

The Link between Theory and Practice

In highly applied professional fields which are focussed on relatively ill-defined problems, the division between theory and practice is often considerable. This is certainly the case in urban planning and policymaking where the inherent complexity of the situation is such that there can never be a consistent and complete theory of how such systems work. In fact, such complexity characterises most if not all systems that involve human decision making such as cities. Their many dimensional nature, their continued volatility where there do not appear to be any equilibrium conditions, and the continuing increase in their complexity as new technologies and human behaviours emerge, continually distort the tools and methods that we bring to bear on our understanding and the future design of our cities.

Amongst many ways of defining their form, a particularly evocative way of articulating these kinds of problem is to treat them as being ‘wicked’. Wicked problems were first identified over 50 years by the designer Horst Rittel who characterised them as problems that as soon as one tries to attack, resolve and solve them, instead of getting better, they get worse (Churchman, 1967; Rittel and Webber, 1973). This is given added impetus in a particularly expressive short poem written by the polymath Piet Hein (1967) who said, “Problems worthy of attack prove their worth by fighting back”. To an extent, this sums up the dilemma of all human problem-solving. As soon as one tries to unravel such problems, one discovers that beneath the first layer of explanation that one peels back, another layer exists; and so on, ad infinitum, to the point where any theoretical understanding blows up in one’s face. Rittel and Webber (1973) elaborated this thesis in policymaking by showing that as soon as a solution to a wicked problem is identified, its implementation raises yet further problems where it is not simply one’s understanding that begins to blow up but it is the very solution proposed that reveals a tangled web impossible to unravel. Solutions thus lead to a never ending sequence of problems in a viscous circle of positive feedbacks. In fact, most human problems which are wicked, are open ended and cannot be closed, as embedded in Mel Webber’s immortal phrase: “How is we can get the moon if we can’t get to the airport” (Batty, 2014).

As we have learnt more and more about the translation from theory to practice and vice versa, it is clear that the process in either direction has become ever more problematic. Prior to the invention of computers, simple systematic techniques for exploring solutions to planning problems were devised intuitively where our experiences of being immersed in thinking about cities and their planning was largely culled from practice. Once more formal tools were built, their use in practice was assumed to be benign but early experiences were far from this. If we take the earliest urban models based on social physics, ideas about rent and density, and the deterrent effects of distance, it was assumed that these could be applied directly to generate predictions that would be immediately applicable to thinking about generating more idealised, sustainable futures where the physical and spatial form of cities could be adjusted to improve equity and efficiency. In fact, almost immediately, these applications went awry (Brewer, 1973). It became clear that those who developed these early tools and models were unaware of the wider aspects of policymaking while the policymakers themselves had little or no expertise in using any kinds of formal tool. The early mismatch between theory and practice in this context was so wide that the first applications of these tools simply led to their abandonment.

In fact more than 50 years ago when the first models came to be developed, it was clear that the policymakers to whom these were directed had very different perspectives on what was required of these tools, than what they were able to actually do with them. In short, the models often addressed different problems from those that were articulated in practice. To a large extent, this was because the nature of the theory and practice was confused and ambiguous. As Thompson (2022) says: "... the degree to which models are unavoidably entangled with ethics,, politics and social values has become very clear." In short, the theoretical-practice continuum displayed all the signs of being composed of wicked problems, and part of the initial dilemma was the fact that the systems in questions were open to external factors that were continually changing. The other feature of the policymaking environment was that the process of translation from theory to practice and vice versa was never mapped out in a systematic way and thus any experience of applying science to public policy was largely absent. It took a long time, decades, for the terrain to become clear and for a focussed approach to be developed to translate the best theory into good practice in ways that were effective and optimal. As this experience was slowly acquired, it became clear that a much more laboured and systematic set of protocols and workflows was needed to improve the theory-practice continuum. In essence, the resources involved to do this required time and costs that were barely anticipated and only now, are being spelt out more clearly. The process of translation requires resources that are far beyond what has ever been anticipated.

Once the first wave of models was found to be wanting, there were other systematic tools that were fashioned to deal with urban planning but these were based more a set of protocols than formal models that planners were encourage to follow. In the 1970s, the first graphics technologies emerged as an essential way to link form to function. A range of expertise in terms of theoretical skills were also adapted focussing on transport, economic development, engineering of various kinds, all fashioned in such a way as to add to the range of formal tools that slowly developed. Different types of model were developed and arrayed alongside one another while these models were communicated using graphic representational methods such as geographic information systems. A new wave of modelling began which was closer to practice and to the key problems of urban policymaking. Mixtures of formal and informal methods were proposed but with iconic, analogue and digital models running alongside one another, and being loosely integrated using relevant expertise. Even though these models came closer to practice, the gulf remained and the quest to link different conceptions of the city remained a continuing challenge.

