

Institutionalist Method and Forensic Proof
Working Paper
Robert M. LaJeunesse

(This paper reflects the opinions of the author and not the opinions or policies of the EEOC.)

With the sophistication of empirical methods, social science experts have expanded their influence in many forms of litigation. This paper suggests that forensic economic analysis, when conducted properly, is more closely aligned with the holistic method of economic inquiry followed by Institutionalists and other heterodox schools than the formalism of the Neoclassical paradigm. It draws upon the methodological differences delineated by Wilbur and Harrison (1978), to show that a method of “pattern modeling, storytelling, and holism” provides a better description of reality and truth than relying on a formal model that is more prescriptive than descriptive. A deductive method that serves as a parable to achieve an abstract ideal, is of little use in the legal setting. Probative forensic analysis requires a holistic melding of anecdotal evidence (storytelling) and empirical validation. As the US Supreme Court acknowledged in the context of employment discrimination, stories give context to the statistics (*Int'l. Brotherhood of Teamsters v. United States* 431 US 324, 340 1977).

Formalism v. Holism

Formalism is a method of inquiry consisting of a formal system of logical relationships abstracted from any empirical content it might have in the real world. The theory of the firm, for example, is intended to apply to the behavior of any firm in any production process, using any inputs, at any set of relative prices with any prevailing technology. Formalism relies heavily on mathematics, axioms, and deductive methods derived by separating an empirical process into its obvious divisions.

Formal models are perceived capable of yielding axioms or formal laws. These law-like statements are not empirical generalizations but are logical deductions that make a priori statements about necessary connections between abstract entities. The theory of utility maximization, for instance, does not describe how actual consumers behave, but how an ideally-rational consumer should behave, which is determined from logical deduction rather than from observation. The lawlike statements that emerge from formalist models are difficult to falsify empirically because of changing *ceteris paribus* conditions. In much of mainstream theory, truth about reality lies in the logic of the theory. Realizing the limitations of formalism, Institutionalists like Veblen, Commons, and Wesley Mitchell dissented from this view of economic theory and method.

Beginning in the 1940s, economists began revamping economic theory in an effort to make it empirically testable (Samuelson, 1947). Mimicking the practice of physicists, logical positivism attempted to show that empirically falsifiable propositions could be derived from formal models. According to one of its most clarion proponents, the goal of positive economics “is to provide a system of generalizations that can be used to make correct predictions about the consequences of any change in circumstances. Its performance is to be judged by the precision, scope, and conformity with experience of the predictions it yields (Friedman 1953, p.4).”

With the development of computerized metrics, many economists have become positivists, viewing empirical verification as the sublime task of social science. Many believe that the sciences are differentiated only by subject matter, and not methodology. An event or behavior to be explained is viewed as a prediction of a correlational relationship. The activity is then subjected to empirical testing in the form of statistical inference or direct observation in order to assess the truth of the observation. Positivist scientists aver that the pursuit of scientific truth proceeds by accumulating potentially

falsifiable, but confirmed propositions about the subject matter.

With the emphasis on predictive ability, concerns for the realism of assumptions or the versatility of the structure of positive economics are minimized. Assumptions facilitate abstraction and allow positivist economists to offer explanations of economic behavior without capturing the entire patchwork of reality. One reason why discredited theories - such as the “natural rate of unemployment” and the NAIRU - are not abandoned in mainstream economics is because the subject matter of economics is not amenable to ahistorical generalizations which can form the basis for successful prediction.

Additionally, positivists rationalize the failure of models by blaming the *ceteris paribus* clauses, the data, or the specific testing procedures.

Wilbur and Harrison contend that,

“Positive economics thus becomes perfectly insulated from refutation. It cannot be harmed by demonstrating that the assumptions and laws of the formal model are abstract and unrealistic, and the model is not rejected when its predictions fail to fit the facts...When a theory is able to obtain such a high level of insulation that its substantive hypotheses are, in practice, nonfalsifiable, we contend that the theory collapses into an a priori formal model that compels assent by its logic, not by its conformity with empirical reality. As such, economic theory functions more as a prescriptive than a descriptive device. That is, theory functions as a parable to elucidate the ideal toward which we should strive.

