values on the basis of available indicators of egalitarian commitment to promoting the welfare of others (Schwartz, 1992, 1994), importance of tolerance and respect for other people (Inglehart, Basañez, and Moreno, 1998), and competitiveness (Lynn, 1991; reversed coding). Each of the three indicators of altruistic values was statistically controlled for collateral components of self-interest before it was integrated into the overall index of selfless concern for others' interests. This index can be considered to tap norms of weak solidarity.

Based on this index, altruism was highest in Sweden, Argentina, Switzerland, and the Netherlands, and lowest in Thailand, Egypt, Jordan, and Indonesia. However, this apparent wealth-altruism link differed across climatic zones (see Figure 13.1). In colder climates, people in rich countries were more altruistic and people in poor countries were less altruistic than were people in countries with temperate

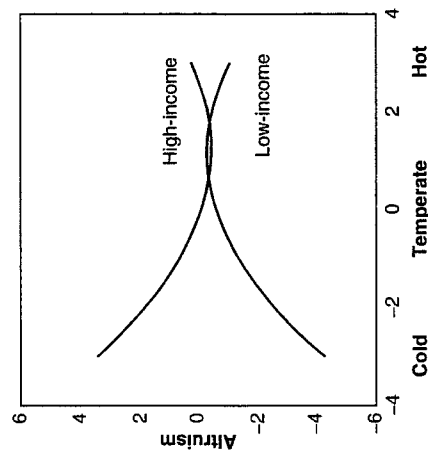


FIGURE 13.1. Altruism in countries with cold, temperate, and hot climates.

climates. Similarly, in hotter climates the tendency for people in rich countries to be more altruistic and for people in poor countries to be less altruistic approximated significance. Controlling for latitude as a proxy of variations in sunlight and day-night cycles and for the country's surface area, population size, and population density had no noticeable influence. In line with our theory, the research team argued that affluence drives both subjective well-being and altruism. General concern for others can be found especially in rich countries where individual and public means can be used to meet the multiple demands of a cold or hot climate and to pay for a general concern for the welfare of others (egalitarianism, tolerance, respect).

Spontaneous Helping (Strong Solidarity)

Our theory predicts that "weak solidarity" is higher in rich countries, especially when the climate is demanding. We have shown above that there is evidence for this claim. However, the theory also states that people in poor countries with demanding climatic conditions place more emphasis on helping in the small group and in daily living than do people in rich countries in such climatic conditions. There is also some evidence pointing in this direction. Levine et al. (2001) conducted a series of field experiments on helping in the "small" aspects of daily living. The field experiments were carried out in large cities in 23 countries in North and South America, Western and Eastern Europe, Africa, and Asia. In each city, the researchers measured spontaneous helping behaviors by pedestrians in three nonemergency situations: helping by assisting a blind person across the street, offering help to a pedestrian with an injured leg trying to pick up a pile of dropped magazines, and alerting a pedestrian who dropped a pen.

Overall, helping was most frequent in Brazil, Costa Rica, Malawi, and India, and least in the Netherlands, Singapore, the United States, and Malaysia. Note that the Netherlands came out as the least helpful in the small aspects of daily living, whereas it was one of the highest-scoring countries with regard to values of weak solidarity. These cross-national differences in helping could not be explained by means of the general pace of life, but were inversely related to a country's economic productivity and positively associated with norms that emphasize concern for social obligations. Levine et al. (2001) argued that prosperous countries may require their citizens to pursue personal needs and to ignore, in general, norms that traditionally prescribed helpfulness toward fellow members of society. Our theory gives a very different interpretation to these findings: especially in demanding climates, prosperous countries encourage weak solidarity (with a low level of

countries encourage strong solidarity (with a high level of personal sacrifice in the small circle and daily living but with competitiveness or open opportunism across groups).

