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Research and Transport Policy

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RESEARCH AND TRANSPORT POLICY

The question as to whether or not transport economics research provides the knowledge that policymakers need to come to properly informed decisions is a valid one. If it does not, then this is an initial shortcoming that has obvious drawbacks for effective decisionmaking. This first scenario and its implications are addressed in sections 1 and 2 below).

A “yes” answer to this question is contingent upon meeting a number of requirements, which we outline in section 3. If this is indeed the case, i.e. if research is indeed delivering the information needed for sound decisionmaking, we still need to know whether decisionmakers understand the message that researchers are trying to get across to them. If they are not, we need to examine the reasons for this breakdown in communication and ways in which it might be remedied (section 4).

1. SOCIAL UTILITY AND ACADEMIC UTILITY

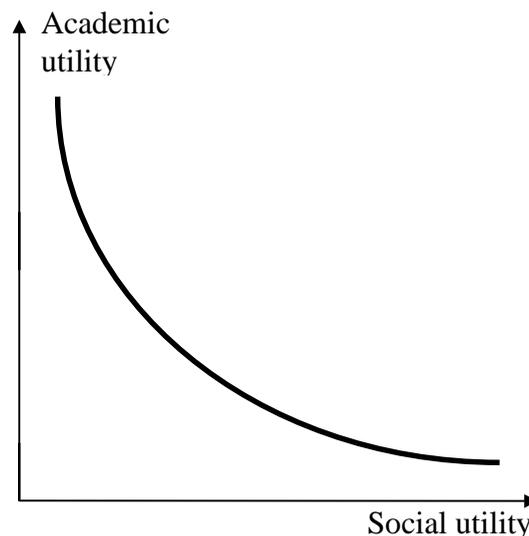
One way of analysing the situations we have just outlined is to assess the outputs of research in terms of two criteria -- social utility and academic utility -- which may either be correlated or, conversely, diametrically opposed to each other, depending on the individual country, the period or even the subject concerned. The first of these criteria can be taken to represent society’s need for knowledge and expertise, the second, the specific needs of the scientific community. For the sake of argument, we will also assume that these are measurable criteria and that all research outputs can be plotted against two axes, representing social utility and academic utility.

First, there are a number of reasons why research should be subject to two distinct types of criteria. The social utility of research resides primarily in its ability to provide timely answers to questions as they arise or when urgent decisions are needed. A good example of research affording a high level of social utility would be to devote major resources to generating and processing data in order to construct a forecasting model that is as consistent as possible. Work on the formal properties of such a model, on the other hand, would be kept to a bare minimum.

Along the same lines, a high level of academic utility would require the development of a much more sophisticated model that differed, at least formally, from existing tools. Since its academic utility will primarily depend on how well it meets the criteria of the academic community, whether it is operational or not will be a secondary consideration compared with its formal properties. Rather than testing the model against observable data, what is important is how it compares to the “state of the art”, i.e. what recognised authors have established on the subject. In a way, theory has become a substitute for empirical analysis.

For a given amount of resources, a curve such as that in Figure 1, representing the two types of research, shows how one criterion can be substituted for another.

Figure 1. **Substitutability of criteria**



This curve does not mean to say that the world of academic research is closed to the demand for social utility. A university research institute, for example, may divide its activities between research aimed at producing scientific papers for publication and contract research commissioned and funded by decisionmakers. Publication provides an incentive for theoretical research and, at the same time, advances the careers of researchers in the academic world. The advantage of contract research is that it draws researchers towards issues of immediate concern to society and, at the same time, attracts funding capacities. Without such funding, research programmes would be severely handicapped as soon as there is any need to generate and process specific data.

Conversely, a research consultancy firm will clearly have to cover all of its costs through contract work. However, it is also in its interest to devote some of its activities to a science watch and to extending its theoretical knowledge-base, failing which it will run the risk of finding itself limited to repetitive tasks and to the use of methods that will eventually become obsolete.