When formal methods fail to generate the anticipated outcome, mainstream economists resort to “storytelling” (Ward, 1972). They are forced to depart from logical deductions and tell stories about imperfect competition, frictions, externalities, irrationalities, and a variety of social limitations to utility

and profit maximization. The term “storytelling” is not offered pejoratively, but as an accurate description of most work in the social sciences. Indeed such storytelling is congruent with legal inquiry, which embraces a fact pattern specific to the the case at hand. Any use of theory in the legal setting must be subsumed within the facts of the case.

Institutionalists have adopted methods that emphasis holism over formalism and are better suited, therefore, for forensic inquiry. Wilbur and Harrison (1978) argue that Institutionalists have engaged in a twofold task of both critiquing the standard theory and developing their explanations of social phenomena. The holistic nature of Institutionalism minimizes the use of formal models and results in a process of storytelling, which Abraham Kaplan (1964) has referred to as a “pattern model.”

Socioeconomic behavior is explained by identifying its place in a pattern that characterizes the ongoing processes of change in the entire system. Akin to the legal setting, empirical or statistical proof of economic behavior requires the repetition of competing models against evolving data sets for the holistic analyst. This case study approach (or pattern-modeling) is absent from the formalist approach that abstracts from reality and insulates itself from validation of the theory itself.

The methods practiced by Institutionalists can be described as holistic, systemic, and evolutionary. Economic behavior is viewed as a process of change embedded in a set of social institutions or relationships. The Institutional method is evolutionary because social reality changes in response to changing patterns of relations. American Institutionalists like Veblen, Commons, and Galbraith have stressed the role of conflict, power, and coercion in their analysis of vested interests, absentee ownership, collective and political bargaining, and public utility regulation. The work of contemporary Institutionalists continues to feature the conflict that emerges from changes in technology, social

institutions, and distributions of power.¹ Formal models simply cannot incorporate the diversity of variables, the specificity of institutions, and the minutiae of behavior that is required of social investigation and, as argued below, forensic proof.

When an economic method overemphasizes precision and rigor, it will tend to fall into theoretical stagnation (Diesing, 1971). Under a preoccupation with logical and empirical detail, it will be difficult for theories to stay abreast of societal and technological change. On the other hand, the vagueness and suggestiveness of holism can lead to creeping speculation. Wilbur and Harrison (1978 84) illustrate the need for balance, “a central problem of any methodology is how to strike a balance between precision and rigor, on the one hand, and vagueness and suggestiveness, on the other, and how to relate the two so that they synergize rather than cancel each other.” Since the legal system is case-driven, it is constantly forced to consider evolving social norms. It is imperative, therefore, that forensic analysis features the evolutionary aspects of the holistic approach.

Holistic methods and the legal system

Since the legal system evolves through case-specific examinations, it has little use for logical generalizations regarding anticipated behavior. Articulating how agents “should have behaved” does not inform the fact finder when considering a limited set of evidence. Indeed, even suggesting how

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Nancy Folbre (2012) identifies the common ground that Institutionalists share with Marxists concerning the role of conflict as it relate to human capital theory when she writes that “the larger contribution of Marxian theory, in my view, lies not in attention to class conflict alone, but the more abstract notion of collective conflict over the distribution of the costs of creating and maintaining human capital, which represent a distinct form of surplus. Attention to this form of surplus helps explain the historic role of the nation-state as progenitor of socialized provision for health care and education, that pools risk, coordinates collaborative efforts, and captures the returns to human capital better than families or firms.”