A secondary analysis of these data (Van de Vliert, Huang, and Levine, 2004) revealed that Levine et al. (2001) in fact investigated inhabitants of two distinct groups of countries: a group of high-income countries with predominantly cold climates, and a group of low-income countries with predominantly hot climates. In the group of poor countries with hot climates, a warmer climate tends to be associated with more helping behavior ($r_s = .46, n = 12, p < .07$). Thus, for poor countries it was found that, as our theory predicts, the more demanding the climate, the more helping in daily life. As expected, the level of helping in the rich/cold group was lower than in the poor/hot group. Here, too, the higher the net climatic demand (i.e., the colder the country in this group), the more likely that people would help in small aspects of daily living ($r_s = .59, n = 11, p < .05$).

Altruistic Motives for Doing Voluntary Work

As elaborated above, our theory states that in the case of strong solidarity, normative and gain frames are strictly separated by people and situation. A person is either a friend or group mate to another and does not think of gain in interacting with him or her, or the person is not a friend or group mate to the other person and can unabashedly try to gain as much as possible from the interaction. In short, solitary behavior and gain-oriented behavior are seen as opposites. In weak solidarity, normative and gain frames are compatible. The two frames keep each other from becoming extreme and thus a normative frame functions as a regulatory device in the service of gain. Again, there is some evidence that this is the case. Studies in voluntary work cover only a small part of solitary behavior, but they happen to involve the testing of the compatibility or incompatibility of solidarity and the pursuit of gain and can thus be used as evidence for or against our theory.

Working in some way to help others without monetary recompense is a significant social phenomenon with hundreds of millions of participants worldwide (cf. Karr and Meijs, this volume). The most common voluntary activities involve assisting the elderly or handicapped, acting as an aide or assistant to a paid employee, babysitting, fundraising, and serving on committees (Clary and Snyder, 1991, p. 128). Curtis, Grabb, and Baer (1992) reported cross-national differences in working for a variety of voluntary associations, and the World Values Survey (e.g., Inglehart et al., 1998) has mapped cross-national differences in the importance of a number of self-serving and altruistic

The many national reasons for volunteering recorded reveal that a country can be low in self-serving motives and high in altruistic motives (e.g., China), high in self-serving motives and low in altruistic motives (e.g., West Germany), or low in both (e.g., Denmark and Italy), but that a majority of countries tend to be high in both (e.g., Brazil, Bulgaria, Lithuania, and Nigeria). It should be noted that this country-level observation cannot tell us whether the inhabitants' normative and gain frames are compatible or not, let alone whether the negative or positive individual-level interdependence between self-serving and altruistic motivations is dependent on characteristics of the national context such as climate and wealth. A further study was designed to focus on these issues (Van de Vliert, Huang, and Levine, 2004).

This study included 33 countries whose residents' reasons for doing unpaid voluntary work had been assessed using the 1990–1993 World Values Survey ($n = 13,584$ respondents; World Values Study Group, 1994; Inglehart et al., 1998). The study dealt solely with people who did voluntary work and the question was why do they do it? If our theory was correct, then under demanding climatic conditions (hot or cold) in rich countries, voluntary workers would show compatible normative and gain frames; that is, they would show a positive correlation between altruistic and self-serving motivations (weak solidarity). In temperate climates, these motivations would be moderate and unrelated, irrespective of the wealth of the country. Under demanding climatic conditions in poor countries, the expectations were that voluntary workers would be driven solely by a normative frame, that is, they would be motivated solely by altruistic motives (strong solidarity), and that self-serving motivations would not support their altruistic motives, or would even detract from them.

