

This Week's Citation Classic

Goldberg L R. Simple models or simple processes? Some research on clinical judgments. *Amer. Psychol.* 23:483-96, 1968.

[Univ. Oregon and Oregon Research Inst., Eugene, OR]

This article reviewed the literature on the reliability and validity of clinical judgments, presented the rationale and procedures for regression analyses of the judgment process, described three such studies of professional decision-making, and presented preliminary results from an intensive attempt to teach clinical inference. [The Social Sciences Citation Index® (SSCI™) indicates that this paper has been cited over 150 times since 1968.]

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"When Jerry S. Wiggins wrote what is now considered to be the major textbook in personality assessment, he dedicated it 'To ORI: The people and the concept;' in the preface he praised '...the stimulating intellectual atmosphere which prevails at that institution.'¹ The place to which he referred was the Oregon Research Institute, which during the first decade of its existence (1960 to 1970) was probably as exciting a setting to pursue scientific problems as any in the world. Many of the leading scientists in the field of judgment and decisionmaking either worked at ORI (Paul Hoffman, Paul Slovic, Leonard Rorer, Gordon Bechtel, Sarah Lichtenstein, Robyn Dawes, and Baruch Fischhoff) or visited frequently (e.g., Ward Edwards, Kenneth Hammond, Adriaan de Groot, Nancy Hirschberg Wiggins, Amos Tversky, and Daniel Kahneman).

"My article was a paean to that institution. It reflected our mutual sense of discovery, and reviewed the literature we had produced, plus that of many others. Mostly, however, it was an account of our experimental failures – failures to demonstrate the complexities of human judgments that we and others assumed must characterize this important process.

"The founder of ORI, Hoffman, had published a seminal paper on judgment² in which he

argued for the use of linear multiple regression analysis to study the way individuals use information in making their judgments or predictions. Since the previous anecdotal literature was filled with speculations about the complex interactions to be expected when professionals process clinical information, we had naively expected to find that the simple linear combination of cues would not be highly predictive of individuals' judgments, and consequently that we would soon be in the business of devising highly complex mathematical expressions to represent an individual's judgmental strategy. Alas, it was not to be: '...in study after study our initial hopes went unrealized; the accuracy of the linear model was almost always at approximately the same level as the reliability of the judgments themselves, and –no doubt because of this –the introduction of more complex terms into the basic equation rarely served to significantly increase the cross-validity of the new model.' My article may have been so highly cited because it made these ideas and findings widely available to psychologists in a nontechnical manner.

"Also reported in my article were the preliminary results from an extensive study by Leonard G. Rorer and myself on the learning of clinical inferences. What we learned was that intensive training with knowledge of outcomes (i.e., feedback) was not a sufficient condition for complex clinical learning to occur. Both types of findings eventually forced us, as well as investigators elsewhere, to consider the role of simplifying strategies (or heuristics) in complex decision-making.³

"One such heuristic that was soon discovered has been called 'availability': when people have to estimate the frequency of an event, they typically rely on the ease with which instances spring to mind. Use of such a tactic is not unreasonable, but under some circumstances it can lead us astray (e.g., the frequency of more striking or memorable events gets overestimated). So it is with me: had someone asked me to estimate which of my publications was the most frequently cited, I'd certainly have selected another!"⁴

1. Wiggins J S. Personality and prediction: principles of personality assessment. Reading, MA: Addison-Wesley, 1973. p. iii-iv.
2. Hoffman P J. The paramorphic representation of clinical judgment. *Psychol. Bull.* 57:116-31, 1960.
3. Tversky A & Kahneman D. Judgment under uncertainty: heuristics and biases. *Science* 185:1124-31, 1974.
4. Goldberg L R. Man versus model of man: a rationale, plus some evidence, for a method of improving on clinical inferences. *Psychol. Bull.* 73:422-32, 1970. [The Social Sciences Citation Index® (SSCI™) indicates that this paper has been cited over 110 times since 1970.]