Moreover the need to integrate different types of planning in practice was significant as well as integrating different kinds of model and model-builder. Despite a wide array of new tools embodying different theories, the gulf between theory and practice still remains. What is missing is extensive experience of both sides of the theory-practice divide and for this, the challenge for model-builders and users to work in practice and for practitioners to work with theory. If I were to guess what this would involve, then an order of magnitude more resources than exist at present is required. In short, theory and practice need to be collapsed in such a way that theoreticians and practitioners work on planning programs together, evolving processes that continue indefinitely thereby enriching our knowledge of the problems and pitfalls that dominate the process, thus acquiring knowledge of the process linking theory to practice with both adding to a stream of new insights that define the problem and solutions in question. This rarely happens for the institutional barriers between those who see their role as developing good theory compared to good practice are considerable and trenchant; and before progress can be made in this way, the problem has to be recognised and provision made for

enough flexibility to be able to move fluently between theory and practice in both directions. Indeed theory and practice need continued integration.

As the link between theory and practice is enriched, there needs to be much more detailed specialisation across the divide. This requires different perspectives on theory and the models being developed in such a way that different technical and scientific skills are developed and attempt made to integrate them. This is already emerging to an extent in consulting practice where the focus is more on the preparation of plans than on administering the planning system that is the focus in government. The problem with translating these tools into planning practice as defined in local government, for example, is that the flexibility in adopting and developing new practices built around the emergence of new tools is dominated by a lack of resources: not only skills but the time required to develop and apply new tools is limited and this makes it often impossible to bridge the divide. To integrate the different silos that are in fact important in embodying many new scientific tools in practice, then time for experimentation is needed, time for learning about what is feasible and effective. In fact a new quest in educating professionals in domains such as our own is needed. In the last 50 years despite quite widespread recognition of the theory-practice divide, the gap appears to have grown wider. This is a consequence of more and more people beginning to work on theory or on practice with these domains burrowing down even further into their more indulgent and specialised cores. In short in the quest to improve both, exactly the opposite has happened with theory becoming more abstruse and difficult to understand while practice has become more bureaucratic and increasingly unable to provide easy ways in which theory can be exploited and made relevant.

There is another dimension to practice that involves different constituencies and this revolves around the idea of participation. For a long time, in fact probably from prehistory, the notion that problems require more than one person to resolve shows itself in various groupings of individuals who bring their collective minds to bear on possible solutions. In urban planning, public participation has been institutionalised for over 50 years but the process is half-hearted and not usually designed to elicit better solutions to problems. The digital revolution has given this a new urgency largely because new modes of communication are now available that promise to admit a much wider range of interests than anything hitherto. But at the end of the day, a new initiative in linking theory to practice will depend on how open and how convincing new methods of modelling, forecasting, simulation and participation are to the different interests that need to be involved.

In this merging of theory with practice that we are calling for, it is worth noting what a previous editor of this journal Helen Couclelis (1991) said in these pages 30 years ago. She entitled her editorial with the cliché “There is nothing as theoretical as good practice” echoing Kurt Lewin’s (1951) reversal of this as “There is nothing so practical as a good theory”. To an extent, Couclelis anticipates much of what we have said in this editorial in that she argues that the symmetry that is implied in her title and Lewin’s quote is much more complex than might appear at first sight. There is a very clear need amongst many of the scientific tools and theories which constitute much of the subject matter of this journal to broaden their base and embed them in practice. This would provide an easier transition between theory and practice while it would enrich both, providing a much deeper understanding of how we might generate both better theory and better practice which at the same time dovetail with one another in ways that we are yet to discover.

References

- Batty, M. (2014) Great Planning Disasters, in M. Tewdwr-Jones, N. Phelps (Editor), and R. Freestone (Editors) *The Planning Imagination: Peter Hall and the Study of Urban and Regional Planning*, Routledge, London, 28-39.
- Brewer, G. D. (1973) *Politicians, Bureaucrats and the Consultant: Critique of Urban Problem Solving*, Basic Books, New York.
- Churchman, C. W. (1967) 'Editorial', *Management Science*, 14, 4, B141-B142.
- Couclelis, H. (1991) There is nothing as theoretical as good practice, *Environment and Planning B*, 18, 379-384
- Hein, P. (1967) *Grooks*, The MIT Press, Cambridge MA.
- Lewin, K. (1951) Problems of research in social psychology, in Cartwright, D. (Editor) *Field Theory in Social Science—Selected Theoretical Papers by Kurt Lewin*, Harper & Row, New York, Chapter 7.
- Rittel, H. and Webber, M. (1973) 'Dilemmas in a general theory of planning', *Policy Sciences*, 4 (2), 155-169.
- Thompson, E. (2022) *Escape from Model Land: How Mathematical Models Can Lead Us Astray And Wat We Can Do About It*, Basic Books, London.