

Economic interests

Do strangers cooperate when they have to work together?

The Company of Strangers: A Natural History of Economic Life

by Paul Seabright

Princeton University Press: 2004. 320 pp.

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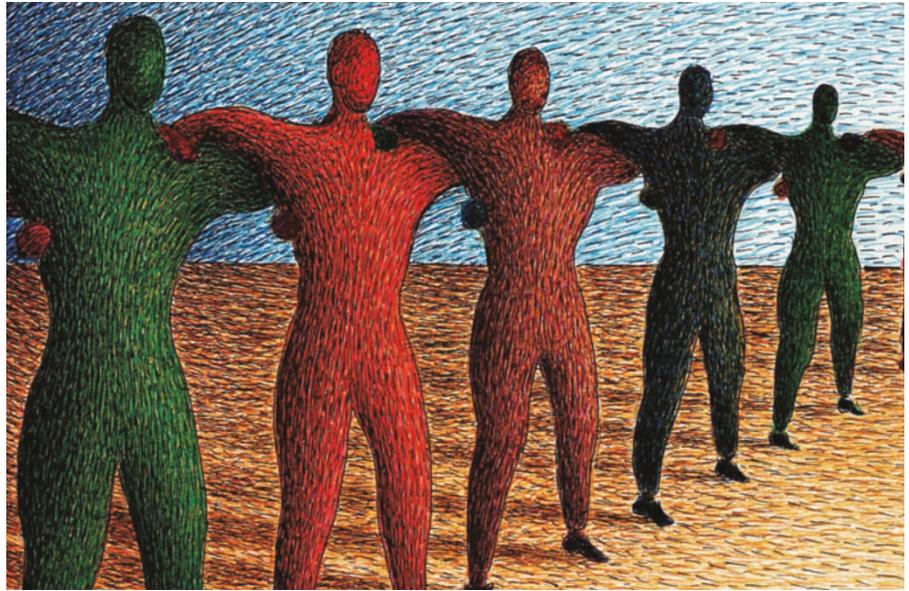
Herbert Gintis

Edward O. Wilson's call for the unification of biology and the social sciences some three decades ago came in for some rough treatment, and the notion of 'sociobiology' is still opposed by some traditionalists. Yet, despite this hostility, the process of integrating social science into natural science seems to be in full swing. Paul Seabright's new book is a welcome and important contribution to this process.

The idea behind sociobiology is that there are many social species, and our understanding of ourselves will be enhanced by analysing the similarities and differences between human and non-human social systems. The title of Seabright's book, *The Company of Strangers*, isolates a unique characteristic of human sociality: although several species have evolved a highly complex and decentralized division of labour, humans are the only species with extensive cooperation among unrelated individuals.

The maturation of sociobiology since Wilson's call to arms has included several key strands of research. One is a broadened concept of sociality which recognizes that, from the emergence of multicellular organisms to the rise of *Homo sapiens*, major evolutionary transitions have required new mechanisms to bring about cooperation among the complex parts of biological entities. It is now routine, for instance, to note that the disciplining of an aberrant cell in an organism, an ovipositing worker in a beehive and a shirking worker in a business enterprise are done in a similar way. A second contribution is gene-culture coevolutionary theory, which treats culture as a form of informational transfer across generations, subject to much the same evolutionary forces as genes. This is important because human sociality has been far more cultural than that of any other species.

The Company of Strangers exemplifies a new breed of economic analysis, seeking answers to fundamental questions wherever they are found and ignoring disciplinary boundaries. A transdisciplinary approach to economic life is nothing new: Adam Smith, for instance, wrote not only *The Wealth of Nations*, but also *The Moral Sentiments*, perhaps the greatest work of psychology before William James. But this tradition was all but buried in the early years of the twentieth century, to be rediscovered only recently.



Seabright provides elementary, but nonetheless richly fascinating, introductions to such standard economic topics as the division of labour, prices, money and commodities. And he addresses such perennial economic problems as unemployment, poverty, environmental destruction and economic instability. The novelty is that he consistently does so from a long-term evolutionary perspective. This is decidedly not a book on economic policy. Such traditionally central questions as capitalism versus socialism, the balance between competition and regulation, and the distribution of wealth and income are mentioned only in passing.

The book's innovation lies in its treatment of the psychological prerequisites of modern economic life. As Seabright notes in the introduction: "Modern society is an opportunistic experiment, founded on a human psychology that had already evolved before human beings ever had to deal with strangers in any systematic way." This psychology has two elements. The better known part is what Seabright calls "rational calculation", by which he means a capacity for logical reasoning, information processing and mastery of technique that far exceeds that of any other animal. Less well known in behavioural science is what Seabright calls "reciprocity", which he defines as "the willingness to repay kindness with kindness and betrayal with revenge, even when this is not what rational calculation would recommend".

It is important to be clear on two terminological issues from the outset. First, by "reciprocity" Seabright means what I and others have referred to in *Nature* as "strong reciprocity". The "strong" adjective is meant

to distinguish the behaviour from the self-interested notion of reciprocity common in the biological literature. Second, Seabright follows a long tradition in economics of considering reciprocity to be non-rational, using the term "rational" to mean "caring only about oneself". There is nothing irrational about such elements of strong reciprocity as returning kindness with kindness and retaliating against someone who has harmed one, however, even when these behaviours involve net material costs.

Seabright's treatment of human society is innovative because biologists and economists alike have long maintained both that humans are selfish when dealing with non-kin, and that their cooperation can be explained by long-term self-interest. Moreover, there is a long tradition, especially on the political left, of criticizing capitalism for promoting greed and selfishness; this is at best a partial truth, as market economies at least tolerate, and probably promote, fair-minded behaviour. Experimental economics, as described here by Seabright, has shown that most people are indeed reciprocal, and that economic and biological models of self-interested cooperation are rarely plausible when they involve groups of more than a few individuals.