individuals or organizations tend to behave as a reflection of social norms (social framework analysis) has been severely restricted by the Supreme Court (*Dukes v. Walmart*). Analysis of the social influence on economic behavioral is still admissible after the *Dukes* ruling, but it must make some attempt to incorporate the facts of the case at hand. Mitchell et al (2013) conclude that, “if experts go beyond providing context for a case through a description of general social science research to make claims about the meaning of social science principles for a particular case, then those case-specific claims should be the product of reliable case-specific research.” Indeed the Supreme Court's repudiation of deductive reasoning detached from the facts of the case is analogous to heterodox critiques of formalist economic methodology. Both stem from the realization that overly-broad generalizations, suppositions, and conclusions provide little insight to the specifics of the case. The Supreme Court has not ruled that objective, quantifiable evidence is the only gravamen for forensic proof; a holistic assessment is still required. Empirical conclusions alone are rarely enough to sway judges and juries. The US Supreme Court has not reversed its belief that the standard of proof should go beyond logical and positivist statements, “Statistics are not irrefutable; they come in infinite variety and, like any other kind of evidence, they may be rebutted. In short, their usefulness depends on all of the surrounding facts and circumstances (*Int'l Brotherhood of Teamsters v. United States 431 US 324, 340 1977*). In fact, by requiring more case-specific evidence from sociological testimony, the *Dukes* ruling validates the holistic approach to socioeconomic inquiry because it states that experts must work harder to tell a story that fits a pattern. To prove a “pattern or practice” case such *Dukes v. Walmart*, the forensic analyst needs to fashion a credible pattern model from the relevant evidence.

The “pattern-model” of investigation is better-suited to a case-specific discipline such as the law because it is not the sheer scale of the system that is important, but that the particular system under investigation constitutes a unified whole. In the pattern-model method, the analyst tests hypotheses

about recurrent themes by consulting a wide variety of data – case studies, survey data, personal observation, empirical studies, etc. Similar to the task of the jury and judge, the Institutional economist engages in a process of cross-checking different kinds of sources and evidence to evaluate the plausibility of one's initial interpretations. The process of contextual validation can never produce the rigorous certainty espoused by logical positivist; it can only indicate varying degrees of plausibility. Similarly, the law has established varying burdens of proof with differing degrees of plausibility required at various stages. The proof standards known as “reasonable doubt”, “preponderance of the evidence”, “prima facie”, “rebuttal”, and “pretextual” all recognize that the degree of plausibility will differ as the legal settings and stages vary.

Just as a litigator needs to build a holistic argument to prevail in court, the Institutional method attempts to link validated hypotheses or themes in a network or pattern that captures the multitude of connections between that part and the whole system. The researcher is reasonably certain that an explanation is correct if new data and different kinds of evidence fit the pattern; a similar burden is placed on the trier of fact in a legal setting. The judge or juror must serve as an impartial arbiter of the reasonableness of the proposition or explanation.

Brockway (1995, 26) illustrates how the law focuses on the details that the an economist would ignore as ancillary, if not superfluous information.

Economics and the law are both divisions of ethics. An important distinction between them is that motive or intention is central in the law but is insignificant in economics. A man is discovered with a smoking gun in his hand, standing over a bleeding corpse. It may be quickly proved that homicide has been committed by the man with the gun. But what did the man

intend? If the killing was done with malice aforethought, it was murder. If it was done in a sudden rage, it was manslaughter. If the gun happened to go off when the man tripped, it was accidental death. If the killer shot to defend himself, the homicide is justifiable. And if the killer is unable to distinguish right from wrong, he is not a criminal, but may be, as they say, institutionalized. That a man has been killed is the beginning, not the end, of the law's concern.

With economics, it is the other way entirely. The intentions of economic agents matter only to them or to those entitled to pass judgment on them, but not to the economy- and not at all, as far as economic consequences are concerned, even to the agents themselves. Entrepreneurs may, with the best intention in the world, set the price for their products too high (or too low) and thus ruin their companies, their investors, their employees, and themselves. Their good intentions do not mitigate their companies losses or the consequent diminishing of the GNP. Or monetary authorities may raise the interest rate with the intention of keeping prices down; if the actual consequence is that prices are raised, that is what matters, not the intention.

Clearly, context, motivations, and intentions play a larger role in the law than economics. In order to fully understand the myriad of influences on behavior, a modicum of understanding of psychology, sociology, anthropology, economics and other social science disciplines is useful. An interdisciplinary background is conducive to conducting a holistic forensic analysis.

