Journal of Neuroscience, Psychology, and Economics
2014, Vol. 7, No. 3, 174–193


1937-321X/14/$12.00 http://dx.doi.org/10.1037/npe0000024

# Attitude Toward Health Insurance in Developing Countries From a Decision-Making Perspective

Tobias Kalenscher
Heinrich-Heine University Düsseldorf

This article provides an analysis of the demand side of health insurance from a decision-making perspective. I will address in particular why take-up of affordable health insurance products in developing countries may be low despite their obvious benefits for the insurant. Without any doubt, (negative) attitudes toward the idea of health insurance are influenced by multiple factors and have their roots in financial, cultural, traditional, religious, cognitive, experiential, and other reasons. However, in this discussion article, I maintain that, in addition to these reasons, there are psychological causes explaining low insurance take-up that have so far been insufficiently considered in the literature and that have their roots in unfavorable decision-making patterns. Low take-up of health insurance can be partly explained by both a strong present bias when making decisions about the future, leading to difficulties to act in accordance with one's long-term interests, and the unreadiness to be part of a caring society of insurees when no direct benefit for the contributor or his close kin is immediately evident. Effective policies aimed at increasing the demand for insurance need to exploit and modify people's present-bias, and modulate and expand (perceived) group boundaries to foster cooperative attitudes to all members of the caring society, even if they are strangers.

*Keywords:* health insurance, intertemporal choice, prosocial, altruism, parochialism



Inadequate access to health care is a cardinal cause for the persistence of poverty and a major factor in worsening the burden of the poor. Nothing illustrates the link between poverty and health better than the wealth-dependency of life expectancy: Whereas the average life expectancy at birth in most wealthy countries ranges between 75 and 85 (in 2008, Germany, for instance, had a gross national income per capita per annum of $32,680 and life expectancy was 77/82, m/f), life expectancy in countries with a smaller per capita income, such as Kenya (average income per capita per annum $ 1,470) lies significantly lower at 52/55 years (m/f; WHO, 2008). Consequently, improving access to health care for the poor is of paramount importance to alleviate poverty and enhance well-being and longevity. According to the 2000/2001 World Development Report, "reducing vulnerability to economic shocks, natural disasters, ill health, disability, and personal violence, is an intrinsic part of enhancing well-being of the poor and encourages investment in human capital and in higher-risk, higher-return activities" (World Bank, 2001, p. 7).

To meet the challenge of improving access to health care services for the poor, Kenya, for instance, is currently experiencing a transition in the organization of its health care systems. The present system consists of multiple, mainly informal health-providing and financing institutions that are hierarchically organized, yet have sketchy fields of responsibilities. Recently, efforts have been made to push toward crowding out of informal insurance networks into general health care plans with the goal of providing affordable universal health care for a maximum

This work was in parts financially supported by the Kenyan branch of the "Deutsche Gesellschaft für Internationale Zusammenarbeit" (GIZ). I thank Klaus Hornetz (GIZ) for his inspiring ideas and comments and for his support of this work. I would also like to thank Jens Holst for reviewing and editing an earlier version of this article and making invaluable suggestions that helped improve this article.

Correspondence concerning this article should be addressed to Tobias Kalenscher, Comparative Psychology, Institute of Experimental Psychology, Heinrich-Heine University Düsseldorf, Universitätsstr. 1, 40225 Düsseldorf, Germany. E-mail: Tobias.Kalenscher@hhu.de

number of people, including the poorest of the poor. For example, the National Hospital Insurance Fund (NHIF), one of Kenya's most respected insurance companies, has designed a microinsurance product that costs KSH 1920 (approx. $20) per year per household and covers all inpatient costs for up to five household members.

Such a microinsurance product is strongly needed. A recent survey among people in Kenya's Kirinyaga district and among members of the Jua Kali community in Nairobi revealed that 10% of the household heads, 9% of the spouses, and 20% of the children required hospital care at least once within 2 years (M. Chemin et al., personal communication, 2010). Each hospital visit cost on average KSH 20,000. Moreover, 45% of the uninsured individuals in the Kirinyaga district and Jua Kali community did not use medical treatment because of prohibitive costs. Yet, despite the obvious need for health care plans, only 4% of the three bottom income quintiles in Kenya have health insurance (Xu, James, Carrin, & Muchiri, 2006). Hence, the requirement for health insurance does not automatically translate into a higher demand of microinsurance products. Low take-up of health insurance is not only a Kenyan problem. Despite recent efforts to promote social health insurance schemes and make insurance accessible even for the very poor (Carrin, Doetinchem, Kirigia, Mathauer, & Musango, 2008), substantial parts of the population in other low-income countries, such as Lesotho (Mathauer, Doetinchem, Kirigia, & Carrin, 2007), Ghana (Durairaj, D'Almeida, & Kirigia, 2010), Rwanda, and other parts of Africa (Carrin et al., 2008), Vietnam (Nguyen & Akal, 2003), and also middle-income countries, such as Argentina (Cavagnero, Carrin, & Torres, 2010) are still excluded from health care coverage. Even in economically more advanced countries, such as the U.S., demand for affordable health insurance can be low: in a study on low-income workers in the U.S., Chernew and colleagues concluded that even massively lowering insurance premiums, or subsidizing premiums, did not result in universal, or near-universal, participation (Chernew, Frick, & McLaughlin, 1997). Thus, although it is undisputed that financial and institutional reasons account for part of the variance in the demand for insurance products in low-income and more developed countries, factors other than mere economic considerations must also play a role in the decision to take up health insurance, too.

Why do people opt against taking up health insurance although this decision is against their best economic interest? In this discussion article, I will provide an analysis of the demand-side of health insurance. In particular, I will focus on one account according to which the low demand for microinsurance has its roots in unfavorable decision-making patterns.

Clearly, the phenomenon of low insurance take-up is multifaceted. Substantial evidence suggests that (negative) attitudes toward the idea of health insurance have their roots in financial, cultural, traditional, religious, cognitive, experiential, and other grounds (Banerjee, Benabou, & Mookherjee, 2006; Carrin et al., 2008; Durairaj et al., 2010; Mathauer et al., 2007; Xu et al., 2006). For instance, many potential insurance candidates may simply be unable to afford even very low-priced insurance products, or they have other priorities. Another reason for rejecting health insurance offers seems to be a fundamental distrust in governmental or private institutions, that is, potential insurees simply do not believe that the insurance company will pay when needed. Also, there is evidence that many insurance products in the developing world are poorly designed and do not meet the needs of the poor (Banerjee et al., 2006). However, in this discussion article, I maintain that, in addition to these fundamental problems and doubts, there are psychological reasons explaining low insurance take-up that have so far been insufficiently considered in the literature: I argue in particular that several of the motives underlying low use of affordable insurance offers can be captured from a decision-making perspective. Specifically, I propose that low take-up of health insurance can be explained by (a) a strong present bias and difficulties to act in accordance with one's long-term interests when making decisions about the future, and (b) the unreadiness to support systems based on the principle of a caring society when no direct benefit for the contributor or his close kin is immediately evident. For instance, people may be discontent to pay regular insurance premiums because they do not want their contribution to be used for a stranger's benefit instead of his own or his kin's benefit, even if the consequence of the alternative—not paying

premiums—means the relinquishment of access to health care, and, hence, worse health eventually. Thus, even though people would be better off in the long run with proper health insurance, their attitude toward it may be strongly influenced by social and emotional motives that make it difficult for them to act in accordance with their long-term interests. I will provide an academic review on the role of time in decision-making and the influence of perceived group boundaries on the willingness to invest into solidarity-based insurance systems. I will conclude every section with policy suggestions on how to increase take-up of microinsurance and how to change negative attitudes toward health care plans.

## Intertemporal Choice and Health Insurance

### Intertemporal Choice

It has long been recognized that people *discount* future rewards and benefits, that is, they consider future rewards and benefits less attractive than the same rewards and benefits available immediately (Ersner-Hershfield, Wimmer, & Knutson, 2009; Fishburn & Rubinstein, 1982; Frederick, Loewenstein, & O'Donoghue, 2002; Green, Fristoe, & Myerson, 1994; Green & Myerson, 1996; Green, Myerson, & McFadden, 1997; Kalenscher, 2009; Kalenscher, Ohmann, & Güntürkün, 2006; Kalenscher & Pennartz, 2008; Kalenscher & Tobler, 2008; Kirby & Herrnstein, 1995; Koopmans, 1960; Laibson, 1997; Lancaster, 1963; Rachlin, Raineri, & Cross, 1991; Samuelson, 1937). Decisions over time and the decreased attractiveness of a delayed reward relative to an immediately available reward has been captured by economic theory already more than 70 years ago (Samuelson, 1937).

Economic theory assumed that people should make rational decisions over time. Rational intertemporal decision making entails time-consistent preferences and a constant discount rate (Fishburn & Rubinstein, 1982; Frederick et al., 2002; Kalenscher & Pennartz, 2008; Koopmans, 1960; Lancaster, 1963; Loewenstein, 1987, 1992; Prelec & Loewenstein, 1991; Samuelson, 1937). Time-consistent preference means that a rational decision maker should preserve his preference orders across time such that what is preferred one time will be preferred at another time, too. For example, a decision maker preferring the sooner consumption of a mildly attractive commodity over the later consumption of a better commodity should also prefer the sooner, less attractive commodity over the more attractive, but later commodity if a common delay was added to both options, that is, if both options were deferred into the future by the same time interval. Preferences are time-consistent if the rate by which rewards are discounted is constant: The relative decrease in value if a commodity is delayed by one time unit should be identical for all points in time. For example, if delaying the receipt of $10 by one day cuts the subjective value of this amount in half ($10 tomorrow is only half as desirable as $10 today), then delaying the receipt of $10 in 1 year by 1 day (so that it will now be received in 1 year and 1 day) should also cut the value of this amount in half.