By exploring the social utility axis, the academic community ensures that it has the requisite empirical knowledge. By exploring the academic utility axis, research consultancies ensure that they are able to renew their theoretical knowledge base. The two movements from opposite directions will

eventually meet and the language that decisionmakers use to frame their practical questions will find itself confronted with that of scientific publications, with each group contributing in its own way to the task of translating that work into the “language” of the other.

However, it does not follow from the fact that there is mobility along the substitutability curve that the resultant dynamics will necessarily be stable. In short, the two professions – research and consultancy -- do not have the same client base, but each needs the other’s clients in order to secure its development. Their response may take one of two forms, depending on how they view the legitimacy of this two-way contest: they will either view each other with suspicion, or they will see the process as an opportunity and will attempt to emulate each other.

2. THE MUTUAL SUSPICION SCENARIO

The most striking symptom of this hostile dynamic is that *players on both the research and the decision-making sides are only able to influence the “market” that concerns them directly*, if only because they do not know what is going on in the other market. The players on the demand side are the first to withdraw into their respective spheres.

In the academic sphere, the players are the referees responsible for selecting the papers that will appear in authoritative journals, those who sit on thesis panels or elect young colleagues and those who allocate public funding to research teams (often these are the same people). Their power derives from a reputation for being difficult to please, which they have to maintain by rejecting everything that is not considered as meeting high academic standards. This is what led to the well-documented drift in economic science which, in the early 1970s, provoked a healthy backlash from some who could more legitimately speak out than others.

One such was O. Morgenstern, who, after outlining the difficulties inherent in statistical analysis in economics, commented that it was no surprise that econometricians found it easier to develop sophisticated abstract methods than to put them into practice¹. W. Leontief was not surprised either by the fact that many economists at the time seemed quite content with a situation in which they could demonstrate their prowess by building more and more complicated mathematical models and devising more and more sophisticated methods of statistical inference without ever engaging in empirical research².

The worst about the situation that Leontief objected to is that it can be self-perpetuating. In the academic world, the criteria for personnel selection are such that there is every reason to believe that future referees will exacerbate existing trends, since they will be even less familiar than their predecessors with the world of empirical data and observable fact. To avoid having to face this world, they treat it with disdain and, in order to convince themselves that they are right, criticise it as second-rate. The requisite vocabulary is to hand: pure research (high-brow), on the one hand, versus applied research (pedestrian) on the other.

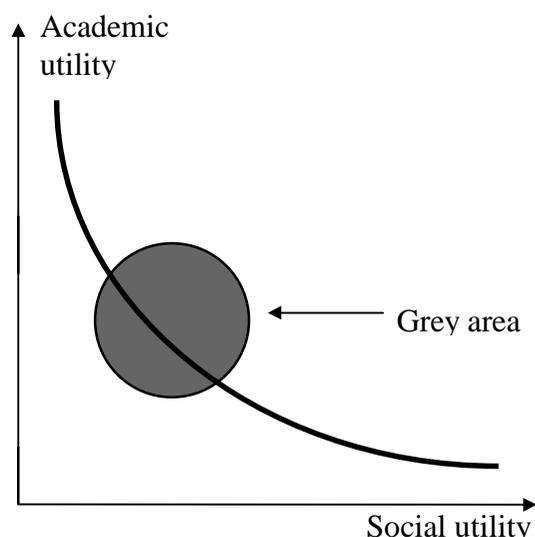
On the academic market, to be published, employed, promoted or eligible for public funding, the author-supplier has to demonstrate the formal “prowess” that demand requires. What he has to offer will be rejected if it does not score well on the academic scale, however socially useful the results may be. In extreme cases, social utility may even be a handicap.

On the second market -- knowledge to inform policy decisions -- demand has been totally discouraged from using the academic research community. The latter has a reputation for producing only theoretical constructs that bear little resemblance to reality; constructs that decisionmakers find painfully abstruse when what they need is something that is readily comprehensible.

