Econ Journal Watch,
Volume 2, Number 1,
April 2005, pp 66-69.

SYMPOSIUM ON INFORMATION AND KNOWLEDGE IN ECONOMICS

Information, Knowledge, Understanding and Wisdom

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ECONOMISTS USUALLY TREAT THE KNOWLEDGE AND INFORMATION possessed by agents in a dichotomous and one dimensional way: either agents know something or they don't. That they may surmise rather than know, feel uncertain and be reluctant to resolve this uncertainty by using certainty equivalents and a coefficient of risk aversion is sometimes discussed, but more often swept under the rug. But perhaps that is where it belongs. In cases where such a procedure allows us to resolve the questions we wish to answers (and the questions that others wish us to answer) it should be treated as a useful simplifying rather than as a simplistic procedure. And even in some cases where a one-dimensional treatment of knowledge or information does not generate satisfactory answers, it may still be the appropriate treatment because concern with the multifaceted nature of information and knowledge may just complicate the analysis without substantially improving the quality of the answer. But in some other cases, such as situations of asymmetric information, greater attention to "depth" of information may have a high pay-off. The only way to find out is to try and see. Methodological discussions can provide a useful complement but not an adequate substitute for such an empirical approach.

I will therefore do as my students did when on an exam I asked a question they could not answer, and answer a different question instead. This is whether we tend to conflate three different concepts, information,

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knowledge and understanding. These three concepts can, of course be defined in ways that makes them identical, but doing so hides some significant issues. To highlight them I define information as isolated nugget, that is simple observation statements or more or less direct deductions from the implications of such statements. These nuggets range all the way from observations that confirm (or disconfirm) important theories, to the "important message" of our junk mail. Knowledge I define as such nuggets of information integrated into coherent constellations, such as generalizations. Understanding is the integration of knowledge into the larger web of our other beliefs. Wisdom goes beyond understanding by adding epistemological and perhaps value and metaphysical judgments, which may, or may not, be articulated. I take understanding and wisdom to be the purpose of science, with prediction being both a practical pay-off, as well as providing a way to test our understanding and wisdom. Thus, the observation that the unemployment rate is currently 6 percent provides information, comprehension that this figure has to be interpreted in the light of changes in the number of discouraged workers, the labor force participation rate, the NAIRU, etc., provides knowledge. But whether this unemployment rate justifies an expansionary fiscal policy requires going beyond such hard facts and forces us to consider also vaguer issues, such as how to respond to the unreliability of our measure of the NAIRU, the uncertainty about the lag of fiscal policy and the fact that expansionary policy is hard to reverse. It also requires value judgments. That is, it requires wisdom.

Obviously economists need all four. What in the long run prevents a gross over or under-emphasis on any of them is essentially the trained common sense (wisdom) of readers who reward those who provide interesting results. Countering this tendency toward a correct emphasis are various distorting factors. Thus, in a society that values literature and philosophy much more highly than science, perhaps because the former is associated with an upper class education and the latter with a merely practical education, there will be a tendency to over-value trivial contributions to wisdom, while in a society that worships science because of the contributions that engineering makes to every-day life, information and knowledge will be overvalued relative to wisdom. Getting the balance "right" despite such societal pressures is one of the tasks of methodology. All this is merely a manifestation of the familiar point that if consumers are badly informed market failure results. In economics one obstacle to getting it right is that to have their work properly appreciated by the public economists need to distinguish it from idle cocktail-party chatter and

editorial pontifications. And since they live in a society that respects science—if only because so many students find science and math difficult—it is not surprising that they want to make economics seem scientific by valuing knowledge that can be made rigorous (and hence seemingly scientific) over wisdom that tends to be vague.

This is by no means all bad, the ethos of science has proved extraordinarily beneficial. But it does mean that we should be on the look-out for a tendency to adopt the superficial trappings of science, such as a tendency to bow to the tyranny of the measurable and the rigorously demonstrable, and to underemphasize more speculative and judgment-based knowledge. Modeling economics on the physical sciences is *on the whole* appropriate, but it is subject to declining marginal utility.

One example of imbalance during the first half of the last century was the popularity of an institutionalism that considered itself scientific because it stressed the accumulation of facts (information) at the expense of theory. A more recent example comes from the interpretation of regression coefficients. The computer spews out point estimates and t values for each regressor, and like other scientists we have recourse to the well established tradition that a coefficient has to be significant at least at the 5 percent level before we take it seriously. If applied thoughtfully that can be defended as a useful convention. But it is not always so applied. The justification for the 5 percent convention is that we want to set a relatively high hurdle for the acceptance of hypotheses. Yet in practice we find some economists urging that their hypotheses be accepted because they cannot be *rejected* at the 5 percent level, even though they might be rejected at, say the 12 percent level. This completely subverts the underlying principle that new findings have to pass a high hurdle to be accepted. Moreover, as Deidre McCloskey has pointed out, for a hypothesis to be confirmed a high t value with the right sign is not sufficient, the regression coefficient must also be of the right magnitude. For example, if I claim that the law of one price does not hold for a certain homogeneous commodity because even after adjusting for transportation costs its price in New York exceeds its price in Chicago by 0.01 percent, I have not disconfirmed this law even if due to my large sample the difference is significant at the 1 percent level.

All this should be obvious to anyone who has taken an elementary statistics course. So why is it so often ignored? One likely reason (though there are probably also others) is that deciding whether a variable is statistically significant is a simple matter of information, while deciding whether it is substantively significant requires judgment, and hence wisdom;

judgment that may differ among investigators and hence is subjective and therefore "unscientific".

Another example is the piling up of empirical tests of hypotheses that are never compared with each other. Taken individually readers may find many of them persuasive, and yet they are frequently contradictory. As a result, many readers are left in a haze, where all they can say is: "yes, the hypothesis may be confirmed, but then it may also be disconfirmed." Thus, we have knowledge, but not understanding and wisdom. Meta-analysis, which might advance us to understanding and wisdom, is seldom undertaken, perhaps because it seems to have a low prestige, being wrongly thought of as drudge work. Survey articles, unlike meta-analyses, are more frequent, but they usually cover so many papers that they merely summarize them without evaluating them,

Obviously a few examples like this do not suffice to show that we over-invest in information and under-invest in knowledge and wisdom; but they illustrate that this is a potential danger.

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