### Time-Inconsistent Preferences

Intuition and common sense suggests that these rationality assumptions are rarely met in real life. Most people aim for achieving positive goals in the future, such as maintaining good health, but often fail to act in accordance with their own goals, for example, by regularly succumbing to the temptation of consuming unhealthy food. This shows that people often sacrifice more desirable long-term consequences for less desirable, but immediately gratifying rewards. Such time-inconsistent preferences have been observed in a myriad of laboratory and field studies (Ainslie, 1975; Ainslie & Haslam, 1992; Anderson, Dietz, Gordon, & Klawitter, 2004; Benzion, Rapoport, & Yagil, 1989; Ernst et al., 2004; Frederick et al., 2002; Green et al., 1994; Green et al., 1997; Kalenscher & Pennartz, 2008; Kirby et al., 2002; Kirby & Herrnstein, 1995; Loewenstein, 1992; Logue, 1988; McClure, Ericson, Laibson, Loewenstein, & Cohen, 2007; Rohde, 2005; Tanaka, Camerer, & Nguyen, 2006; Thaler & Shefrin, 1981).

For instance, Green, Fristoe, and Myerson (1994, 1997; cf. also Frederick et al., 2002; Kirby & Herrnstein, 1995; Prelec & Loewenstein, 1991) reported that, when participants chose between a small, short-term and a large, delayed monetary reward and both rewards were deferred into the future by a fixed interval (or advanced in time, respectively), preference

for the small reward decreased with increasing temporal distance to its receipt, and preference for the large reward increased with increasing delay preceding the small reward. For example, many subjects preferred to receive $10 today over $20 in 6 months, but they *did not* prefer $10 in 5 years over $20 in 5 years and 6 months. According to this so-called *common-difference effect*, the prolongation of the delays preceding two rewards by a fixed interval often results in a preference reversal even though the difference in delays remains identical. In its extreme form, a literal discontinuity of preference can be observed when immediate rewards are involved (the so-called *immediacy effect*; (Benzion et al., 1989; Thaler & Shefrin, 1981). These very strong and stable laboratory findings have been replicated and extended in a number of field studies (Anderson et al., 2004; Ashraf, Karlan, & Yin, 2006; Kirby et al., 2002; Kurosaki & Kurita, 2009; Lawrance, 1991; Nielsen, 2001; Pender, 1996; Tanaka et al., 2006). Hence, people are often powerfully biased toward seeking short-term rewards and reverse their time-preference whenever the prospect of immediate consumption becomes available. In other words, the presence for short-term rewards may interfere with the ability to carry out long-term plans.

### Hyperbolic Discounting

Preference reversals as discussed above cannot be explained by constant discount functions, such as exponential discounting. As theoretically suggested (Ainslie, 1975) and later empirically confirmed in an abundance of studies in the laboratory (Benzion et al., 1989; Glimcher, Kable, & Louie, 2007; Green & Myerson, 1996, 2004; Grossbard & Mazur, 1986; Kable & Glimcher, 2007; Mazur, 1984, 1988; Mazur, Commons, Mazur, Nevin, & Rachlin, 1987; Rachlin et al., 1991; Rohde, 2005; Thaler & Shefrin, 1981) and in the field (Anderson et al., 2004; Ashraf et al., 2006; Hausman, 1979; Kurosaki & Kurita, 2009; Lawrance, 1991; Nielsen, 2001; Pender, 1996; Tanaka et al., 2006), rewards delivered with short delays are more steeply discounted than rewards with longer delays. Such discounting patterns are very well approximated by mathematical functions that explicitly *do not* assume constant discounting, such as hyperbolic functions, but are less well explained by the type of discount functions presumed to underlie rational decision making, such as exponential discounting. Hyperbolic discounting is characterized by high discount rates over short time horizons, but low discount rates over long horizons. Most importantly, as illustrated in Figure 1, hyperbolic discounting places disproportionately high priority on immediate or short-term benefits so that rewards available in the short run are desired significantly stronger than rewards available in the long run.

To illustrate this implication, Figure 1 plots the time-dependent subjective values (that is, their attractiveness depending on the delay to realization) for two rewards differing in quantity and delay and shifted to the future by the same time interval. Figure 1A shows the value curves for exponentially discounted rewards, Figure 1B displays the curves for hyperbolically discounted rewards. In the exponential model, the value of the large reward $V_L$ exceeds the value of the small reward $V_S$ in both temporally proximal and distant reward situations because of the model's constant discount rate ($V_L > V_S$ always holds; cf. Figure 1A). In contrast to this, the discount rates in the hyperbolic model are not constant over time. Instead, as mentioned, hyperbolic discounting is characterized by high discount rates over short time horizons, but low discount rates over long horizons. This results in the reversal of the order of values, as illustrated in Figure 1B: Although the small reward value is higher than the large reward value ($V_S > V_L$) in the temporally proximal reward situation, $V_S$ is smaller than $V_L$ ($V_L > V_S$; cf. Figure 1B) for distant rewards, yet the time difference between both rewards is identical in the proximal and distant situation.

The reasons why humans discount temporally proximal events steeper than temporally distant rewards are still a matter of debate. It has been hypothesized that hyperbolic discounting is intrinsic to the brain systems involved in computing economic utility, reward and time (Glimcher et al., 2007; Hariri et al., 2006; Kable & Glimcher, 2007; Kalenscher & Pennartz, 2008; Kalenscher et al., 2005; Kim, Hwang, & Lee, 2008). In addition, several models in psychology and economics posit that a conflict between one's preferences today, and the preferences that will be held in the future causes the particular kink in the discount function (Laib-

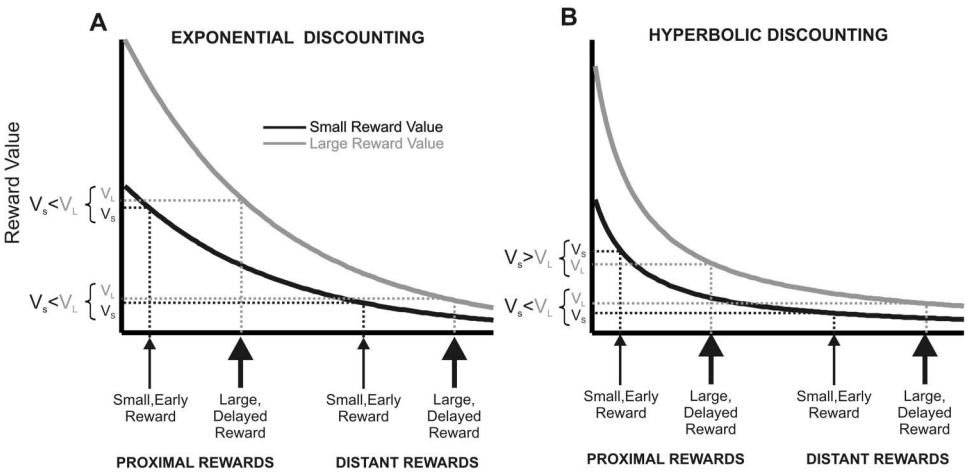


*Figure 1.* Preference reversals can be better explained by hyperbolic than exponential discounting. The figure depicts the situation where a subject first chooses between a small, early and a large, delayed reward (proximal rewards), and subsequently, both rewards are deferred in time by the same time interval (distant rewards), thus preserving the delay-difference between them. The figure plots the discounted value of a future reward (*y*-axis) as a function of reward amount and delay. Gray lines represent the discounted value of the large reward, black lines the value of the small reward. (A) The *x*-axis depicts the delay to the reward, fat arrows indicate a large, delayed reward, slim arrows a small, early reward. Due to constant discounting in the exponential function, the value of the large, delayed reward $V_L$ is larger than the value of the small, early reward $V_S$ when both rewards are temporally proximal, and also when they are deferred by the same time interval, so that always holds $V_S < V_L$. (B) In hyperbolic discounting, the values of large and small rewards reverse when they are deferred into the future: whereas $V_S > V_L$ when both rewards are relatively close in time, $V_S < V_L$ when they are relatively distant. Adapted from "Is a Bird in the Hand Worth Two in the Future? The Neuroeconomics of Intertemporal Decision-Making," by T. Kalenscher and C. M. Pennartz, 2008, *Progress in Neurobiology, 84*, p. 289. Copyright 2007 by Elsevier.

son, 1997; Loewenstein, 1987, 1992; Loewenstein, 1988; McClure et al., 2007; McClure, Laibson, Loewenstein, & Cohen, 2004; Prelec & Loewenstein, 1991). It is as if an agent's current "self" exhibits different preferences than his future "self." Several authors have therefore proposed that the processes resulting in this "intrapersonal dynamic conflict" can be modeled by positing multiple economic "selves"[1] in time (Fudenberg & Levine, 2006; Laibson, 1997; Thaler & Shefrin, 1981): There would be two "selves" within one person, a myopic and a far-sighted "self," who alternately take control over behavior. Although not every author explicitly referred to temporally situated "selves." many made comparable assumptions, and posited the existence of separate, competing decision processes, for example a "hot" emotional process, dealing for instance with the emotional temptation of short-term goals, the discomfort of deferring a proximate goal, or the impatience to realize a goal, versus a "cool" reasoning system involved in economic planning and cost-benefit trade-offs (Fudenberg & Levine, 2006; Loewenstein & O'Donoghue, 2004; McClure et al., 2007; McClure et al., 2004; Metcalfe & Mischel, 1999; Sanfey, Loewenstein, McClure, & Cohen, 2006).

