

# **SOCIAL SCIENCE IN THE MAKING**

## **An economist's view<sup>1</sup>**

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**Abstract**

Recent developments in economics and psychology suggest that productivity in the social sciences will benefit from crossing existing academic barriers, and that such crossing is more and more likely. Social science is in the making, but its success seems particularly conditioned on the willingness to put experimentation and formalization on an equal footing. Economists will have to be satisfied with theoretical highways instead of malfunctioning superhighways, while social psychologists will have to adventure more fast-track formal theory building. Institutional changes would facilitate the integration.

## **Historical notes**

Classical political economy was part of a budding social science. Pioneers like Adam Smith showed a clear interest in the psychological (as well as sociological and political) aspects of economic behavior. Paradoxically, it seems to have been the ‘marginal revolution’ towards the end of the 19<sup>th</sup> century, when attention got focused on marginal tradeoffs in individual decision making, that turned the tide. Stimulated by the emerging hypothesis of a rational and selfish economic agent with stable preferences (homo economicus) - which proved to be handy for mathematical modeling and was thereby reinforced - political economy developed into the economics we know of today. About the same time psychology established itself as a separate and experimental science through, among others, the work of Wilhelm Wundt. An important methodological distinction was generated, with economics developing itself into a deductive science, taking the homo economicus model as its starting point, and psychology as an inductive science, working from experimental data. Some serious attempts were made, in particular by George Katona, to bring the two closer together again. However, the main impact has been restricted to consumer behavior in marketing (economic psychology). This is, of course, a very rough historical sketch. Over time, several prominent economists have occasionally referred to the importance of psychological factors. Like, for instance, the ‘animal spirits’ that are driving investment in the view of John Maynard Keynes. Nevertheless, the idea of a ‘calculus of pleasure and pain’ (Jeremy Bentham) had definitively lost impetus, and Adam Smith’s (other) classic work on moral sentiments had fallen into obscurity.

## **Marching separately**

The academic division of labor between psychology and economics, allowing these disciplines to exploit and explore their methodologies to the full, has been very productive in the past. However, it is also felt that, whereas economists may have been too eager to construct ‘logical superhighways’ without much empirical support, psychologists were perhaps too reluctant to venture formalized generalizations using their wealth of experimental data. Recent developments suggest that the combination of experimentation and mathematical formalization is a powerful match for further scientific progress and promising in terms of bringing psychology and economics closer together. Since the focus in this essay is on social psychology, I will discuss these issues using some of my own experiences concerning research on social interaction in groups. My aim is to illustrate the instrumentality of experimentation for making bridges, and to indicate the importance of theoretical modelling as well as the relevance of institutions.

### **Lessons from social dilemmas and public goods**

A major topic in the social sciences concerns the behavior of individuals in social dilemmas. In economics, important theoretical work has been done regarding the related issue of public goods. This work has generated many insights into the responses of homo economicus to changes in behavioral constraints (income, prices). However, the observation that in reality the predicted free riding seemed less severe stimulated an interest in applying laboratory experimentation, which was emerging as a research method in economics (in the early 1960s successfully applied to markets by Nobel laureate Vernon Smith). About two decades of experimental work has clearly shown the restraining nature of the assumptions of the homo economicus model (see Ledyard 1995, van Winden 2002). Since public good environments

are perhaps the simplest to study behavior in groups, and groups are a core issue in the social sciences, I see the following experiences as important from a Bridging perspective.

*First*, by getting involved in a shared methodology (experimentation), it became more difficult to neglect the findings of social psychologists.

*Second*, the experimental designs were in the domain of the theoretical models, making it difficult for theorists to contest the results and stay within an ivory tower (which was easier with field empirical observations plagued by all sorts of noise effects). For the development of experimental economics this support from (particularly, game) theorists has been extremely important.

*Third*, the emphasis in economics on modeling proved very helpful. First of all, by structuring experimental work through the application of theoretical tools and insights, which provided direction and discipline. Furthermore, it has stimulated the development of new models, incorporating robust experimental findings, which can also be tested on other environments (e.g. Fehr and Schmidt 1999). Note that it is only through modeling that we can ever hope to generalize in a practical way to other parameter values and cases, other than the specific ones studied in experiments.

*Fourth*, as argued by Lewin (1967, p. 193) experimentation with groups leads to a natural integration of social sciences because it forces the experimenter to consider all relevant factors even if (s)he cannot analyze them satisfactorily yet. Factors like group identification, social approval, reciprocity and norms have found a place in the vocabulary of the experimental economist.

*Finally*, in my experience Bridging is particularly stimulated by: (a) educational training in the substantive issues or methods of different social sciences (like experimentation or mathematical modeling, which both work as a *lingua franca*), (b) meetings on a shared methodology (like the Economic Science Association conferences in experimental economics

that are not only attended by economists), and (c) some commitment to joint research projects with other social scientists (via dedicated research centers or conditioned research funding).