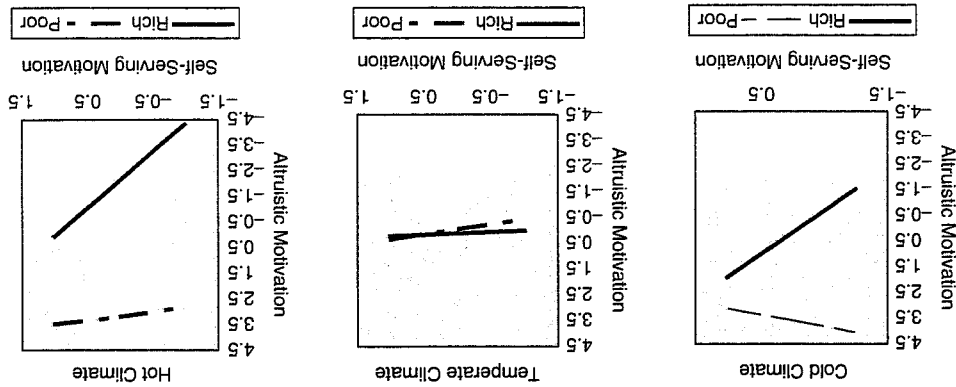
The findings were as follows. A gain frame was indicated by self-serving motivations, which were represented by "Time on my hands, wanted something worthwhile to do"; "Purely for personal satisfaction"; "For social reasons, to meet people"; "To gain new skills and useful experience." A normative frame was indicated by altruistic motivations, which were represented by "A sense of solidarity with the poor and disadvantaged"; "Compassion for those in need"; "Identifying with people who were suffering"; "Religious beliefs"; "To help give disadvantaged people hope and dignity." A stepwise multilevel analysis was conducted to predict the compatibility or incompatibility of the frames. In step 1, country-level individualism-collectivism was controlled for because this cultural dimension is positively associated with both colder climates and national wealth, and because the collectivism pole of the dimension is an indicator of solidarity with members of in-groups rather than members of society at large (Hofstede, 2001). In steps 2 and 3 the individual-

self-serving motivation in step 2, and the cross-national variation in the relationship between self-serving motivation and altruistic motivation in step 3). In step 4 average climatic temperature, temperature-squared, and gross national income per capita were entered. The two-way interactions followed in step 5, and the three-way interactions in step 6.

The analysis revealed that cultural individualism-collectivism at the country level does not play a part (step 1), that self-serving motivation at the individual level is positively related to altruistic motivation (step 2), and that the link between self-serving motivation and altruistic motivation varies considerably from one nation to another (step 3). The most important finding, in step 6, showed that while a voluntary worker's self-serving and altruistic motivations are unrelated in low-income and high-income countries with temperate climates, they tend to be positively linked in high-income countries with cold or hot climates (see Figure 13.2). Moreover, while a voluntary worker's altruistic motivations tend to be moderate and equally high in low-income and high-income countries with temperate climates, they tend to be higher in poor countries with cold or hot climates than in rich countries with cold or hot climates. In addition, in poor countries with demanding climates, voluntary workers seem to be motivated solely by altruistic motives.

Four general conclusions may be drawn that relate to solidarity frames and solitary behaviors. First, volunteers worldwide are driven by a complex fabric of self-serving and altruistic reasons for doing unpaid work. This conclusion emphasizes the generalizability of the complexity of motivations for doing voluntary work from North America (for overviews, see Clary and Snyder, 1991; Clary et al., 1998; Schroeder, Penner, Dovidio, and Piliavin, 1995) and Germany (Bierhoff, 2001) to other continents and countries. The classic debate of egoistic helping versus altruistic solidarity appears to be oversimplified. Second, a voluntary worker's self-serving and altruistic motivations tend to be especially positively linked in high-income regions with cold or hot climates (e.g., Scandinavia), and tend to be unrelated in high- and low-income regions with temperate climates (e.g., Southern Europe and the southern part of South America) and in low-income regions with cold climates (e.g., the Baltic States) or hot climates (e.g., West Africa around the Gulf of Guinea). Third, especially in depressed countries where the climatic demands are maximal and the financial resources minimal, volunteering seems to be driven mainly by altruistic motivation. All these points support expectations generated from our theory. While this is not a conclusive test of our theory, it lends considerable support to our view of the way wealth, climate, and framing interact in bringing forth different kinds of solitary behavior.