In the present context, a likely candidate for a hot process that blurs the view on a person's long-term interest is the emotional antagonism against the idea that his insurance premiums may be used for the benefit of total strangers (see below for discussion). Both the hot and the cool processes operate at different time scales: The hot system applies more to immediate outcomes, whereas the cold system is relevant for

[1] The terminology of "multiple selves" is of course used in a metaphorical sense, the models certainly do not imply split personalities.

all sorts of outcomes, and the particular interplay of these two choice components produce hyperbolic discounting. For example, a decision maker may be very well aware of his long-term interests, but when an emotionally salient event is close in time, he may place such disproportionally strong priority on this event that the hot system overrules the cool system, and the decision is exclusively determined by the short-term, emotional motive. In the present context, a premium payer's unhappiness to pay regular premiums, and/or his anger and dissatisfaction about supporting strangers with his premiums may overrule any long-term consideration that he will actually benefit from the solidarity principle, too (again, see below for discussion).

Whatever the true reasons, it is literally unquestioned that rewards delivered with short delays are more steeply discounted than rewards with longer delays. This fact entails the very important implication that benefits close in time have a disproportionally higher impact on a decision than benefits farther away in time. This yields insights into some important real-life decision patterns: The typical bias toward the present is always at work when we break diets (short-term lure: enjoyment of unhealthy food; neglected long-term benefits: good health), postpone dental appointments (short-term lure: avoidance of looming pain; neglected long-term benefits: dental health), or accumulate credit card balances (short-term lure: the pleasures of shopping; neglected long-term benefits: saving money). In agreement with these intuitive examples, present bias and the degree of hyperbolicity during intertemporal choice have been associated with lifestyle-related chronic diseases (Sassi & Hurst, 2008), substance abuse and drug addiction (Bickel & Marsch, 2001; Bickel, Odum, & Madden, 1999; Kirby, Petry, & Bickel, 1999), problem gambling (Kalenscher, 2007; Madden, Petry, & Johnson, 2009; Petry & Casarella, 1999), credit card debt (Meier & Sprenger, 2009), default in microfinance (Anderson et al., 2004), financial illiteracy (Laibson, 1997; Meier & Sprenger, 2008), and poverty (Kurosaki & Kurita, 2009; Tanaka et al., 2006). The repercussions of these fundamental findings will be discussed in the next section.

### Individual Differences in Present Bias in the Developed and the Developing World

The degree by which people express present bias differs among individuals. Some people will almost always forgo immediate gratification for the sake of long-term benefits, and with others even the smallest temptations will impose severe self-control problems. Time-inconsistency also varies within individuals. Some people are able to make very far-sighted, self-controlled decisions in the morning, but they tend to become more and more impulsive during the course of the day. Research shows that, within individuals, the propensity for making time-inconsistent decisions strongly depends on the size of the expected reward (Green et al., 1997), the way a decision problem is formulated (Loewenstein, 1988), physiological factors such as the blood-glucose levels which vary during the day and are diet- and metabolism-dependent (Gailliot et al., 2007), and time-perception (Wittmann & Paulus, 2008). Between individuals, a multitude of factors have been shown to be correlated with the individual degree of present bias, including wealth and socioeconomic status (Hausman, 1979; Lawrance, 1991; Matthews, Flory, Muldoon, & Manuck, 2000; Tanaka et al., 2006), but see (Anderson et al., 2004; Nielsen, 2001; Pender, 1996), history with political systems (Tanaka et al., 2006), rural versus urban habitat (Anderson et al., 2004), education (Matthews et al., 2000; Meier & Sprenger, 2008), genetic make-up (Boettiger et al., 2007; Isles, Humby, Walters, & Wilkinson, 2004), substance (ab)use (Bickel & Marsch, 2001; Kirby et al., 1999), and mental health (Scheres, Lee, & Sumiya, 2008; Winstanley, Eagle, & Robbins, 2006).

A number of studies have investigated discount rates and present bias in developing countries, including Vietnam (Anderson et al., 2004; Tanaka et al., 2006), Thailand, and Pakistan (Kurosaki & Kurita, 2009), India (Kurosaki & Kurita, 2009; Pender, 1996), the Philippines (Ashraf et al., 2006), Madagascar (Nielsen, 2001), and Bolivia (Kirby et al., 2002). These studies revealed a rural-urban divide in present bias with rural residents showing steeper discounting than urban dwellers (Anderson et al., 2004). Moreover, several studies suggested that patience and time preference strongly depended on the stage of economic development as well

as personal and community wealth (Nielsen, 2001; Pender, 1996; Tanaka et al., 2006), but other studies could not reliably confirm this link (Anderson et al., 2004; Kirby et al., 2002). Nevertheless, poverty seems to be one of the driving forces behind impulsive decision making. In the U.S., household members with lower income discount future rewards steeper than members with higher incomes, even when controlling for race and education (Lawrance, 1991). It has therefore been argued that it is optimal for poor people to make short-sighted decisions (Ashraf et al., 2006): Individuals struggling to survive on a tight budget are less able to invest into their future than more affluent people. However, studies in the Philippines show that, without appropriate saving devices, poor individuals make even more impatient decisions than would be economically optimal given their wealth and purchasing power (Ashraf et al., 2006). This result is supported by recent studies indicating that there seems to be not only a correlative link between impatience and socioeconomic status, but poverty may actually be the cause driving people to make decisions against their long-term interest (Mani, Mullainathan, Shafir, & Zhao, 2013; Vohs, 2013). Interestingly, none of the studies reported clear, consistent results regarding gender, occupation, or age.

Poor communities have often developed devices allowing members unable to save for the future to nevertheless access large sums of money when needed. One such device is called "rotating savings and credit associations" (ROSCAs; Tanaka et al., 2006). ROSCAs are informal self-help financial groups that are widespread throughout the developing world. In general, in a ROSCA, participating people meet on a regular basis and contribute a modest sum of money to a general pool, which is then given to a chosen person in each period. Hence, ROSCAs are community-based ways to endorse saving and get regular access to lump-sums of cash. This money is often used to pay for hospital fees or medical treatment. Tanaka, Camerer, and Nguyen, 2006 describe two types of ROSCAs in Vietnam: "fixed" ROSCAs in which the order people draw from the pool is determined and fixed, and "bidding" ROSCAs in which people bid for the right to receive money earlier. There seems to be a connection between individuals' involvement in ROSCAs and time discounting. Tanaka et al. (2006) show that individuals participating in bidding ROSCAs are generally more impatient and present-biased than individuals participating in fixed ROSCAs, and the degree of impulsivity also seems to be related to the term (short-term vs. long-term) of the bidding ROSCA.

In summary, laboratory and field studies in the developed and the developing world shows that groups that are particularly vulnerable of making strongly present-biased, potentially detrimental decisions about the future are people of low-socioeconomic status, people with poor education, people with mental health problems, and/or a history of gambling or substance abuse.

## Implications for the Acceptance of a Health Insurance Plan

The wealth of information reviewed so far strongly suggests that present bias and myopic, time-inconsistent decisions seem to be an integral part of human nature, although their degree can vary between and within individuals. In light of this evidence, resistance against health insurance, in which regular premiums occur without any immediately visible benefit, might be considered natural to people who have no or little direct experience with organized, formal and global health systems. Potential reasons blurring the view on a person's long-term interest are the pain of paying regular premiums without being ill, or the emotional antagonism against the idea that his insurance contributions may be used for the benefit of total strangers. This paints a pessimistic, yet fortunately incomplete picture. Many people are aware of their present bias and use strategies to overcome their anticipated propensity to reverse preference over time. One of these strategies is called precommitment and refers to the deliberate narrowing of one's own decision space by purposely removing access to the tempting, but ultimately unfavorable choice alternative (Ariely & Wertenbroch, 2002; Ashraf et al., 2006; Crockett et al., 2013). For example, a person on a diet may anticipate that he will succumb to the temptation of eating chocolate cake when being directly exposed to the smell and sight of the cake. As a consequence, he may avoid going to a cake-selling café in the first place, and hence constrain his choice options by forestalling the opportunity to select the unfavorable, but tempt-

ing short-term offer. Precommitment seems to be an effective strategy to impose self-control not only on health- and dieting-related choices (Sassi & Hurst, 2008; Schwartz et al., 2014), but also to regulate financial decisions, such as saving for retirement, protecting oneself from spend-thrifting, and avoiding debt accumulation (Meier & Sprenger, 2008, 2009). Precommitment works as a policy implementation, too: It has been shown to substantially increase saving behavior of poor people in the Philippines (Ashraf et al., 2006) and increase private retirement provisions (Haynes, 2009). A successful policy intervention aimed at changing people's attitudes toward health insurance needs to exploit this human capacity to act upon one's own anticipated inconsistency in time preference.

## Policy Leverage

Based on these insights a multilevel policy strategy targeting negative attitudes toward health insurance might comprise the following elements:

**Social marketing and public education.** As outlined in detail above, one of the roots of rejecting health insurance is the lack of insight that one will be better off in the long run with than without insurance coverage. In fact, people may be reluctant to accept health insurance until they experience the actual need for it (see also below). Public information could foster and accelerate this awareness-gaining process. This could be achieved by advocating the individual benefits that come along with health insurance. For instance, an education campaign could highlight in a lively way that a health-insured individual will get access to much-needed medical treatment that would be denied to an uninsured individual. In general, scenarios used to illustrate the benefits of health insurance in marketing seem to be more efficient if they include mildly dramatic everyday situations that the target audience has frequently experienced than much more dramatic worst-case scenarios that the target audience has had very little exposure to. One could argue that the presence of hyperbolic time preferences speaks generally against the effectiveness of any social marketing campaign stressing the long-term benefit of health insurance. However, information stressing the long-term insurance benefits *can* be effective when framed in the right way. For instance, laboratory research has suggested that "episodic tagging" during intertemporal choice increases patience and decreases impulsive choice (Lebreton et al., 2013; Peters & Buchel, 2010). Episodic tagging means that the future alternative in intertemporal choice is presented together with an episodic tag, that is, a positive episode, such as a holiday, convalescence from disease, or general well-being, that coincides in time with the realization of the future alternative. Thus, the promotion of episodic future thinking by appropriately framing marketing information could support the effectiveness of campaigns aimed at improving the attitude toward health insurance.

