"Urban Science"

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One of the pernicious predicaments we face as academics is that we tend to teach our students old tricks to help them deal with new problems. In other words, we tend to perpetuate structures of disciplinary knowledge that had been shaped around earlier problems but that no longer correspond to the problems at hand. We hear this regularly from the students and faculty of DUSP [MIT Department of Urban Studies and Planning] alike. The fields that constitute urban studies today, (development, design, community, and environment) no longer correspond to the urban problems of today.

What forms of knowledge then do we create in order to address these emerging problems? More importantly, what forms could we create that would be constantly adaptable to the constant changes in the urban condition? I thank courses 6 and 11 for venturing to imagine this new flexible form of knowledge together and I thank Larry Vale for organizing the debate about the proposition that urban science could be such a form.

Larry, I am here to praise this proposition, not to bury it, to put its best face on it and to embrace it.

First, I praise it because we finally aspire to have a science of our own. For long, we have built a field of study based on epistemologies and credentials borrowed from other fields, from economics, to law, to anthropology, to engineering. It is great that we are seeking a field of our own, methods of inquiry and validation peculiar to the messy and vital realities that we call urban. In doing so, this proposition releases us from the hegemony of the social sciences and the tedium they have inadvertently dragged us into, the tedium of analysis that endlessly delays synthesis, and whenever we arrive at a synthesis, the tedium of solutions that turn into formulas. We know all too well that in cities the structure of the problem may not yield the structure of the solution (meaning solutions can come out of nowhere, from the margins) and we also know that the answer to how we should live together should not, cannot come from one source, but these multiple sources have to coordinated together). We also know that a solution here is not a solution there, but somehow we persist in deferring to other fields at their not-so-best because somehow they have established a monopoly over everything social and because they have claimed all the rigors of science. They have established a monopoly over space and told us that our instruments to shape it are all too invasive, but they have forgotten that both society and science possess

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a vast imagination that manifests itself at its best in the collective spaces of cities. The proposition to establish urban science as a field promises to release this imagination, it promises to help us imagine through our cities, what the world could be rather than simply to lament what it actually is. It promises not to mistake premonition for vision.

Second, I welcome this proposition, because it aspires to shape a super science, a messy synthetic, big, perhaps hurriedly and heuristically assembled set of skills and propositions in order to address the growing, complex, and urgent societal problem we call cities. This was how Norbert Wiener assembled Cybernetics after WWII to deal with the growing complexity of communication and control, and this is how ecology was quickly assembled in the 1960s as a science that had to operate across disciplines and methods of inquiry in order to respond to the emerging environmental problems. To think of it, our faculty are forging such interdisciplinary connections all the time. To solve the problem of transportation, we have to address human behavior, to address environmental issues, we have to be better negotiators, to improve real estate, we have to understand the value of design, and to assess big data we have to be excellent at both systems analysis and graphic design. In other epochs, such mixtures and connections would have been called alchemy not science, but today these experiments are increasingly validated by big data and systems analysis made possible by computer scientists who also thrive on the complexity of the urban systems and their unpredictability to test their algorithms and sharpen their data collection. The computational aspects are also important to urban planning because they validate the profession's will to action in messy circumstances by resolving dilemmas that have hindered planning for too long. Can we plan collectively, when individual interests stand in the way? Big data is showing that individual interests and those of the collective can be reconciled. Here again I cite the work that is being done on transportation and on the environment. Can we predict the outcome of a plan when so many unpredictable outcomes derail it, and here again I cite work being done on monitoring, on implementation and the advances that systems analysis is making in the fields of urban simulation and prediction.

Finally, I commend this proposition because it opens the field willingly and vigorously to two growing kinds of scrutiny without surrendering to them. One is the scrutiny of the democracy. Increasingly, planners are asked, "How is it that the ideas you propose respond to the public's concerns and adequately address its aspirations. The second comes from science, and it asks, "How can you validate, with data, analysis, and facts, the outcomes of your decisions and actions, the performance of your spaces and systems?" John Dewey once described democracy as the application of scientific method to the solution of social problems. It turns out that these two forms of scrutiny are one and the same. The more scientific our pursuits are, the more democratic they will become. We should be able to respond to this scrutiny through the instruments of this new field of urban science without compromising the power of this collective imaginary that we call urban planning.

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