Demand from the decisionmakers' side has no alternative but to turn to its own suppliers, in particular, consultancy firms specialised in the issues for which that demand is highest. To ensure the development of methodological tools, decisionmakers can count on the innovative capacity of the best organised consultancy firms or, failing this, on their own research delivery system. This is why large research and consultancy departments have developed within central government and major national firms. The results of their research are measured by their effectiveness in the field and are rarely published in the scientific press. If they were, decisionmakers would simply ignore them, such is the climate of distrust between the two markets.

As a result, a no-man's land emerges between the opposite poles of social utility and academic utility; which corresponds to the grey area of publications that is not recognised by either market, as shown in Figure 2.

Figure 2. **Mutual suspicion scenario**



Quite clearly, this situation is not conducive to overall effectiveness: deprived of the forum for debate that books and the field offer, the academic community delights in producing research valued only for its formal aesthetic; deprived of the conclusions of theoretical debate, the decisionmaking world has to make do with tools that are seldom updated. Quite the reverse, in short, to what can happen in a mutual benefit scenario.

3. THE MUTUAL BENEFIT SCENARIO

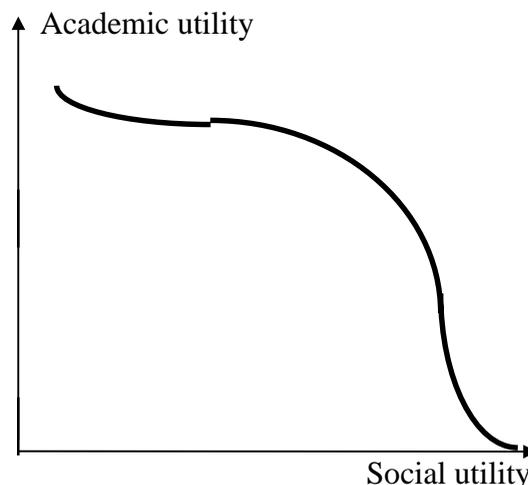
As everyone will have realised, the preceding scenario is based on “anthropological” assumptions about the two groups of actors. Of course, with another set of very different assumptions, a totally different dynamic is possible.

The differences seem to us to relate essentially to the demands of the academic community. *As soon as the academic sphere chooses to rate the scientific substance of its theories higher than their formal “prowess”, it inevitably invites comparison of those theories with observable reality* and, therefore, encourages what W. Leontief called “empirical research”. Of course, it is not enough just to organise factual data in an orderly fashion and fool oneself that this is “statistical inference”. It means building a theoretical, quantitative or causal model by checking it constantly against observable fact.

Once this requirement -- *fundamental to any modern theory of knowledge* -- has been met, the generation and processing of data assume their rightful importance and require resources that frequently exceed those available to academic research. Additional resources can only be found on the social utility market, where the work of the researcher may coincide with the decisionmakers’ need for knowledge. By allowing research to profit from this (in both senses of the term), the referees of the academic world will cease censoring work that has an empirical content or even a practical application. Where there is a complete change of attitude, social usefulness may even be included in the academic evaluation criteria. This will stimulate what is known as the practical application of research work.

Conversely, the more that the operational market finds that innovative concepts or methods from the world of research are borne out by its applied work, the more it will open its doors to the latter. With this sort of dynamic, the two worlds cannot fail to see that they have something to learn from each other. What academic research gains in relevance, applied research gains in theoretical power. Instead of alternative criteria, we have complementary criteria and the output curve of the two markets falls into areas that are more effective for both criteria, as shown in Figure 3 below.

Figure 3. **Climate of dialogue**



As the curve suggests, there is still, of course, scope both for purely academic work and for work with a high social utility content, but that is of little interest to the academic community. These extreme cases may be short-lived, however, since purely theoretical research may have a positive impact on methodology and so coincide with the applied field. Equally, strictly empirical work may produce results that are not clearly understood, giving rise to new questions for research to resolve, or may even result in new databases, which will provide an untapped resource for innovative research.

Contrary to what happens in the mutual suspicion scenario, it is no longer mutual rejection but shared curiosity that is the basis for relations between the two markets, to their mutual benefit; although, for the system to reach its full operational and academic potential, communication has to be established between the two communities.