**Legislation and regulation.** Marketing and information is certainly useful to educate the public and induce a deeper appreciation of the necessity of health insurance, but it is hardly sufficient to promote behavioral changes. The reason is that the target group simply may not have experienced the benefits of health insurance yet, while they do experience the adverse short-term effects on a regular basis (paying contributions means having less money available for other purposes). This may explain the higher level of approval in countries that already have a longer history of formal, mandatory health insurance, such as various Western European countries. Hence, actually experiencing the benefits of health insurance will make its abstract, far-sighted benefit more salient, and thus be most effective in improving attitude. Therefore, making prepayment for health insurance mandatory and installing automatic mechanisms for contribution payment may be necessary to ensure that a maximum of people have health protection. Making insurance mandatory will enable individuals to first-hand experience the beneficial long-term effects that would not be experienced without enforcement. However, an obvious flaw in this logic is that such legislation and regulation are means to patronize people, at least to some degree. Although one could argue that mandatory insurance implemented by democratically elected governments may reflect the will of the general public, coercion is usually *not* a good means to generate approval. Therefore, coercion, such as mandatory payments, should only be applied where necessary, and should always be accompanied by strategies to encourage voluntary insurance holdership, such as providing positive immedi-

ate incentives and exploiting self-control mechanisms, such as precommitment, as outlined below.

**Immediate incentives.** Offering immediate rewards when making far-sighted decisions supports behavior that brings about long-term benefits, even (or in particular) in strongly present-biased people. Rewarding the regular payment of insurance contributions with immediate benefits will incentivize closing insurance contracts because the introduction of immediacy to the decision problem will shorten the time-horizon from a long-term to a short-term perspective: whereas, originally, insurance enrolment entailed only long-term benefits, the association of contribution settlement with immediate rewards adds a short-term perspective to the decision problem. *Possible implementation:* Reliable contribution defrayal should be associated with several immediate, short-term incentives. For example, regular payments could lead to reduced contribution rates and could be accompanied by tax relief. However, this may induce unfair treatment of the poor since they are more vulnerable to financial shortages and may not benefit from tax reliefs. Alternative implementations may avoid this "richness-bias:" Contribution settlement could also go along with membership in a social organization that brings about certain privileges and advantages to its members. An example is the KaSAPI program in the Philippines where partnership with NGOs, cooperatives and rural banks offers special benefits for the insurants. Furthermore, enrollees may be eligible to discounts for health-related activities, such as sport events, or entertainment, for instance, free tickets for the cinema or football matches. Direct financial incentives are equally feasible, that is, participants actually receive money back in cash every time they pay their premiums on time.

**Precommitment.** As discussed above, many people are aware of what is best for them in the long run, but they fail to act accordingly because they become myopic for the future whenever an emotionally salient event is temporally close in time. If they have the chance to make far-sighted decisions in advance and in the absence of any short-term lures, they are more likely to decide in accordance with their long-term interests (Crockett et al., 2013). For example, poor individuals in the Philippines are more likely, when given the choice, to voluntarily opt for a savings account with a commitment feature that restricts their access to the funds and prevents them from spending their savings, thus resulting in a higher accumulation of savings than without a commitment feature (Ashraf et al., 2006). In line with this, commitment to health insurance schemes should be made in advance, thus long before the first premiums are due. *Possible implementation:* Precommitment policy recommendations are inspired by strategies that have been successfully adopted to promote long-term thinking in other, related areas, such as saving for retirement. For example, the "Save More Tomorrow"-scheme (SMarT; Haynes, 2009) aims at increasing private pension contributions to retirement funds via precommitment. According to this scheme, British employees can agree in advance to allocate a certain percentage of all their future salary increases toward their retirement savings. They have the chance to opt out of the scheme at any time. Adapted to the health care situation, employers could give their employees the opportunity to automatically direct a certain percentage of their salary to health insurance, and to increase the premium rate in proportion to future salary increases in exchange for better coverage and insurance performance.

## Intergroup Boundaries and Social Decision Making

Health insurance usually works according to a simple principle: The healthy support the ill. The insurees form a "caring society" in which every member pays premiums so that everyone is provided for according to predefined standards. In return, insurees obtain the right to claim care if necessary, even if the costs of the care exceed their financial means and accumulated premiums paid. The members of a "caring society" must back the concept of the insurance principle. In other words, they must accept the idea that their paid premiums may not be used for their own or their kin's benefits, but for the benefit of strangers, too. However, acceptance of this idea may be low, particularly in multiethnic regions, such as Kenya, that are ethnically more heterogeneous and fractionalized than more developed countries. As a consequence of ethnic fractionalization, the behavior of members of an ethnic group is often charac-

terized by high solidarity toward other members of the same ethnic group, and very low solidarity toward members outside of the group. In its extreme form, the unreadiness to let strangers benefit from one's own premium contributions results in the total rejection of the health insurance principle, even if the consequence is the relinquishment of access to health care in the long run. In reminiscence of the discussion on intertemporal choice, it has been proposed that the ability to make decisions in accord with one's own long-term interest is related to the ability to make decisions in accord with the interests of a larger social group with shared interests (Ainslie, 2001; Rachlin, 2002). In other words, delay discounting and altruism may have common origins. This hypothesis originally stemmed from the idea that altruistic acts may be motivated by anticipated reciprocation (Ainslie, 2001; Axelrod & Hamilton, 1981; Jones & Rachlin, 2006; Rachlin, 2002; Stevens & Hauser, 2004): tit for tat—if I do good to you, I can expect a favor in return. Because the characteristic of an altruistic act is the lack of immediate benefit to the actor, reciprocation will by definition always be delayed. This puts reciprocal altruism in the realm of an intertemporal choice: self-controlled individuals with shallow discounting of future rewards will be more likely to show altruistic acts than impulsive individuals because they will take even much delayed returned favors into consideration. In support of this, several studies have shown that self-controlled individuals are more altruistic than impulsive individuals, and that time-discount rates during intertemporal choice are associated with cooperative tendencies in experimental game situations in which a subject has to decide whether to cooperate or defect with another subject (the so-called prisoner's dilemma game; Harris & Madden, 2002; Stephens, McLinn, & Stevens, 2002; Stevens & Hauser, 2004). Thus, solidarity and time preference may be related constructs.

Most people, not only in scattered, multiethnic societies, show solidarity with others, but not with everyone alike. In an attempt to characterize with whom people cooperate and to what extent, Jones and Rachlin (2006) showed that the propensity to forego monetary benefits in exchange for another person's advantage depended on whether the other person was a close relative, a distant relative, a friend, an acquaintance, a remote social contact, or a stranger. Interestingly, the amount of money forgone for another person's benefit decreased hyperbolically with the perceived social distance to the other person. Much like hyperbolic time discounting (see above), hyperbolic social discounting implies inconsistency and discontinuity in interpersonal allocation of resources. Or, in other words, people are generous with their relatives and close friends, but their generosity decreases steeply, so that they are selfish when it comes to more socially distant individuals, and they don't discriminate between moderately and extremely socially distant individuals anymore (Strombach et al., 2014). Hence, people seem to draw sharp boundaries between a socially close in-group, toward which they show altruistic behavior, and a socially distant out-group, with which they are only little inclined to miss out on personal benefits for other people's advantage. The degree of hyperbolicity, that is, the social-distance-dependent speed at which generosity turns into selfishness, has been related to the tendency to show nonreciprocal altruism, that is, altruistic action when no reciprocation can be expected (Takahashi, 2007). In summary, these studies strongly suggest that people structure their social world according to perceived social distance. The perceived social structure has profound effects on people's tendency to show altruistic or selfish behavior toward others.

### In-Group/Out-Group Discrimination and the Rejection of the Insurance Principle

People have the tendency to accept personal costs to altruistically maximize the benefit of other in-group members, that is, peers that are perceived to be socially close, such as family or village members, while neglecting or even disproportionally increasing negative effects on outsiders (Bornstein & Ben-Yossef, 1994). They even do this when the harm caused to outsiders exceeds the benefit to insiders, so that the net well-being when taking everyone into account, is dramatically reduced, and even when their own well-being is also affected (Baron, 2009; Bornstein & Ben-Yossef, 1994). In fact, changing the balance between in-group well-being and out-group harm to the disadvantage of the out-group may be one of the motivating principles behind this behavior (Baron,

2009). Such so-called "parochialism" can be observed even in the laboratory under artificial conditions when novel individuals that do not know each other and have no other connection, are assigned to different groups based on random and meaningless nominal criteria, such as the color of their shirt, the preference for a painting style and so forth (Baron, 2009; Tajfel, 1982; Tajfel, Billig, Bundy, & Flament, 1971). An abundance of field experiments in the developed and developing world have confirmed the powerful effects of group-affiliation on social behavior. For example, nonhostile clans in Papua-New Guinea trust members of their own clan more than members of other clans (Bernhard, Fehr, & Fischbacher, 2006) in an economic exchange game in which confidence in reciprocation of investment is an essential feature (the so-called trust game). Male Israelian Jews trust Eastern males less than Ashkenazic males in the trust game (Fershtman & Gneezy, 2001), and in South Africa, low-income subjects of all skin colors trust high-income subjects of the other race less (Haile, Sadrieh, & Verbon, 2006). The level of trust and reciprocation of investment has been shown to depend on ethnic homogeneity and socioeconomic status across different groups in Zurich, Switzerland (Falk & Zehnder, 2007). Conditional cooperation between group members is high among members of one Ethiopian forest user group, but varies strongly between groups, and correlates with success in local forest management (Rustagi, Engel, & Kosfeld, 2010).