Figure 13.2. Relationship between self-serving and altruistic motivations for doing voluntary work in countries with cold, temperate, and hot climates, broken down for high-income countries (broken lines) and low-income countries (unbroken lines)



Conclusion

There are contradictory findings about the influence of wealth on solitary behavior. Some researchers have found that people behave more solidarily in rich countries (supposedly because they have money to spare) than in poor countries. Other researchers have found that people help more in situations of daily living in poor countries than in rich countries (supposedly because prosperity makes people more selfish). We showed that when the simultaneous effects of wealth, climatic demands, and framing effects are considered, the puzzle of contradictory findings can largely be solved. The theory we developed can be summarized as follows.

Demanding climates create a strong need for private and public resources to deal with the homeostatic needs of individuals. When the country is poor, this enormous need for resources creates strong solidarity in the small circle and in situations of daily living but also selfish and opportunistic behavior across groups. In terms of framing, such situations create incompatibility between normative and gain frames. The people toward whom one's behavior is solidary (the small circle) are separated from the people toward whom one may act opportunistically (people from out-groups). When such countries become rich, there is less need for the helping hand of the small circle and more need for normative regulation of "system interdependence" (i.e., of behavior among members of society, be they friends or strangers). The solidarity norms, formerly so prominent in the small circle, thus do not vanish but change into norms supporting egalitarianism, tolerance, and respect for strangers. The likely result is that solidarity becomes intertwined with gainful interactions with acquaintances and strangers, and it is thus used as a regulatory means for achieving gain. In this way, normative and gain frames become compatible and are combined in a weak form of solidarity across groups (with values of egalitarianism, tolerance, and respect). People in rich countries with demanding climates seem to show more solidarity in general values and state provisions, whereas people in poor countries with demanding climates seem to show a greater tendency to help in situations of daily living with little altruism across groups. This finding goes a long way toward solving the puzzle of contradictory findings in the literature. Countries in temperate climates have neither the specific climate-driven source of solidarity nor the climate-driven competition for resources. For this reason, both solidarity and self-serving behavior are likely to be more dependent on idiosyncratic circumstances (hence moderate on average) and unrelated. We showed in this chapter that the evidence from studies that allows us to trace the simultaneous effects of wealth and climate supports this theory of solidary behavior at the collective