Although the positivist approach may appear to be more objective on the surface, Greiner (2008) points out that normative issues arise even when conducting the putatively objective task of regression analysis. In defining a regression model, the forensic analyst often sees the litigation answer before assessing the model's goodness of fit. Secondly, deciding whether the model adequately addresses the

data and the litigation question requires a value assessment. Lastly, manipulating the regression by adding, subtracting or modifying variables can result in wholesale changes to the results. Greiner (2008, 9) argues that “at each stage of the [model-building] process of exploration and assessment, the substantive result, the litigation answer, stares the analysis in the face. Only the superhuman can completely disregard the temptation to lean towards a result favorable to a chosen side, consciously or not.” The facts of the case, legislative statutes, and case law, all determine the parameters of a relevant analysis. Forensic examinations conducted by social scientists are not likely to rely on objective data alone as the facts of the case permeate the analytical process. In contrast to the the physical sciences, most social science data begins as qualitative data that is converted to quantitative data for descriptive or analytical purposes. This is yet another stage at which a normative judgments are made. Additionally, Ziliak and McCloskey (2007) bemoan the emphasis placed on statistical significance over relevance. They argue that the focus should be on “clinical”, “ecological” or “forensic” significance rather than statistical significance. Professional ethics require that the analyst acknowledges the limitations of empirical models and the influence of subjective matters and strive to strike a balance between a holistic approach and objective empiricism where possible.

The formalism of human capital theory

In labor economics and, to a lesser degree, labor law, the asocial, apolitical, ahistorical method of mainstream economics has fostered the rise of human capital theory. As an extension of price theory and utility maximization, human capital theory fits the description of a formalist theory. Most mainstream labor economists axiomatically accept that measures of human capital – primarily education and experience – represent productivity outcomes that determine the price of labor (i.e. wages). Rational actors will delay their gratification to invest in human capital accumulation to increase future returns in the labor market. Folbe (2013, 282) recognizes the pervasive influence of the

theory in the context of discrimination studies, “the bulk of empirical research on sex and race/ethnic discrimination adopts the assumption that education and experience are primary determinants of earnings, treating any residual difference in earnings as a measure of discrimination. This assumption does not necessitate agreement with the claim that earnings are primarily determined by productivity, but it certainly implies it.”

When viewed from an alternative methodology, human capital theory is revealed as a cloak for labor market segmentation. Human capital theory amounts to a “re-packaging” of marginal productivity theory and a “new” theoretical mythology to rationalize extant labor market inequities. Productivity proxies provide employers with a convenient cover as they divide, queue, and conquer workers. Ignoring social, political, psychological and historical influences, human capital theory instructs that delayed gratification, investment, and hard work will generate future returns. Appeal to such individualistic forces, inflames distributional conflicts between groups that would otherwise display solidarity. Folbre (2012) writes, “in the 1980s and 1990s, the growing penetration of women and immigrants into managerial and professional occupations reduced prospects for the upward mobility of white males, creating a backlash against affirmative action and diversity efforts.” Furthermore, human capital theory gave conservative social developments, such as increased means-testing for social assistance programs, a modicum of economic theory to build an ideological movement behind.

Given the positivist nature of human capital theory, it is somewhat paradoxical that it has gained traction as a component of forensic proof. In a case-driven arena such as the law, one would not expect much use of a theory detached from historical, social and political influences. Yet, expert witnesses routinely appeal to human capital theory in quantifying and analyzing disparate wage claims and other employment discrimination disputes. In describing their earnings regressions, for instance, labor

economists often defer to human capital theory as a rational for including certain variables, or “productivity proxies”. Conversely, Institutionalists deny that wages and other payments relate closely to the individual attributes of an economic agent. Clarence Ayres' critiqued the atomistic view of marginal productivity theory and the evolving human capital theory and offered an alternative holistic view.

“In every society such [inalienable] rights derive from the mythology of agency, which is implicit in the system of beliefs to which the people of that society are emotionally conditioned, beginning in early childhood. As a matter of fact, whatever any society accomplishes- however it gets its living and otherwise maintains itself- is a causal consequence of the functioning of that society as a whole. This is what anthropologists mean by insisting that all cultures can be understood only as functioning wholes...Economist should know better than anyone that no one creates anything except as a participant in the culture he shares with all the other members of a community, and that it is utterly impossible to determine how different the future of his society would have been if he had never been born.

A holistic view of the labor market reveals that the price theory underlying human capital theory is tautological. We can only know what the various participants of our economy “create” once it is “revealed” by what they “earn.” In the context of employment discrimination, the factors contributing to the disparate treatment may simply be assumed away in the human capital model. Since what workers earn reflects a social value system, the atomistic approach of human capital theory offers little usefulness for the social scientist and the legal analyst.