Moreover, trust and economic investment seems to be influenced by the history of political systems: Vietnamese subjects with a long exposure to communism tend to share less money with the poor, but are more trustworthy, whereas Vietnamese subjects more familiar with capitalist systems give more to poor outgroup members, and this donation seems to be stimulated by charitable motives (Tanaka et al., 2006). Cross-ethnic studies on the tendency to cooperate or defect in the prisoner's dilemma game (see above) have shown that subjects from collectivist societies, such as Asian individuals, are more likely to cooperate than subjects from individualistic societies, such as White Americans (Cox, Lobel, & McLeod, 1991). Another study found evidence for a so-called interindividual-intergroup discontinuity, that is, the tendency to be more competitive when the social and/or economic interaction is framed as an interaction between groups (i.e., groups compete against each other) than when the interaction is between individuals (Insko et al., 1994). Comparative studies in Zimbabwe, South Africa, Honduras, Tanzania, Kenya, Bangladesh, Peru, Uganda and Paraguay showed that the level of trust and reciprocation in the trust game strongly depends on local cultural norms (Cardenas & Carpenter, 2005). Finally, evidence from our lab shows that social discounting, that is, social-distance-dependent generosity levels, differs between individualistic and collectivistic cultures (Strombach et al., 2014).

In sum, there is substantial evidence from the laboratory and in particular the field suggesting that it is part of human nature to discriminate between social groups and show favorable, trustful, charitable, and cooperative behavior toward members of the in-group while neglecting or even exacerbating the interests of outgroup members.

This finding may yield insight into the negative attitude toward health insurance: One motive underlying the rejection of the insurance principle is this general human tendency to allocate resources based on social proximity because insurees may find it difficult to accept that their premiums may be used for the benefit of out-group members while in-group members do not directly profit from it. To understand the motivation to reject the idea of solidarity, and design effective policy interventions to change attitude toward global, formal health insurance, one needs to understand the reasons behind in-group favoritism and social discounting. In the following section, I will elaborate some of the determinants of in-group favoritism.

## Determinants of In-Group/Out-Group Discrimination

What is the cause of negative attitudes toward out-group members? One reason certainly is a history of social conflict between one's own group and other groups over control of resources, which was presumably intensified by a culture and mentality of interethnic hostility (Sherif, Harvey, White, Hood, & Sherif, 1961). Another likely reason is the general human tendency to be fond of those who share similar beliefs and attitudes and dislike those who don't (Byrne, 1969). However, this cannot be the

whole story. As outlined above, even entirely meaningless categorization of total strangers (e.g., based on shirt-color) who have no common history of conflict, no actual ongoing conflict and no shared beliefs produces in-group favoritism and out-group discrimination. Hence, people are willing to incur costs to the benefit of in-group members and to the harm of out-group members even if categorization is entirely arbitrary (Tajfel et al., 1971).

To explain this puzzling finding, Tajfel and colleagues suggested that in-group bias may be the result of a common human motivation to maintain positive self-identity (Tajfel, 1982; Tajfel et al., 1971). Because one's self-identity is to a large extent linked to social identity (identification with a group, such as a family or an ethnic group, or with a social category, such as a religious community), people may institute positively valued distinctiveness by affiliating with such a group or category.

But, again, this hypothesis captures only part of the reality. In several laboratory experiments, Yamagishi, Jin, and Kiyonari (1999) found that meaningless, artificial categorization of subjects into in-groups and out-groups produced more favorable evaluation and estimation of in-group than out-group members, but, notably, they found no materialistic favoritism whatsoever when financial resources were at stake. In a series of studies, the authors showed that subjects were only willing to share monetary resources with other in-group members if there was a culture of direct or generalized reciprocation, that is, when the altruistic subject could expect a returned favor either directly by the beneficiary who received the original favor (direct reciprocity), or by other in-group members because of a general accord on solidarity (generalized reciprocity). Hence, people were altruistic when they could realistically count on receiving favors, if not from the ones to whom they provided favors beforehand, then from others. This finding implies that people are in principle willing to cooperate or show altruistic behavior, but only if they have realistic hopes to receive something in return.

Yamagishi et al. (1999) suggested that the driving force in intergroup discrimination is the perpetuation of such a generalized exchange system. Such generalized exchange takes place in demarcated groups, thus they are bounded. Notably, this boundedness may be the original source of in-group/out-group discrimination because it clearly delineates from whom to expect help and from whom not, and hence also to whom to provide aid and to whom not. The expectation of such bounded generalized reciprocity creates a situation in which the bounded expectation of help, favor, and allotment of resources is a reality. On a larger scale, this implies that prosocial behavior toward in-group members and negligence of out-group interests may be the outcome of an adaptive mechanism: In-group favoritism may not simply be the product of abstract norms or intangible factors such as social identity, but rather it sustains itself by guaranteeing a social interaction basis that generates optimal care and well-being for all (Yamagishi, Jin, & Kiyonari, 1999).

This concept of bounded generalized reciprocity is supported by evidence obtained in field studies showing that strong in-group favoritism is, partly, explainable by realistic expectations. For example, the group-dependent expected returns to an investment in a trust game matched the actual returns (Falk & Zehnder, 2007): Members of a given regional and/or socioeconomic group shared less resources with members of another group than with members of their own group, but they also received less returns from members of other groups than from members of their own group.

These findings suggest that in-group favoritism when it comes to sharing actual resources may to a much lesser extent be due to intangible factors than previously thought. Instead, it may be understood as the outcome of a historical adaptive process that reached a social equilibrium in which it was clearly delineated with whom to cooperate and from whom to expect help. According to this idea, this equilibrium produced a state in which support and well-being was optimal for all members of the society. However, what may have been beneficial historically or locally, may not be optimal in today's globalized society. In other words, in-group favoritism has evolved because, historically, everyone was best cared for, but the desire to structure the world in narrowly delimited in- and out-group and behave accordingly may produce disadvantageous results in a global world in which people would be better off if they extended their group boundaries—as exemplified by the insurance principle where in-

surees should accept the idea that their premiums are used for the benefit of strangers. This problem can be illustrated by the above-mentioned ROSCAs: ROSCAs are adaptive saving tools allowing members to access large sums of money that they would otherwise be unable to obtain. The sum of cash is often used to pay for hospital fees or medical care. ROSCAs are, by definition, community-based and therefore limited to in-group members of the community. Thus, the fact that people who might otherwise be reluctant to accept health insurance offers are willing to engage in insurance-like devices like ROSCAs suggests that they are generally open-minded for the idea of insurance principles, but only if organized within their own community.

## Strategies to Promote Global-Scale Mutual Support

If the narrowness of the boundary separating in-group from out-group members is the reason for the rejection of the principle of a caring society, then effective intervention strategies need to aim at broadening the in-group/out-group boundary. Broadening this boundary should support the perception that all insurants, even remote strangers, are part of a larger, more inclusive group and are therefore as deserving of help than socially closer in-group members.

However, despite its potentially adverse implications, it is at the same time important to understand intergroup discrimination as a means to support self-interest. Consequently, it is strongly unadvisable to implement policies that aim at the reduction in identification with a social category, such as a local village, ethnic group, region, or religious group. Reduction of social identification will potentially produce adverse effects by lowering group cohesion, but will fail to tackle the real problems. Effective policy strategies need to identify existing group boundaries and extend these boundaries to include people of a single superordinate group, such as an entire nation, while preserving the value of the local social identities constituting the global group. Furthermore, it has been shown that sanction threats to enforce norm compliance, such as punishing evasion of premium-payments in health insurance, often produce adverse results, such as reduced willingness to cooperate and engage in mutual generalized exchange (Li, Xiao, Houser, & Montague, 2009). Consequently, efficient strategies to improve compliance with formal health insurance should not involve negative incentives, or, at least, be complemented with positive incentives.

One very crucial issue to consider when drawing strategy recommendations is that most interventions have been developed and tested under controlled laboratory conditions (for review, see Paluck & Green, 2009). Laboratory studies have the methodological advantage that variables are controlled so that positive or negative effects of the intervention can be accurately measured and evaluated. However, laboratory studies typically test quick fixes. In addition, the induction of group membership and discrimination in the laboratory is usually artificial, faint, and short-lived, but the real world is not so subtle. Intuitions in real life are much more heavy-handed and prejudiced beliefs and emotions much more rigid and inflexible than under laboratory conditions. Hence, every laboratory study needs to be tested in a field setting, and any policy recommendation should be backed by evidence from the field. However, unfortunately, sound field studies are very scarce, and most existing field studies have so severe methodological deficits (e.g., no control group or no manipulated intervention variable) that the results are virtually noninterpretable (Paluck & Green, 2009). The strategies recommended in the remainder of this article are based on a mix of methodologically sound field studies, complemented by laboratory work.

In addition, it would obviously be desirable to come up with policy recommendations that are implementable by private insurance companies to promote their products. However, the goal of broadening existing in-group/out-group boundaries that are deeply rooted in culture and society is almost unachievable by the private sector. The same also holds for governmental and public efforts to promote health insurance because most policies aimed at reducing prejudice and interethnic conflicts are certainly important in their own right, even without the added benefit of promoting health insurance, but are highly time- and resource-consuming, exceedingly cost-ineffective and, if intended *only* at improving take-up of health insurance, nonpermissively expensive. Therefore, the pol-

icy recommendations suggested here need to be understood as part of a larger scheme aimed at reducing prejudice and intergroup conflict in general that may create the positive externality to increase the willingness to purchase health insurance.