4. COMMUNICATION PROBLEM

Once the obstacles created by the climate of suspicion are removed, information must circulate between the two sides if any mutual benefit is to be gained from the interplay between policymaking and scientific issues. This poses three problems: dissemination of knowledge, continuous verification and professional mobility.

The *dissemination of the results of transport economics research* relies on media that are not designed to reach a wide audience. The international journals which have the most well-established and authoritative review committees have a readership of barely more than 1 000. The last four meetings of the World Conference on Transport Research were attended by at most 1 200 people. These orders of magnitude demonstrate, were proof needed, that the audience interested in this type of research work is roughly equivalent to the population of people producing it.

Certainly, efforts have been made, particularly by the ECMT, to make this research work accessible by setting up an efficient documentary database and cataloguing work in progress. In conjunction with the ECMT database, several university research centres have developed their own documentation systems. The principal users of these databases are, for the most part, authors of the works they catalogue and students. This said, an increasing number of users are consultancy firms providing services for decisionmakers.

The trickle-down of knowledge in this way can hardly be considered adequate and it is up to the academic community to make a special effort to disseminate the results of its research. Many research institutes take pains to produce regular newsletters. On the other hand, few researchers undertake the work of popularisation that would make the main or most recent approaches to an issue more accessible to the wider public. The reasons are that this is a difficult and laborious exercise and that this type of publication generally does not receive much attention from academic reviewers.

Conversely, research work specifically commissioned by decisionmakers is rarely published, still less catalogued. The output of “grey literature” is in fact only catalogued in documentary databases when it arrives by accident at the research centres administering the databases. It is often only through special, carefully conducted documentary searches that high value-added studies or studies that shed some light on the decisionmaking issues that first prompted them can be tracked down.

The *continuous exchange of experience* between the actors in the two markets has probably been more successful than the dissemination of knowledge. The TRB³ meeting, held every January in Washington, is certainly a model in this area. Topics on transport economics and its tools, alone, bring together several thousand participants from all of the organisations concerned: decisionmaking centres, consultancy firms, universities, etc.

In Europe, apart from the PTRC -- which, outside of the United Kingdom, only has a modest following -- there is no equivalent forum for all of the actors concerned. The only regular meetings that bring together the full range of the actors are the ECMT's Round Tables. These play a key role in this exchange of views but are limited to a few topics per year and 30 or so participants at each Round Table. Symposia that are open to all the actors concerned also play a substantial role. However, all things considered, there is no European equivalent to the annual meeting of the TRB -- a regular event for which contributions can be scheduled a long time in advance -- always of high standards and conducted in an atmosphere conducive to an exchange of views between the two worlds. However, we should note the substantial growth in European research programmes (framework programmes), which have gradually increased in relevance and are becoming steadily better at encouraging collaboration between consultancy firms and university teams. Decisionmaking circles are also included, although less directly involved, but academic efficiency and social efficiency are working well alongside each other in these programmes.

Lastly, the extent of *professional mobility between the academic and decision-oriented research environments* varies a great deal from one country to another. Clearly, this would be an excellent way of transferring experience and, generally, of fostering mutual recognition between the two environments. However, where mobility is particularly low, as in France, the reasons run much too deep to expect to see them change in the short term.

If my closing remarks have been about communication issues, it is because they are both causes and symptoms of the poor quality of dialogue that we now have between the research and decisionmaking spheres. Consequently, we could consider systematic international evaluation of the quality of that dialogue, not directly, but through indicators for each of the three aspects of communication which we have just outlined. How could I possibly close without suggesting further research, but, typically, for the purposes of informing policy decisions?

NOTES

1. O. Morgenstern (1971), "L'Economie est-elle une science exacte?", *La Recherche*, No. 18, December.
2. W. Leontief, "Theoretical Assumptions and Nonobserved Facts", *American Economic Review*, March 1971.
3. Transportation Research Board.