References

- Ambler, H.R. (1968). Thermal comfort in hot and temperate climates. *Journal of Tropical Medicine and Hygiene*, 71, 294-296.
- Bierhoff, H.W. (2001). Responsibility and altruism: The role of volunteerism. In A.E. Aubagen and H. W. Bierhoff (Eds.), *Responsibility—the many faces of a phenomenon* (pp. 149-166). London: Routledge.
- Clary, E.G., and Snyder, M. (1991). A functional analysis of altruism and prosocial behavior: The case of volunteerism. In M.S. Clark (Ed.), *Prosocial behavior* (pp. 119-148). Newbury Park, Calif.: Sage.
- Clary, E.G., Snyder, M., Ridge, R.D., Copeland, J., Stukas, A.A., Haugen, J. et al. (1998). Understanding and assessing the motivations of volunteers: A functional approach. *Journal of Personality and Social Psychology*, 74, 1516-1530.
- Curtis, J.E., Grabb, E.G., and Baer, D.E. (1992). Voluntary association membership in fifteen countries: A comparative analysis. *American Sociological Review*, 57, 139-152.
- Diener, E., Diener, M., and Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, 69, 851-864.
- Diener, E., and Oishi, S. (2000). Money and happiness: Income and subjective well-being across nations. In E. Diener and E.M. Suh (Eds.), *Culture and subjective well-being* (pp. 185-218). Cambridge, Mass.: MIT Press.
- Emans, B., Laskewitz, P., and Van de Vliert, E. (1994). The Netherlands. In M.A. Rahim and A.A. Blum (Eds.), *Global perspectives on organizational conflict* (pp. 53-66). Westport, Conn.: Praeger.
- Fanger, P.O. (1972). Near future prospects of the meteorological environment in developing countries in deserts and tropical areas: Improvement of human comfort and resulting efforts in working capacity. *Biometeorology*, 5, 11.
- Hofstede, G. (Ed.). (1998). *Masculinity and femininity: The taboo dimension of national cultures*. Thousand Oaks, Calif.: Sage.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across cultures*. Thousand Oaks, Calif.: Sage.
- Inglehart, R., Basañez, M., and Moreno, A. (1998). *Human values and beliefs: A cross-cultural sourcebook*. Ann Arbor, Mich.: University of Michigan Press.
- Inkeles, A. (1997). *National character: A psycho-social perspective*. New Brunswick, N.J.: Transaction Publishers.
- Levine, R.V., Norenzayan, A., and Philbrick, K. (2001). Cross-cultural differences in helping strangers. *Journal of Cross-Cultural Psychology*, 32, 543-560.
- Lindenberg, S.M. (1998). Solidarity: Its microfoundations and macro-dependence. A framing approach. In P. Doreian and T.J. Fararo (Eds.), *The problem of solidarity: Theories and models* (pp. 61-112). Amsterdam: Gordon and Breach.
- Lynn, R. (1991). *The secret of the miracle economy: Different national attitudes to competitiveness and money*. Exeter, Eng.: Social Affairs Unit.
- Parker, P.M. (2000). *Physioeconomics: The basis for long-run economic growth*. Cambridge, Mass.: MIT Press.
- Parsons, K.C. (1993). *Human thermal environments: The effects of hot, moderate and cold environments on human health, comfort and performance*. London: Taylor and Francis.
- Rognes, J.K. (1994). Norway. In M.A. Rahim and A.A. Blum (Eds.), *Global perspectives on organizational conflict* (pp. 67-86). Westport, Conn.: Praeger.
- Sachs, J. (2000). Notes on a new sociology of economic development. In L.E. Harrison and S.P. Huntington (Eds.), *Culture matters: How values shape human progress* (pp. 29-43). New York: Basic Books.
- Schroeder, D.A., Penner, L.A., Dovidio, J.F., and Piliavin, J.A. (1995). *The psychology of*

- Schwartz, S.H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, 25, 1–65.
- Schwartz, S.H. (1994). Beyond individualism/collectivism: New cultural dimensions of values. In U. Kim, H.C. Triandis, C. Kagitçibasi, S.C. Choi, and C. Yoon (Eds.), *Individualism and collectivism: Theory, method, and applications* (pp. 85–119). Thousand Oaks, Calif.: Sage.
- Sorokin, P.A. (1928). *Contemporary sociological theories*. New York: Harper and Brothers.
- Triandis, H.C. (2000). Cultural syndromes and subjective well-being. In E. Diener and E.M. Suh (Eds.), *Culture and subjective well-being* (pp. 13–36). Cambridge, Mass.: MIT Press.
- Van de Vliert, E., Huang, X., and Levine, R.V. (2004). National wealth and thermal climate as predictors of motives for volunteer work. *Journal of Cross-Cultural Psychology*, 35, 62–73.
- Van de Vliert, E., Huang, X., and Parker, P.M. (2004). Do colder and hotter climates make richer societies more, but poorer societies less, happy and altruistic? *Journal of Environmental Psychology*, 24, 17–30.
- Van de Vliert, E., Schwartz, S.H., Huisman, S.E., Hofstede, G., and Daan, S. (1999). Temperature, cultural masculinity and domestic political violence: A cross-national study. *Journal of Cross-Cultural Psychology*, 30, 291–314.
- Weber, M. (1961). *General economic history*. New York: Collier Books.
- World Values Study Group. (1994). *World values survey, 1981–1984 and 1990–1993*. Ann Arbor, Mich.: Interuniversity Consortium for Political and Social Research (ICSPR).