I suggest the following policy recommendations:

- Reduce intergroup bias and (overt and covert) conflict between groups. Intergroup conflicts can be overt, such as wars or disputes, or they can be expressed more subtly, for instance by prejudice and stereotypes against members of another group (Dovidio & Gaertner, 1999). There are several ways to reduce prejudice and stereotyping:
  - *Intergroup contact:* Exposure to members of the out-group and opportunity for personal acquaintance reduces prejudice and promotes cooperation across group boundaries. In order to be maximally effective, the members of the different groups should have equal status, share common goals and ideally support egalitarian motives. Further, the interaction should be sanctioned by authority (e.g., by leaders, seniors, supervisors, etc.) and any form of competition should be absent. Several laboratory and field studies show that intergroup contact can be highly efficient to reduce prejudice and intergroup bias under these optimal conditions (Cook, 1978; Paluck & Green, 2009; Pan & Houser, 2013). Intergroup contact could be implemented by fostering cooperative problem solving. One way is to create situations in which members of different groups are working together on a specially designed problem-solving task in an interdependent way, so that the problem can only be solved through cooperation and personal interaction. Such mutual efforts could be, for instance, supraregional projects, such as joint construction projects. In a controlled laboratory experiment, Pan and Houser (2013) could show that cooperate solving of puzzle problems increased beliefs in the trustworthiness of out-group members in the trust game, and at the same time reduced out-group discrimination and parochialism. In addition, field studies suggest that common camping trips in adolescents have been shown effective in reducing out-group hostility (Cook, 1978; Paluck & Green, 2009).
  - *Instruction and education:* Ignorance is often considered as one of the roots of prejudice. Training and education that specifically aims at improving statistical logic to prevent faulty group generalizations helps to reduce intergroup bias.
  - *Expert opinion and social norm information:* Prejudices and stereotypes are powerfully influenced by social norms and people are persuaded by expert opinions. People can learn that expert's beliefs are flexible and relative, and that racial stereotyping is not normative for their peer group. An effective approach to communicate norms that condemn prejudice and jaundice is to involve highly influential media strategies, such as mass media appeals. Mass media can be also used to provide stereotype-disconfirming information (Dovidio & Gaertner, 1999). Another successful strategy to this end is the broadcasting of tailored and entertaining radio- and TV-shows communicating desired norms and values. This has been shown to change perception of intergroup-related social norms in Rwanda (Paluck, 2009).
- Reduce the saliency of intergroup boundaries. Reducing the saliency of group boundaries may be the key to extending the solidarity typically shown toward in-group members to former out-group members and, when applied wisely, leaving social identity intact. The goal of all policies should be to modify peoples' understanding of group boundaries so that they think of group membership not in terms of several different groups (villages, ethnic groups), but in terms of one more global, more inclusive group, such as a nation (Dovidio & Gaertner, 1999).
  - *Decategorization ("me and you"):* Accentuate the individual identity of the members of the different groups. The perception of out-group members as actual individuals, and not as faceless, anonymous strangers has been shown to promote helping, cooperation, and other prosocial behaviors. Decategorization can be fostered through intensified social interaction which helps to individuate members of the out-group by exchange of opinion and intimate information. Interaction can be induced through instruction or encouragement from authorities, such as local politicians, leaders, role models, or others. This can be supported by encouragement for perspective taking (experience the other person's emotions). Several controlled randomized field experiments with schoolchildren who were told tales with or without explicit perspective-taking of the fate of children from other cultures or races produced very good results (Paluck & Green, 2009).

- *Recategorization ("us + them = we"):* People are actively encouraged to think of members from different groups as part of one inclusive superordinate group. Recategorization is an efficient tool to foster solidarity behavior in a global inclusive group (e.g., "health insurance for all Kenyans"). Recategorization could be achieved by repeatedly and strongly stressing the commonalities between groups in mass media appeals, and by emphasizing the saliency of symbols and cues that are shared by all subgroups constituting the inclusive superordinate group. A good example for a salient recategorization symbol is the proud identification of the Kenyan people with U.S. President Obama, who is often perceived as of Kenyan, not Luon, descendent.
- *Integration ("we"):* Dissolve group boundaries by depreciating existing group boundaries and appreciating more inclusive, more comprehensive group boundaries. Likely danger: probably prone to produce undesired effects, such as loss of group identities and hence lowered group cohesion.

## Concluding Comment

Even though the conclusions and policy and strategy recommendations promoted in this article are supported by a great wealth of data from the laboratory and the field, they are often more or less rough generalizations to the current context and as such admittedly tentative. Further research is necessary to determine whether the level of demand of health insurance in poor countries can be predicted by individual differences in (a) present-bias and (b) in-group/out-group bias. Individual present-bias and time preferences can be measured with standard intertemporal choice questionnaires (Haushofer et al., 2013; Kalenscher & Pennartz, 2008; Kirby et al., 1999), in-group/out-group bias can be measured in several ways, for instance by estimating the shape, steepness, and curvature of the social discount function mentioned above (Jones & Rachlin, 2006; Strombach et al., 2014). If the hypotheses promoted in this discussion article hold, present-bias, impulsiveness, and the strength of group solidarity should be correlated with the propensity to reject affordable health insurance offers. Furthermore, the policy recommendations presented here have been successfully applied to foster long-term thinking and increase retirement provisions (Haynes, 2009), support healthy lifestyles (Schwartz et al., 2014), increase saving behavior in poor people (Ashraf et al., 2006), improve cooperation across cultural, ethnic, and national boundaries, for instance, in multiethnic school settings, banking mergers, and blended families (Dovidio & Gaertner, 1999), and even successfully endorse prejudice reduction and conflict in postgenocide Rwanda (Paluck, 2009). However, again, it remains to be empirically evaluated whether they are also efficient in increasing the demand of health insurance in the context of the developing world. This needs to be tested in controlled randomized field experiments (Banerjee & Duflo, 2011) in which each of the above mentioned policies is implemented, and their effect on health insurance take-up is compared with take-up in a control condition in which a presumably ineffective, but otherwise similar control policy is applied. Research to this end is currently underway in the Mount Kenya region. We should stay tuned for new development in this field.

## References

Ainslie, G. (1975). Specious reward: A behavioral theory of impulsiveness and impulse control. *Psychological Bulletin, 82,* 463–496. doi:10.1037/h0076860

Ainslie, G. (2001). *Breakdown of will*. New York, NY: Cambridge University Press. doi:10.1017/CBO9781139164191

Ainslie, G., & Haslam, N. (1992). Self-control. In G. Loewenstein & J. Elster (Eds.), *Choice over time* (pp. 177–209). New York, NY: Russell Sage Foundation.

Anderson, C. L., Dietz, M., Gordon, A., & Klawitter, M. (2004). Discount rates in Vietnam. *Economic Development and Cultural Change, 52,* 873–888. doi:10.1086/381111

Ariely, D., & Wertenbroch, K. (2002). Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science, 13,* 219–224.

Ashraf, N., Karlan, D., & Yin, W. (2006). Tying Odysseus to the mast: Evidence from a commitment savings product in the Philippines. *Quarterly Journal of Economics, 121,* 635–672. doi:10.1162/qjec.2006.121.2.635

Axelrod, R., & Hamilton, W. D. (1981). The evolution of cooperation. *Science, 211,* 1390–1396. doi:10.1126/science.7466396

Banerjee, A. V., Benabou, R., & Mookherjee, D. (2006). *Understanding poverty*. New York, NY: Oxford University Press. doi:10.1093/0195305191.001.0001

Banerjee, A. V., & Duflo, E. (2011). *Poor economics. A radical rethinking of the way to fight global poverty*. New York, NY: Perseus Books Group.

Baron, J. (2009). Parochialism as a result of cognitive biases. In R. Goodman, D. Jinks, & A. K. Woods (Eds.), *Understanding social action, promoting human rights* (pp. 203–243). New York, NY: Oxford University Press.

Benzion, U., Rapoport, A., & Yagil, J. (1989). Discount rates inferred from decisions: An experimental study. *Management Science, 35,* 270–284. doi:10.1287/mnsc.35.3.270

Bernhard, H., Fehr, E., & Fischbacher, U. (2006). *Group affiliation, trust and social preferences*. Zurich, Switzerland: University of Zurich.

Bickel, W. K., & Marsch, L. A. (2001). Toward a behavioral economic understanding of drug dependence: Delay discounting processes. *Addiction, 96,* 73–86. doi:10.1046/j.1360-0443.2001.961736.x

Bickel, W. K., Odum, A. L., & Madden, G. J. (1999). Impulsivity and cigarette smoking: Delay discounting in current, never, and ex-smokers. *Psychopharmacology, 146,* 447–454. doi:10.1007/PL00005490

Boettiger, C. A., Mitchell, J. M., Tavares, V. C., Robertson, M., Joslyn, G., D'Esposito, M., & Fields, H. L. (2007). Immediate reward bias in humans: Fronto-parietal networks and a role for the catechol-O-methyltransferase 158(Val/Val) genotype. *Journal of Neuroscience, 27,* 14383–14391.

Bornstein, G., & Ben-Yossef, M. (1994). Cooperation in intergroup and single-group social dilemmas. *Journal of Experimental Social Psychology, 30,* 52–67. doi:10.1006/jesp.1994.1003

Byrne, D. (1969). Attitudes and attraction. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 4, pp. 35–89). New York, NY: Academic Press.

Cardenas, J. C., & Carpenter, J. P. (2005). *Experiments on economic development: Lessons from field labs in the developing world*. Universidad de los Andes, Facultad de Economia. Retrieved from http://community.middlebury.edu/~jcarpent/papers/EandED.pdf

Carrin, G., Doetinchem, O., Kirigia, J., Mathauer, I., & Musango, L. (2008). Social Security in Africa. *DevISSues, 10,* 5–9.

Cavagnero, E., Carrin, G., & Torres, R. (2010). *A national social health insurance plan for Argentina: Simulating its financial feasibility*. Geneva, Switzerland: World Health Organization.

Chernew, M., Frick, K., & McLaughlin, C. G. (1997). The demand for health insurance coverage by low-income workers: Can reduced premiums achieve full coverage? *Health Services Research, 32,* 453–470.

Cook, S. W. (1978). Interpersonal and attitudinal outcomes in cooperating interracial groups. *Journal of Research & Development in Education, 12,* 97–113.

Cox, T. H., Lobel, S. A., & McLeod, P. L. (1991). Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal, 34,* 827–847.