Seabright also analyses the dark side of strong reciprocity, which is the tendency to exhibit hostility to "outsiders" in the name of "insider" cooperation. "Cooperation within a group," he observes, "can make the group more lethally aggressive in its dealing with outsiders." The systematic killing of unrelated individuals is so common among humans, he adds, that it "cannot be described as

exceptional, pathological, or disturbed". He concludes that "what Adam Smith famously described as the human propensity to 'truck, barter and exchange' has always coexisted uneasily with a rival temptation to take, bully, and extort."

The Company of Strangers is highly readable and will be accessible to a wide audience. It is, however, weak on detail and eschews formal model building and extended analytical argumentation. As a result, it will serve only as a stepping-stone to the field for those interested in the economy as a dynamically evolving system. ■

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Hidden history

Adolf Butenandt und die Kaiser-Wilhelm-Gesellschaft: Wissenschaft, Industrie und Politik im "Dritten Reich"

edited by Wolfgang Schieder & Achim Trunk

In German

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Benno Müller-Hill

Adolf Butenandt was the greatest non-Jewish German biochemist of the past century. In 1933, at just 30 years of age, he became a professor at the University of Danzig. At 33 he turned down an offer to become a professor at Harvard and accepted the directorship of the Kaiser Wilhelm Institute of Biochemistry in Berlin-Dahlem, his predecessor, Carl Neuberg, having been sacked by the Nazis on account of his Jewish ancestors. Butenandt went on to receive a Nobel Prize in 1939 for his work on female sex hormones.

Together with Alfred Kühn, Butenandt solved the biochemical problem of the eye colour of mutant *Ephestia* moths, and convinced the chemical industry to finance his research. After the Second World War he became an influential figure in the Max Planck Society, which succeeded the Kaiser Wilhelm Society, serving as its president from 1960 to 1972. A biography of Butenandt by his former student Peter Karlson was published in 1990 but was little more than a hagiography: Butenandt was portrayed as being an immaculate scientist.

But in the records of the DFG, the country's main research funding agency, lurks another story, which came to light in 1983. The human geneticist Otmar von Verschuer told some colleagues in 1946 that his collaborator Josef Mengele had sent him 200 blood samples from the Auschwitz concentration camp, and that Günter Hillmann, who worked with Butenandt, helped with



Top secret: Adolf Butenandt tried to destroy evidence of his research.

the analysis. Another of Butenandt's colleagues, Gerhard Ruhenstroth-Bauer, had meanwhile been helping Hans Nachtshheim to test children for epilepsy in a low-pressure chamber belonging to the Luftwaffe. During Butenandt's lifetime, the Max Planck Society turned a blind eye to these facts. But two years after Butenandt's death in 1995, Hubert Markl, the society's president at the time, set up an independent committee to investigate the society's past.

Butenandt had left his entire collection of papers to the society's archive, but stipulated that they remain closed to the public until 2025. Markl decided that this did not apply to members of the committee investigating the society's past. The first person granted access to the letters was science historian Robert Proctor. His findings, which appeared in 2000 as a preprint of the committee's report, were devastating. He revealed that von Verschuer had written to Butenandt disclosing that Hillmann was helping him to analyse the Auschwitz blood samples. Butenandt then asked Hillmann to destroy his (Butenandt's) documents marked "Geheime Reichssache" (top secret) before the Russians arrived. Hillmann arranged for them to be sent to Butenandt in Tübingen, but they then disappeared. We still do not know their secret.

The committee has now produced this book, edited by Wolfgang Schieder and Achim Trunk, which contains a dozen articles on various aspects of Butenandt's life. The committee is proud of the fact that it was written by historians, not scientists. Perhaps the most surprising aspect is that Proctor's article is not included. So what does the book tell us instead?

Schieder has written a piece about the best science in the Weimar Republic and the third Reich. He claims that Butenandt was a member of a nationalistic, anti-Semitic fraternity — he was no Nazi by ideology, but shared some of their views. Schieder's most startling discovery is that Butenandt was accepted as a Nazi party member on the same day in May 1936 that he was appointed as director of the Kaiser Wilhelm institute. Party membership was apparently the price he paid for the position.

Helga Satzinger writes about Butenandt's relationships with women. He accepted women in science only as technical assistants, and then only if they were single and

attractive. He went on to marry his own technical assistant, who came from a high-class family, and they had seven children together. Butenandt never supported the two female professors in his faculty at the Kaiser Wilhelm institute.

A chapter by Hans-Jörg Rheinberger deals with Butenandt's work with Kühn. Amazingly, despite their collaboration, they did not publish a single paper together. Butenandt published his research with his postdocs, but never with equal partners — he wanted all the glory for himself.

Carola Sachse writes about Butenandt's friendship with von Verschuer. And Trunk provides a new suggestion about experiments that von Verschuer considered doing with the blood samples from Auschwitz. Butenandt's proposition that von Verschuer was hoping to develop blood tests to identify different races, if true, makes his work even more sinister than was previously thought.

I think that a 450-page book about a great scientist should have at least one chapter dealing with his discoveries. What did he discover and when? Who with? What did he miss? There are a few answers here and there, but a single chapter would in my view have been a useful addition. Historians who believe that the content of science is a social construct may not mind, but scientists will.

I applaud the publication of this book, but am disappointed that it has been published only in German. Should the international community be denied the tale of this sad piece of history? ■

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