P.E.Meehl: Philosophical Psychology Seminar

Lecture 10 (of 12 ) 03/09/89

Genes on chromosomes: Sometimes isomorphism supports identity

Data vs mode of combining, people keep mixing up
Usual prediction situation in psychology or sociology has both psychometric and non-psychometric data, to be combined somehow. Test scores, ratings, school record, etc.

Informal method may rely partly on statistical data. How much theory do we rely on? Varies widely among clinicians (e.g., Michigan vs Minnesota)

Genetic statistics of diagnosis may be only slightly theoretical. Phenotypic trait: Content (semantic) resemblance of dispositions + empirical covariation of them

"Mechanical" combining: By a clerk. Doesn't assume any statistical form (e.g., linearity). Algorithm, regression equation, actuarial box (function-free), nomogram, computer program.

Configural and powers combinations generally subject to sampling error capitalization

Lykken Actuarial Box: No math function inferred. Glueck delinquency prediction tables.

Mechanical ≠ Actuarial. Actuarial is based on empirical data, tallied frequencies. Can do a mechanical "subjectively," based on my experience but not tallied—memory, impressions, clinical experience.

Delphi Method: Expert opinions but no meetings. Convergence of opinion? One way to proceed mechanically without actuarial tallying, rely on clinicians.

All actuarial prediction is mechanical, but not conversely.

"But want to predict for this individual, not about groups." Unsound.
Ex: Should I have drastic surgery?
Ex: Why buy life insurance?
Ex: Russian roulette. Do you prefer a gun with one live, or one empty chamber?

More facts specify a narrower subclass. Insurance actuaries do this. Each added attribute narrows class. "Decrease extension by increasing intension." Reichenbach rule: "Use smallest reference class for which you have stable relative frequencies." Basically sound although some technicalities in applying. Each *p*-value is "correct." But the narrowest is the one to rely on for prediction.

Almost everyone assumes clinical, informal method, the usual one, is the best, "obviously." People say "*Obviously* you can predict better by understanding the *individual*."

First comparison, 1928, Burgess on parole violation prediction.
Crude, unweighted sum of 21 factors beat out all 3 prison psychiatrists.

Sarbin (1942) prediction of college grades.

Ex: Wittman predicting response to shock therapy.

Skilled clinician to make some of the ratings (e.g., anal/oral). But how combine?
[Computers still not good in pattern recognition]

Ex: Apostolakos and Martin on diagnosing jaundice.

Meehl study of 29 clinicians vs 6 actuarial methods, neurosis/psychosis, MMPI.

Will Grove survey of studies. Expects 150 before he's done.
No controversy in social science where studies pile up so clearly in some direction.

Parole or recidivism predictor, same set of predictors work: How many crimes, age of first crime, school level, horizontal mobility, chemical dependence, associates, longest job in private sector, IQ, Porteus Maze Q-score, MMPI.

Many studies show adding more information lowers accuracy. Information overload.

Goldberg Paradox: Clinicians do worse than an equation based on predicting their predictions. (Because clinicians don't apply their own weights consistently.)

Actuarial method is atheoretical. This bothers people.

For theory to work in predictions,
1. Theory has high verisimilitude
2. Accurate measuring instruments

We do not meet either condition.

Similar debate in meteorology as to how much theory to use vs pure blind actuarial method, statistical equation on data.

When algorithm omits a factor so potent it countervails everything else. Meehl's broken leg case. When do you have a broken leg case? This judgment itself is often poorly made. If clinician can spot broken leg case, he will beat the equation. Since he doesn't, we know he over-identifies broken leg cases that aren't there. High school algebra proves this.

Train clinicians to have higher threshold for calling broken leg case. Then they might do better than equation.

Maybe organic medicine can do better. State of theory good enough? Howard Horns glutamic acid example.

“Two methods complement each other, shouldn't set up a conflict." Dumb.
“All these years people have been making judgments." Dumb.