Crockett, M. J., Braams, B., Clark, L., Tobler, P. N., Robbins, T. W., & Kalenscher, T. (2013). Restricting temptations: Neural mechanisms of precommitment. *Neuron, 79,* 391–401. doi:10.1016/j.neuron.2013.05.028

Dovidio, J. F., & Gaertner, S. L. (1999). Reducing prejudice: Combating intergroup biases. *Current Directions in Psychological Science, 8,* 101–105. doi:10.1111/1467-8721.00024

Durairaj, V., D'Almeida, S., & Kirigia, J. (2010). *Obstacles in the process of establishing a sustainable National Health Insurance Scheme: Insights from Ghana*. Geneva, Switzerland: World Health Organization.

Ernst, M., Nelson, E. E., McClure, E. B., Monk, C. S., Munson, S., Eshel, N., . . . Pine, D. S. (2004). Choice selection and reward anticipation: An fMRI study. *Neuropsychologia, 42,* 1585–1597. doi:10.1016/j.neuropsychologia.2004.05.011

Ersner-Hershfield, H., Wimmer, G. E., & Knutson, B. (2009). Saving for the future self: Neural measures of future self-continuity predict temporal discounting. *Social Cognitive and Affective Neuroscience, 4,* 85–92.

Falk, A., & Zehnder, C. (2007). *Discrimination and in-group favoritism in a citywide trust experiment* (IZA DP No. 2765). Discussion Paper Series. Bonn, Germany: Institute for the Study of Labor (IZA). Retrieved from http://ftp.iza.org/dp2765.pdf

Fershtman, C., & Gneezy, U. (2001). Discrimination in a segmented society: An experimental approach. *Quarterly Journal of Economics, 116,* 351–377. doi:10.1162/003355301556338

Fishburn, P. C., & Rubinstein, A. (1982). Time preference. *International Economic Review, 23,* 677–694. doi:10.2307/2526382

Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature, 40,* 351–401. doi:10.1257/jel.40.2.351

Fudenberg, D., & Levine, D. K. (2006). A dual-self model of impulse control. *American Economic Review, 96,* 1449–1476. doi:10.1257/aer.96.5.1449

Gailliot, M. T., Baumeister, R. F., DeWall, C. N., Maner, J. K., Plant, E. A., Tice, D. M., . . . Schmeichel, B. J. (2007). Self-control relies on glucose as a limited energy source: Willpower is

more than a metaphor. *Journal of Personality and Social Psychology, 92,* 325–336.

Glimcher, P. W., Kable, J., & Louie, K. (2007). Neuroeconomic studies of impulsivity: Now or just as soon as possible? *American Economic Review, 97,* 142–147. doi:10.1257/aer.97.2.142

Green, L., Fristoe, N., & Myerson, J. (1994). Temporal discounting and preference reversals in choice between delayed outcomes. *Psychonomic Bulletin & Review, 1,* 383–389. doi:10.3758/BF03213979

Green, L., & Myerson, J. (1996). Exponential versus hyperbolic discounting of delayed outcomes: Risk and waiting time. *American Zoologist, 36,* 496–505.

Green, L., & Myerson, J. (2004). A discounting framework for choice with delayed and probabilistic rewards. *Psychological Bulletin, 130,* 769–792. doi:10.1037/0033-2909.130.5.769

Green, L., Myerson, J., & McFadden, E. (1997). Rate of temporal discounting decreases with amount of reward. *Memory and Cognition, 25,* 715–723. doi:10.3758/BF03211314

Grossbard, C. L., & Mazur, J. E. (1986). A comparison of delays and ratio requirements in self-control choice. *Journal of the Experimental Analysis of Behavior, 45,* 305–315. doi:10.1901/jeab.1986.45-305

Haile, D., Sadrieh, A., & Verbon, H. A. A. (2006). *Cross-racial envy and underinvestment in South Africa*. (CESifo Working Paper No. 1657). Retrieved from http://www.cesifo-group.de/DocDL/cesifo1_wp1657.pdf

Hariri, A. R., Brown, S. M., Williamson, D. E., Flory, J. D., de Wit, H., & Manuck, S. B. (2006). Preference for immediate over delayed rewards is associated with magnitude of ventral striatal activity. *Journal of Neuroscience, 26,* 13213–13217. doi:10.1523/JNEUROSCI.3446-06.2006

Harris, A. C., & Madden, G. J. (2002). Delay discounting and performance on the prisoner's dilemma game. *The Psychological Record, 52,* 429–440.

Haushofer, J., Cornelisse, S., Seinstra, M., Fehr, E., Joels, M., & Kalenscher, T. (2013). No effects of psychosocial stress on intertemporal choice. *PLoS ONE, 8,* e78597. doi:10.1371/journal.pone.0078597

Hausman, J. (1979). Individual discount rates and the purchase and utilization of energy-using durables. *Bell Journal of Economics, 10,* 33–54. doi:10.2307/3003318

Haynes, L. (2009). *Delaying gratification* (Vol. 328). London, UK: Parliamentary Office of Science and Technology of the United Kingdom.

Insko, C. A., Schopler, J., Graetz, K. A., Drigotas, S. M., Currey, D. P., Smith, S. L., . . . Bornstein, G. (1994). Interindividual-intergroup discontinuity in the prisoner's dilemma game. *Journal of Conflict Resolution, 38,* 87–116.

Isles, A. R., Humby, T., Walters, E., & Wilkinson, L. S. (2004). Common genetic effects on variation in impulsivity and activity in mice. *The Journal of Neuroscience, 24,* 6733–6740. doi:10.1523/JNEUROSCI.1650-04.2004

Jones, B., & Rachlin, H. (2006). Social discounting. *Psychological Science, 17,* 283–286. doi:10.1111/j.1467-9280.2006.01699.x

Kable, J. W., & Glimcher, P. W. (2007). The neural correlates of subjective value during intertemporal choice. *Nature Neuroscience, 10,* 1625–1633. doi:10.1038/nn2007

Kalenscher, T. (2007). Decision making: Don't risk a delay. *Current Biology, 17,* R58–R61. doi:10.1016/j.cub.2006.12.016

Kalenscher, T. (2009). Decision-making and neuroeconomics. *Encyclopedia of life sciences*. Retrieved from http://mrw.interscience.wiley.com/emrw/9780470015902/els/article/a0021397/current/pdf?hd%3DAll%2Cdecision&hd%3DAll%2Cmaking doi:10.1002/9780470015902.a0021397

Kalenscher, T., Ohmann, T., & Güntürkün, O. (2006). The neuroscience of impulsive and self-controlled decisions. *International Journal of Psychophysiology, 62,* 203–211. doi:10.1016/j.ijpsycho.2006.05.010

Kalenscher, T., & Pennartz, C. M. (2008). Is a bird in the hand worth two in the future? The neuroeconomics of intertemporal decision-making. *Progress in Neurobiology, 84,* 284–315. doi:10.1016/j.pneurobio.2007.11.004

Kalenscher, T., & Tobler, P. N. (2008). comparing risky and inter-temporal decisions; Views from psychology, ecology and microeconomics. In K. P. Hoffmann (Ed.), *Psychology of decision making in economics, business and finance* (pp. 111–135). New York, NY: Nova Science Publishers.

Kalenscher, T., Windmann, S., Diekamp, B., Rose, J., Güntürkün, O., & Colombo, M. (2005). Single units in the pigeon brain integrate reward amount and time-to-reward in an impulsive choice task. *Current Biology, 15,* 594–602. doi:10.1016/j.cub.2005.02.052

Kim, S., Hwang, J., & Lee, D. (2008). Prefrontal coding of temporally discounted values during intertemporal choice. *Neuron, 59,* 161–172. doi:10.1016/j.neuron.2008.05.010

Kirby, K. N., Godoy, R., Reyes-Garcia, V., Byron, E., Apaza, L., Leonard, W., . . . Wilkie, D. (2002). Correlates of delay-discount rates: Evidence from Tsimane' Amerindians of the Bolivian rain forest. *Journal of Economic Psychology, 23,* 291–316.

Kirby, K. N., & Herrnstein, R. J. (1995). Preference reversals due to myopic discounting of delayed reward. *Psychological Science, 6,* 83–89. doi:10.1111/j.1467-9280.1995.tb00311.x

Kirby, K. N., Petry, N. M., & Bickel, W. K. (1999). Heroin addicts have higher discount rates for delayed rewards than non-drug-using controls. *Journal of Experimental Psychology: General, 128,* 78–87. doi:10.1037/0096-3445.128.1.78

Koopmans, T. C. (1960). Stationary ordinal utility and impatience. *Econometrica, 28,* 287–309. doi:10.2307/1907722

Kurosaki, T., & Kurita, K. (2009). *Intertemporal choice and inequality in low-income countries: Evidence from Thailand, Pakistan and India*. Tokyo, Japan: Institute of Economic Research, Tokyo.

Laibson, D. I. (1997). Golden eggs and hyperbolic discounting. *The Quarterly Journal of Economics, 112,* 443–477. doi:10.1162/003355397555253

Lancaster, K. (1963). An axiomatic theory of consumer time preference. *International Economic Review, 4,* 221–231. doi:10.2307/2525488

Lawrance, E. C. (1991). Poverty and the rate of time preference: Evidence from panel data. *Journal of Political Economy, 99,* 54–77. doi:10.1086/261740

Lebreton, M., Bertoux, M., Boutet, C., Lehericy, S., Dubois, B., Fossati, P., & Pessiglione, M. (2013). A critical role for the hippocampus in the valuation of imagined outcomes. *PLoS Biology, 11,* e1001684. doi:10.1371/journal.pbio.1001684

Li, J., Xiao, E., Houser, D., & Montague, P. R. (2009). Neural responses to sanction threats in two-party economic exchange. *Proceedings of the National Academy of Sciences of the United States of America, 106,* 16835–16840.

