The allure of the irrational
By Nikolaus Nützel

The assumption underlying modern economics is that the behavior of economic agents is always motivated by rational self-interest. As Martin Kocher’s experiments demonstrate, on closer examination, the notion turns out to be untenable.

*Homo oeconomicus* may not know it yet, but it is an increasingly endangered species. People like Martin Kocher have the beast in their sights. Kocher is Professor of Behavioral Economics at LMU, and his work suggests that *H. oeconomicus* will soon suffer the same fate as *H. neanderthaliensis*: extinction. Not that Kocher is animated by anything like a killer instinct – far from it. He just wants to know the answer to a single question: How do the denizens of the real world of economics differ from the model that theorists constructed more than two centuries ago? The economic decisions of this idealized creature, *Homo oeconomicus*, are determined by two fundamental forces – clear-sighted calculation and cold-blooded self-interest.

“That nobody acts rationally all the time, or always behaves egoistically, is quite clear to everyone,” says Kocher. However, individuals differ in how they succumb to irrationality, and different factors are required to persuade different people to forego personal advantage for the benefit of a wider group. – And this fact throws up a whole series of problems for behavioral research. Is it possible, for example, to capture the diversity of economic behavior in a limited number of models and types? Can behavioral responses be predicted? Are these responses linked to biographical or educational variables or to biological factors such as sex, age or heredity? The closer he and his colleagues come to answering such questions, the closer they come to the goal that Kocher has set for himself: acquiring the ability to predict with reasonable accuracy how individuals will react to shifts in their economic environment.

**The lessons of dictator games**

Kocher wants to be able to build models, but he is an out-and-out empiricist. His laboratory, where his team collects hard data, is only a few steps from his office. The laboratory is part of MELESSA, an interdisciplinary collaboration in which a variety of research groups drawn from the social and economic sciences participate. About the size of a school classroom, the space is divided into two dozen booths separated from each other by shoulder-high wooden panels. Each booth contains a seat and a desk with a monitor on it. The experimental subjects sit in front of their monitors and are charged with making economic decisions, with the aid of mouse and keyboard.

For years, behavioral economists have used what are called dictator games to probe and extend an insight that at first sight appears quite trivial – except that it doesn’t fit the standard model of *H. oeconomicus*: Placed in identical situations, different individuals behave differently.

In the simplest versions of dictator games a certain sum of money is allotted to each player, and they are asked to donate some of it to another player. Some players will give half of their share away, others are willing to part with very much less, and still others hand over nothing at all. What never happens is that every player gives away the same amount.

This basic form can be varied and refined in various ways. “Things become especially interesting when one asks what players will do where an egoistic response benefits a single individual but is deleterious to the group as a whole,” Kocher says. In one design that probes this issue, four people are given, let’s say, 20 euros each as starting capital. The players are then asked to contribute part or all or none of their capital to a common fund, and are told that the amount that goes into the pot will be doubled, and the whole sum will be divided equally among all the players, including those who may have contributed nothing.

If all four players invest their entire capital in the common fund, and the experimentalist doubles that amount, the payout for each player is 40 euros. If however one player puts nothing in the pot while all the others again put in all they have, the pot contains 60 euros, the
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bank adds 60, and each player gets a quarter of the total, 30 euros. But the cheater has retained his start capital and so ends up with 50 euros. The other three have also made a profit, but they come away with 30 euros, instead of the 40 they would have had if the cheater had behaved like them. In addition the cheater has reduced the economic success of the group as a whole, since its overall return on investment is now 60 rather than 80 euros. In other words, the opportunity to maximize the economic welfare of the group has not been exploited to its full potential. And if everyone behaved like the free rider, there would be no “earned income” at all to be distributed at the end of the game.

Kocher has tested out such variations on players from different age groups, including children. The results were clear-cut: The players’ willingness to act with a view to achieving the best result for the group and less in terms of their individual advantage increases with age. To put it more polemically, one could say that greed is a developmental defect.

Kocher is fully aware of the fact that researchers who make use of scenarios like these are vulnerable to the accusation that they reduce everything that has a positive connotation to a matter of money. But he emphasizes that, here, money is just a metaphor for every type of incentive. He also points to a practical advantage of the approach: It is actually very difficult, to design experimental situations which are based on forms of reward other than monetary remuneration and yield interpretable data. One of the rewards of socially positive behavior is the approval of other members of the group, but this factor is very difficult to quantify accurately. Instead Kocher takes great care to ensure that the participants in his games have no direct contact with one another. This avoids cases in which, for example, Player A, who comes from an affluent background, decides to give a particularly large fraction of his capital in the dictator game to Player B, who is obviously less well-off but whom he finds personally attractive. So A meets B only onscreen, and he sees only the letter B – which tells him nothing about the personality of the player so designated.