### **Illustration**

To exemplify, I will point at Bridging activity in my own research group at CREED - the Center for Research in Experimental Economics and political Decision-making. CREED started in 1991, funded by a large 'pioneer grant' from the Netherlands Organization for Scientific Research (NWO), to create an innovative research group and to develop experimental economics in the Netherlands. One of the conditions was to incorporate social psychological expertise in the project. This condition stimulated several experimental studies using the 'Ring-test' (Liebrand 1984) for measuring 'social value orientation', showing the importance thereof for contributions to public goods (e.g. Offerman et al. 1996). Subsequently, this same test was used in a novel way to measure 'social ties'. By applying the test twice, before and after social interaction, one can derive the attitude towards the specific other interacted with in comparison with a generalized other (e.g. van Dijk et al. 2002). These experiments were instigated by, and supported, a theoretical model which capitalized on other social psychological work by, among others, George Homans, whose analytical style is inviting for a formally trained economist (van Dijk and van Winden 1997). A next step has been to apply this technique to larger formal groups, showing that informal groups characterized by positive as well as negative ties may form through interaction (Sonnemans et al. 2001). Another natural outgrowth involved the application to social capital issues, which happened in the context of an interdisciplinary research programme with sociologists funded by NWO (e.g. Riedl and van Winden 2003). Subsequently, this research has been extended towards the experimental investigation of endogenous networks and related theoretical

models. The conception of social ties as being determined by feelings and emotions, and the experimental support obtained, stimulated in its turn a new major project on the economic significance and modeling of emotions, which extended and deepened contacts with psychologists (e.g. Bosman et al. 2001, van Winden 2001, Bosman and van Winden 2002). It also clearly showed the hindrance of existing disciplinary borders for PhD students to get adequate cross-disciplinary training. Finally, another important incentive for Bridging turned out to be the participation in EC funded research networks. At CREED this has stimulated, among others, recent experimental research on social interaction within and between groups in collaboration with social psychologists (e.g. Bornstein et al. 2001). All these developments at CREED seem to nicely illustrate the influence of the aforementioned factors.

### **Succeeding together**

Recent developments suggest that productivity in the social sciences will benefit from crossing existing academic barriers, and that such crossing is more and more likely. One development is the growing attention in economics for cognitive limitations and peculiarities (bounded rationality; see Rabin 1998). Another one concerns the gradually increasing appreciation in economics – as in psychology, for that matter – of the significance of emotions as determinants of decision making and their instrumentality for taking good decisions (e.g. Elster 1998). It may be more appropriate to speak here of ‘bounded reasoning’ than of bounded rationality. In a sense, we are going back to Bentham (Kahneman et al. 1997). Furthermore, in both disciplines there is a growing awareness of the importance of evolutionary forces (for economics, see Robson 2001). A related development is that researchers from both sides will increasingly have to deal with the challenging findings obtained from modern brain research, with neuroeconomics emerging as a new field (Sanfey

et al. 2003). These developments should be seen in combination with the sharing of experimentation as a research method and an increasing uneasiness in economics about sheer formalization and in social psychology about the lack of more general theories.

However, the present institutional environment (at least in Europe), with faculties in universities functioning as bureaucratic agencies and little competition between universities, is severely frustrating cross-disciplinary activity (Lohmann 2003).

## **Conclusions**

Social science is in the making, but its success seems particularly conditioned on the willingness to put experimentation, including computer simulation, and formalization on an equal footing (cf. Lewin 1967, p. 236). By now, experimental economics is an accepted research method in economics, with papers across the whole domain of economics being regularly published in the top journals, labs at major economics departments, and its own specialized journal. Regarding their analytical methodology, however, economists will have to grow satisfied with the construction of theoretical highways, for particular classes of problems, instead of malfunctioning superhighways. My perception is that a growing number of behavioral economists is heading for this direction. Although still a minority, their position will further gain momentum. Whether the theoretical innovations of behavioral economics will be cumulative in the longer run is unclear, but I do not see why we should be pessimistic (cf. Gintis 2003, Kahneman 2003). In their turn, social psychologists will have to adventure more fast-track formal theory building. In this respect, they could benefit from the experience and insights of economists. From reading their journals, I have also the impression that social psychologists could benefit from paying more attention to the findings of experimental economists. Finally, both sides should be more open to the pros and cons of its experimental

methodology. Use of monetary incentives should not be an automatism for economists, while psychologists should consider no deceit as default (Hertwig and Ortmann 2001).

The fact that Daniel Kahneman and Vernon Smith were awarded the Nobel Prize is a hopeful sign for Bridging. Especially, if it would also induce some institutional changes, like cross-disciplinary research centers and core curricula.

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