Loewenstein, G. (1987). Anticipation and the valuation of delayed consumption. *Economic Journal, 97,* 666–684. doi:10.2307/2232929

Loewenstein, G. (1988). Frames of mind in intertemporal choice. *Management Science, 34,* 200–214. doi:10.1287/mnsc.34.2.200

Loewenstein, G. (1992). The fall and rise of psychological explanations in the economics of intertemporal choice. In G. Loewenstein & J. Elster (Eds.), *Choice over time* (pp. 3–35). New York, NY: Russell Sage Foundation.

Loewenstein, G., & O'Donoghue, T. (2004). *Animal spirits: Affective and deliberative processes in economic behavior* (CAE Working Paper #04-14). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.321.7246&rep=rep1&type=pdf

Logue, A. W. (1988). Research on self-control: An integrating framework. *Behavioral and Brain Sciences, 11,* 665–709. doi:10.1017/S0140525X00053978

Madden, G. J., Petry, N. M., & Johnson, P. S. (2009). Pathological gamblers discount probabilistic rewards less steeply than matched controls. *Experimental and Clinical Psychopharmacology, 17,* 283–290.

Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. *Science, 341,* 976–980. doi:10.1126/science.1238041

Mathauer, I., Doetinchem, O., Kirigia, J., & Carrin, G. (2007). *Feasibility assessment and financial projection results for a Social Health Insurance Scheme in Lesotho*. Geneva, Switzerland: World Health Organization.

Matthews, K. A., Flory, J. D., Muldoon, M. F., & Manuck, S. B. (2000). Does socioeconomic status relate to central serotonergic responsivity in healthy adults? *Psychosomatic Medicine, 62,* 231–237. doi:10.1097/00006842-200003000-00015

Mazur, J. E. (1984). Tests of an equivalence rule for fixed and variable reinforcer delays. *Journal of Experimental Psychology: Animal Behavior Processes, 10,* 426–436. doi:10.1037/0097-7403.10.4.426

Mazur, J. E. (1988). Estimation of indifference points with an adjusting-delay procedure. *Journal of the Experimental Analysis of Behavior, 49,* 37–47. doi:10.1901/jeab.1988.49-37

Mazur, J. E., Commons, M. L., Mazur, J. E., Nevin, J. A., & Rachlin, H. (1987). *An adjusting procedure for studying delayed reinforcement* (pp. 55–73). Hillsdale, NJ: Erlbaum.

McClure, S. M., Ericson, K. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2007). Time discounting for primary rewards. *The Journal of Neuroscience, 27,* 5796–5804. doi:10.1523/JNEUROSCI.4246-06.2007

McClure, S. M., Laibson, D. I., Loewenstein, G., & Cohen, J. D. (2004). Separate neural systems value immediate and delayed monetary rewards. *Science, 306,* 503–507. doi:10.1126/science.1100907

Meier, S., & Sprenger, C. (2008). *Discounting financial literacy: Time preferences and participation in financial education programs* (IZA DP No. 3507). Bonn, Germany: Institute for the Study of Labor.

Meier, S., & Sprenger, C. (2009). *Present-biased preferences and credit card borrowing* (Discussion Paper, IZA DP No. 4198). New York, NY: American Economic Association.

Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106,* 3–19. doi:10.1037/0033-295X.106.1.3

Nguyen, T. K. P., & Akal, A. (2003). *Recent advances in social health insurance in Vietnam*. Geneva, Switzerland: World Health Organization.

Nielsen, U. (2001). *Poverty and attitudes towards time and risk—Experimental evidence from Madagascar*. Royal Veterinary and Agricultural University of Denmark, Department of Economics and Natural Resources, Copenhagen, Denmark.

Paluck, E. L. (2009). Reducing intergroup prejudice and conflict using the media: A field experiment in

Rwanda. *Journal of Personality and Social Psychology, 96,* 574–587. doi:10.1037/a0011989

Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: What works? A review and assessment of research and practice. *Annual Review of Psychology, 60,* 339–367. doi:10.1146/annurev.psych.60.110707.163607

Pan, X. S., & Houser, D. (2013). Cooperation during cultural group formation promotes trust towards members of out-groups. *Proceedings of the Royal Society B: Biological Science, 280,* 20130606. doi:10.1098/rspb.2013.0606

Pender, J. L. (1996). Discount rates and credit markets: Theory and evidence from rural India. *Journal of Development Economics, 50,* 257–296.

Peters, J., & Buchel, C. (2010). Episodic future thinking reduces reward delay discounting through an enhancement of prefrontal-mediotemporal interactions. *Neuron, 66,* 138–148.

Petry, N. M., & Casarella, T. (1999). Excessive discounting of delayed rewards in substance abusers with gambling problems. *Drug and Alcohol Dependence, 56,* 25–32.

Prelec, D., & Loewenstein, G. (1991). Decision making over time and under uncertainty: A common approach. *Management Science, 37,* 770–786. doi:10.1287/mnsc.37.7.770

Rachlin, H. (2002). Altruism and selfishness. *Behavioral and Brain Sciences, 25,* 239–296. doi:10.1017/S0140525X02000055

Rachlin, H., Raineri, A., & Cross, D. (1991). Subjective probability and delay. *Journal of the Experimental Analysis of Behavior, 55,* 233–244. doi:10.1901/jeab.1991.55-233

Rohde, K. I. M. (2005). *The hyperbolic factor: A measure of decreasing impatience* (Working paper). Retrieved from http://arno.unimaas.nl/show.cgi?fid=3750

Rustagi, D., Engel, S., & Kosfeld, M. (2010). Conditional cooperation and costly monitoring explain success in forest commons management. *Science, 330,* 961–965.

Samuelson, P. A. (1937). A note on measurement of utility. *Review of Economic Studies, 4,* 155–161. doi:10.2307/2967612

Sanfey, A. G., Loewenstein, G., McClure, S. M., & Cohen, J. D. (2006). Neuroeconomics: Cross-currents in research on decision-making. *Trends in Cognitive Sciences, 10*(3), 108–116. doi:10.1016/j.tics.2006.01.009

Sassi, F., & Hurst, J. (2008). *The prevention of lifestyle-related chronic diseases: An economic framework.* OECD Working Papers. Paris, France: OECD. doi:10.1787/243180781313

Scheres, A., Lee, A., & Sumiya, M. (2008). Temporal reward discounting and ADHD: Task and symptom specific effects. *Journal of Neural Transmission, 115,* 221–226. doi:10.1007/s00702-007-0813-6

Schwartz, J., Mochon, D., Wyper, L., Maroba, J., Patel, D., & Ariely, D. (2014). Healthier by precommitment. *Psychological Science, 25,* 538–546. doi:10.1177/0956797613510950

Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1961). *Intergroup conflict and cooperation: The robbers cave experiment.* Norman, OK: Institute of Group Relations: University of Oklahoma.

Stephens, D. W., McLinn, C. M., & Stevens, J. R. (2002). Discounting and reciprocity in an iterated prisoner's dilemma. *Science, 298,* 2216–2218. doi:10.1126/science.1078498

Stevens, J. R., & Hauser, M. D. (2004). Why be nice? Psychological constraints on the evolution of cooperation. *Trends in Cognitive Sciences, 8,* 60–65. doi:10.1016/j.tics.2003.12.003

Strombach, T., Jia Jin, Y., Weber, B., Kenning, P., Shen, Q., Ma, Y., & Kalenscher, T. (2014). Charity begins at home: Cultural differences in social discounting and generosity. *Journal of Behavioral Decision Making, 27,* 235–245. doi:10.1002/bdm.1802

Tajfel, H. (1982). Social psychology of intergroup relations. 1982. *Annual Review of Psychology, 33,* 1–39. doi:10.1146/annurev.ps.33.020182.000245

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and inter-group behaviour. *European Journal of Social Psychology, 1,* 149–178. doi:10.1002/ejsp.2420010202

Takahashi, T. (2007). Non-reciprocal altruism may be attributable to hyperbolicity in social discounting function. *Medical Hypotheses, 68,* 184–187. doi:10.1016/j.mehy.2006.05.057

Tanaka, T., Camerer, C. F., & Nguyen, Q. (2006). *Poverty, politics and preferences: Field experiments and survey data from Vietnam* (Working paper). UCLA Department of Economics.

Thaler, R. H., & Shefrin, H. M. (1981). An economic theory of self-control. *Journal of Political Economy, 89,* 392–406. doi:10.1086/260971

Vohs, K. D. (2013). Psychology. The poor's poor mental power. *Science, 341,* 969–970. doi:10.1126/science.1244172

WHO. (2008). *World health statistics*. Geneva, Switzerland: World Health Organization.

Winstanley, C. A., Eagle, D. M., & Robbins, T. W. (2006). Behavioral models of impulsivity in relation to ADHD: Translation between clinical and preclinical studies. *Clinical Psychology Review, 26,* 379–395.

Wittmann, M., & Paulus, M. P. (2008). Decision making, impulsivity and time perception. *Trends in Cognitive Sciences, 12,* 7–12. doi:10.1016/j.tics.2007.10.004

World Bank. (2001). *World development report 2000/2001*. New York, NY: Oxford University Press.

Xu, K., James, C., Carrin, G., & Murchiri, S. (2006). *An empirical model of access to health care, health care expenditure and impoverishment in Kenya: Learning from past reforms and lessons for the future*. Geneva, Switzerland: World Health Organization.

Yamagishi, T., Jin, N., & Kiyonari, T. (1999). Bounded generalized reciprocity: Ingroup boasting and ingroup favoritism. In S. R. Thye, J. M. W. Macy, & H. A. Walker (Eds.), *Advances in group processes* (Vol. 16, pp. 161–197). Greenwich, CT: JAI Press Inc.

Received September 12, 2013
Revision received May 22, 2014
Accepted May 25, 2014 ■