Kocher nevertheless insists that such experiments provide insights into individual responses in real-life situations. For instance, in all sectors of the economy, people sooner or later discover one of the more unpleasant aspects of working in teams: Colleagues who contribute little to the final result earn just as much praise and reward as the rest. This precisely reflects the situation of the free rider in the experimental game, who donates none of his starting money of 20 euros to the common good and then pockets 50 euros, while the less egoistic players must make do with 30 euros. In the lab, one can go further and ask how free riders can be induced to show more team spirit. The basic insight afforded by such experiments is that rules and prohibitions imposed from outside are least effective. Sanctions developed within and imposed by the group are more likely to work, and best of all is usually a system of incentives – formulated by the group – that rewards the desired behavior.

These basic conclusions are supported by studies in which players are not restricted to investing their money in their own immediate interest. In such variant designs, players may also contribute their capital with the specific intention of inflicting a financial penalty on those who behave in an antisocial fashion. Under these circumstances, free riders can often be persuaded to act for the greater good of the group as a whole.

The case of an Israeli kindergarten provides what has become a classical example of the fact the hasty introduction of a penalizing system can also backfire. Those in charge of the nursery school were naturally not amused to find that many parents turned up late to pick up their children. The management therefore decided to impose fines on these latecomers, which turned out to exacerbate the problem. Kocher’s explanation for this result goes as follows. “The school’s managers hadn’t bothered to ask why parents were arriving late. If they had, they would have learned that the parents...
concerned were indeed intrinsically motivated to be punctual, but didn’t always succeed in being so. After the fines had been introduced without consultation, they no longer had any incentive even to try to be on time, reasoning that ‘If I’m late, I have to pay anyway, so why should I hurry?’ This case underlines the importance of considering the possible side-effects of incentives designed to promote positive social outcomes.”

Many people believe that counterproductive incentives played a significant role in triggering the global financial crisis that began to escalate in 2008. However, Kocher warns against wholesale condemnation of the bonus systems in the banking sector. “Most people avoid putting themselves at risk, they are risk-averse,” he points out. But economic success often requires taking risks. “The contractual arrangements concerning bonuses were not always optimally constructed, but they were not the real problem,” he says. He sees the nub of the matter elsewhere. “Bankers acted in the knowledge that a systemic backstop was in place, which would come into play if everyone messed up.” Many managers had taken on risks which they knew were unsustainable. But they knew that all the others had done so too. And it was clear to the banking community as a whole that not all financial institutions would be allowed to go bankrupt. “It is very difficult to correct this mindset. To do so would require ensuring that no bank becomes systemically indispensable – but some always are.”

So, according to Kocher, the central challenge for regulators now is to come up with rules that minimize the risk of the kind of domino effects that occurred in 2008 and later. “What was lacking,” he says, “was an understanding of the extent to which the banking and insurance sectors are intimately interwoven and interdependent.”

Does this diagnosis then mean that behavioral economists are no longer interested in the sort of research that generates newspaper headlines such as: ‘Money acts on the Brain like Sex or Cocaine’? Kocher responds to the question with a smile. He is of course aware of the work of the neuroeconomists who used functional magnetic resonance tomography (fMRT) to scan the brains of their experimental subjects as they received the payouts earned in economic games. Indeed he is now using an experimental design that incorporates elements of neuroeconomics. Kocher and his team are studying how the behavior of players changes after treatment with a nasal spray containing oxytocin – popularly known as the bonding hormone. The early results surprised him, he says, for contrary to his expectations, exposure to the hormone did not enhance the level of real teamwork. He speculates that the hormone might have made the team’s goal – to earn the best possible return on investment – appear less important to the players, but emphasizes that this idea must be tested further.

In addition to forays into neuroeconomics, Kocher is interested in a subject for which there is no exactly equivalent term in German – behavioral education economics. He and his team have shown in several studies that children who find it particularly trying if they have to wait for a promised reward are more likely than their less impatient peers to drink alcohol or take up smoking when they get older. The really interesting question is: “How can one intervene in child development in such a way that these kids learn to be more patient – with a view to reducing rates of cigarette smoking and alcohol consumption among adolescents?”

Kocher hopes to learn how to predict instances of irrational behavior, but he would also like to know how to make people less prone to such impulses. But then, the first thing is to define what permits one to characterize a behavior as irrational in the first place. Here Kocher mentions his encounter with a taxi-driver in the US. On hearing what his passenger did for a living, the driver exclaimed: “So you’re studying the madness of people!” Kocher acknowledges that there is some truth in the assertion. He indeed dissects economic “madness”, but with the intention of ultimately reducing its prevalence.

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