Comparative worth studies may offer an more holistic approach than human capital theory, but their

use as forensic evidence is very limited. Analogous to social framework analysis, comparative worth analysis would need to incorporate detailed specifics of the case at hand to be admissible. Such case-specific research is expensive and time-consuming. Yet, Mitchell *et al* (2008, 18) suggest that the research output is worth the effort and expense, “we understand that in some cases having an expert witness engage in speculation may be cheaper, quicker, and simpler than conducting original research, but those savings come at the cost of scientific reliability.”

A forensic model of wage determination would then require a holistic analysis of the manifold factors influencing earnings outcomes. A positivist method that simply assumes that wage payments are a return to measurable productivity metrics alone ignores the complex dynamics of the labor market and the specifics of the case. With their acknowledgment of abundance and technological progress, Institutionalists realize that deprivation is not caused by natural scarcity but by artificial scarcity imposed through social conflict and power struggles. Since these power conflicts tend to find their full force in the labor market, credible wage determination models cannot ignore these influences.

[more on critique of MPT]

Conclusion

Since legal inquiry requires case-specific evidence and analysis, formalist methods that rely on general axioms and deductive reasoning are inappropriate. Positivist models rarely allow for the contextual detail and nuances required by forensic proof, forcing the model-builders resort to “story-telling”.

Since the holistic approach starts with the story to build a pattern model, it is better suited to forensic analysis and testimony. This comparative analysis is not intended to repudiate empirical or econometric analysis, but rather to encourage a balance between the rigor of formalist models and the realism of holistic models.

Legal Vignettes:

Daubert explained that under the Federal Rules the trial court must ensure that scientific testimony is both relevant and reliable. *Daubert* at 588-89. The *28 Court indicated that by reliability it meant evidentiary reliability or “trustworthiness,” and that, in turn, evidentiary reliability means scientific validity. *Id.*; *Bonds* at 554. The word “knowledge,” as used in Rule 702, means “more than subjective belief or unsupported speculation” and the term “applies to any body of known facts or to any body of ideas inferred from such facts or accepted as truth on good grounds.” *Gross v. Commissioner of Internal Revenue*, 272 F.3d 333, 339, n. 3 (6th Cir. 2001). Methodology is valid where it results from “sound and cogent reasoning,” *Bonds* at 540, and is “„well grounded and justifiable [and] applicable to the matter at hand.” ” Black, *A Unified Theory of Scientific Evidence*, 56 Fordham Law Review 595, 599, n. 9 (1988). The subject of scientific testimony need not be known with certainty, but an inference or assertion must be supported by good grounds, based on what is known. *Id.*

Federal Rules of Evidence Advisory Committee Note to Rule 201 “Adjudicative facts are those to which the law is applied in the process of adjudication. They are the facts that normally go to the jury. They relate to the parties, their activities, their properties, their businesses.” Social facts are a unique type of adjudicative fact, generated by applying social science techniques to case-specific data to provide further evidence or assistance in evaluating the evidence.

ASSA Abstract

This paper argues that forensic economic analysis is more consonant with the positivist method of economic inquiry followed by Institutionalists and other heterodox schools than the formalism of the Neoclassical paradigm. Drawing upon the methodological differences delineated by Wilbur and Harrison (1978), one can show that a method of "pattern modeling, storytelling, and holism" provides a better description of reality and truth than relying on a formal model that is more prescriptive than descriptive. The formal models of the Neoclassical paradigm (deductive methods) - which amount to parables of an abstract ideal - are of little use in litigation. Abstracting from reality, the Neoclassical approach insulates itself from validation of its theories. (historically/empirically). Probative forensic analysis requires a holistic melding of anecdotal evidence and empirical validation. The inductive method of considering a variety of cases/observations and replicating outcomes to arrive at credible conclusions is given greater store in litigation than rational or logical theory. Akin to the "storytelling" method, a holistic method investigates what patterns emerge that can support a probabilistic inference about a theory/explanation. Moreover the empirical proof required in litigation may be held to more rigorous standards than academic work, requiring repetition of models against multiple or evolving data

sets.

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