Comment: Has Formalization Gone Too Far?

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I shall concentrate my comments on the paper by Donald Katzner which I greatly enjoyed. Katzner's paper is wide ranging and readable. It is even-handed. It is thoughtful and thought-provoking. It is all this, yet it includes no formal model.

By deciding not to include a formal model, Katzner offers not a defense but an attack on formalism. A persuasive defense would be the presentation of a model that served one of the functions to which Katzner alludes. The model would help us organize our thinking; it would drive out illogical conclusions; it might lead to surprising and unforeseen conclusions; and it would suggest a data analysis. You and I can think of many such models of formalization. A model of industry standards might be interesting. One could assume that there are two alternatives but incompatible standards, for example, the beta format and the VHS format for video recorders. The question that would be addressed by such a model is which language would emerge as a standard. To help think about our question ("Has formalization gone too far?") it might be useful to identify the circumstances under which an inferior standard would emerge.

I hope it is clear that what we are discussing is the choice of language. Have we adopted a language that enriches us, or enslaves us? Does it enhance our intellectual growth, or does it impair it? Perhaps you know the intellectual history of the deaf. For centuries, to be deaf was also to be "dumb", meaning stupid. Many of the deaf were herded together into institutions for the mentally retarded. With the invention of the language of Sign in the second half of the eighteenth century there was a great flowering of intellectual life among the deaf. The language of Sign, unfortunately, was a threat to the Victorian ideal of conformity, and in the second half of the nineteenth century the well-meaning Victorians forced Sign from the schools for the deaf on the assumption that the deaf needed to assimilate into "normal" society. The energy needed for the deaf to begin to master oral language was enormous and few could hope to become truly fluent. The result of this Victorian experiment was a great decline in the intellectual achievements of the deaf, a disaster that still lingers today.

Our question today is: Are we, like the Victorians, forcing upon our students a language that few can hope to master? Do our students struggle so hard at this language that there is little room for genuine intellectual growth? Are meetings like this AEA convention, at which hundreds of papers are presented, intellectual marketplaces where we hawk our latest ideas, or are these meetings pathetic theaters where we demonstrate our current state of mastery of our difficult language by repeating over and over phrases that differ in form but rarely in content? Who among our students could compose a literary argument such as Katzner and McCloskey have presented today? And are we not the worse off because the answer is few, very few?

These are not pleasant questions. But they need to be asked. We have witnessed a sequence of several generations of economists, each insisting on more mathematical fluency than the previous one. But there has been little improvement in the mathematical abilities of our students; indeed there may have been some recent deterioration. The Victorian schools for the deaf thus may be an uncomfortably accurate metaphor for our first-year graduate programs.

These thoughts do not substantially conflict with the message of Katzner's "defense". Katzner argues that a model should have acceptable accordances with the world. We should value the content of the message communicated by a model, not the mathematical form and technique. The model should not be pushed too far – it is only a metaphor.

Katzner and McCloskey do not disagree on these principles. What they disagree about is whether particular intellectual traditions have reasonably abided by these principles. The example they choose is existence proofs in general equilibrium. According to Katzner #1: "Having accepted the questions this model addresses, and having accepted the equilibrium approach and the assumptions upon which the
answers provided by the model are to be based, the economist has no choice but to pursue the relevant formalizations and inquire into the existence, uniqueness and stability of equilibrium in the model." But later Katzner #2 cautions: "Economic analysis becomes a good game when, for example, it engages in arguing out the logical implications of alternative formalized assumptions that can have no analogical or metaphorical relation to the phenomena under investigation. In such a situation the acceptable accordances between the formalizations being manipulated and reality have broken down, and further exploration of these formalizations is irrelevant to explanation and clarification." So which is it: #1 or #2? Do we have no choice, or must we always carefully choose how far to pursue the implications of a formal model? I vote for Katzner #2.