As perspectives and experiences bring their knowledge to bear. Third, to the extent that the research incorporates the insights and values of its constituents, it is more likely to be used by them to create structural change.

The most important potential limitations of action research entail negative consequences of combining research and advocacy. The kind of knowledge acquired by involvement in action research is often considered suspect by mainstream social scientists because of the difficulty of simultaneously advocating the truth of a claim and critically examining its validity. A contending view is that the scholarly and activist roles are not contradictory, but are related dialectically. According to this perspective, the knowledge-seeking aspects of research combine with the social change goals of advocacy and intervention, resulting in information that is both descriptive of "what is" and oriented toward change.

The Society for Participatory Research in Asia, located in New Delhi, is perhaps the world’s premier institution doing research and publishing in the field of participatory research and evaluation. 

[See also Industrial and Organizational Psychology; and Social Psychology.]

**Bibliography**


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**ACTIVITY/DISENGAGEMENT THEORY.** See Social Gerontological Theories.

**ACTUARIAL PREDICTION**, in its narrow sense, refers to a certain class of formal procedures for making predictions, constructed on the model of an insurance company’s actuarial table. (Demographic and other relevant data, for example, gender and health-related habits such as tobacco smoking, are entered into a table which yields an estimated risk for some event such as death. Such tables are used to set insurance premiums.) In its broader and more common sense, *actuarial prediction* (and the cognate term *statistical prediction*) refers to all forms of mechanical prediction collectively. The broad sense is the one defined here.

The defining characteristic of actuarial prediction is its mechanical nature. Once predictor variables are measured, a clerk or a computer can use the variable scores to make a prediction. No human decisions about how to combine variables influence actuarial predictions, although expert human judgments may be needed to measure the predictors. Because they are mechanical, actuarial predictions are perfectly reproducible. By contrast, even very careful judges’ predictions are generally subject to fluctuation over time, even with the same input data.

Another (nondefining) feature of actuarial prediction is that variables may be combined so as to yield the most accurate predictions. For example, it may be that one variable should optimally receive greater weight in making a prediction than another variable which also enters into the prediction, even though both contribute to predictive accuracy.

Actuarial prediction in psychology was first studied by Sabine (1942), who claimed that what human judges do, when they combine multiple cues to arrive at predictions, is in principle no different from what a clerk can do using a calculator with a formula to combine the cues. Sabine predicted, given this hypothesis, that the perfect reliability of actuarial prediction methods (along with optimal weighting of predictors) would...
enable actuarial predictions to outperform human judges, in terms of aggregate absolute accuracy levels. Sarbin found that the predictions of college grades were more accurately made by a linear combination of high-school class rank and college entrance test scores than by trained counselors. Meehl, in his famous 1954 book, Clinical vs. Statistical Prediction, disagreed with Sarbin's theoretical claim, arguing instead that in principle a human judge can perform operations (e.g., novel theory generation) which a calculator cannot. However, after reviewing the available empirical evidence (about twenty-two studies), he concluded that the evidence more or less universally favored actuarial prediction over human judgment (generally referred to as clinical prediction, though a clinician need not be the person combining the cue data).

There have been several subsequent reviews of this area (Grove, Zald, Lebow, Snitz, Sines, submitted; Sawyer, 1966; Sines, 1971). Grove et al. found 136 studies involving the prediction of human behavior and health, only six of which demonstrated clinical predictions to be notably better than actuarial predictions.

One objection to actuarial prediction, alluded to above, is that humans can develop ad hoc novel theories about how a given organism's behavior is controlled. Statistical formulas and computer programs cannot develop such theories (though future computer programs may gain this capacity). Hence, it ought to be possible in principle for an applied psychologist to develop a theory of the behavior of a single organism, and then use this theory to make highly accurate predictions. However, this capacity awaits empirical demonstration in a practical prediction problem.

Another objection is that clinicians seek to understand, and not predict, behavior. Inasmuch as actuarial predictions do not offer such understanding, they are claimed to be less useful than clinical judgment. However, this objection is faulty. It rests on the false assertion that psychologists seldom try to prognosticate.

Actuarial prediction schemes, despite their many successful applications in research studies, are seldom used in applied psychology. It is not clear why this is so. Meehl and others have offered many possible explanations for this, including nonrational factors such as fear of technological obsolescence.

Actuarial predictions have been used to predict treatment response to psychotherapy, violence and suicide, divorce, criminal recidivism, and occupational choice, among other criteria. Variables used in actuarial predictions rules have included demographic variables such as gender and age, Minnesota Multiphasic Personality Inventory (MMPI) scale scores, coded variables from the Thematic Apperception Test, measures of cognitive functioning and interest, directly observed behaviors, and physiological measurements, to name a few. Data combination methods have included actuarial tables, simple sums of predictors, optimally weighted regression equations, and linear discriminant functions, among other schemes.

Goldberg (1965) published a famous actuarial formula for the broad diagnostic category into which a client's major psychopathology falls (neurosis vs. psychosis) from MMPI scores. Goldberg showed that a wide variety of actuarial prediction schemes outperformed expert clinical judges on this task. Predictions were checked by examining the clients' medical charts. Reasonably accurate predictions could be obtained from a simple sum MMPI scale T-scores. The average clinician did not do as well, and the rule in fact outperformed almost all individual clinicians.

Another actuarial formula, Reitan, Warren, and Akert's 1964 impairment index, combines scores from neuropsychological tests in the Halstead-Reitan Battery to decide whether or not a client has brain damage. In 1970 Stephens, a psychiatrist, applied the Elgin Prognostic scale (which combined demographic and behavioral data) to predict response to electroconvulsive therapy. In this study Stephens blindly predicted response to treatment better on the average, than did a symptom-based scale. As noted above, this is a rather unusual outcome for such studies.

A final category of actuarial prediction is computerized artificial intelligence. This is represented by the Minnesota Report, which combines MMPI-2 scores in a fashion that draws on the actuarial literature on this test, and also on expert clinical opinion. The latter is introduced by writing the computer program in such a way that it mimics the opinions of a carefully studied human expert. Computerized predictions have been increasingly studied since the advent of inexpensive but powerful computers.

Bibliography


ADDICTIVE PERSONALITY. An addictive behavior pattern can represent an addictive disorder (i.e., a syndrome that satisfies diagnostic criteria), such as substance use disorders or pathological gambling. Addictive behaviors also can reflect patterns of activity that are subclinical (i.e., behavior patterns that fail to meet diagnostic criteria), such as intermittently excessive shopping or heavy gambling. Common among all of these patterns is that people prone to addictive behaviors tend to relapse often (Brownell, Marlatt, Lichtenstein, & Wilson, 1986; Marlatt & Gordon, 1985; Tims & Leukefeld, 1986). This repetitive cycle raises the question of whether an underlying cluster of personality traits or an “addictive personality” causes the problem of intemperate behaviors. When people behave excessively and intend otherwise, they often refer to themselves as having an “addictive personality.”

Is there a personality that tends toward addiction? For almost 40 years, from the 1930s to the early 1970s, researchers searched for the addictive personality (Shaffer & Burglass, 1981). These investigators used psychological tests to measure and describe the personality attributes of people suffering from narcotic addiction. Clinical investigations gradually revealed an apparent personality type: an angry, impulsive individual who often was also socially deviant. These core traits are only some of the features that distinguished the addictive personality from other typologies during this early research.

Often clinicians report seeing people with other traits that lead them to infer the presence of an addictive personality. For example, people with narcotics addiction frequently are disheveled and in poor health. People with addiction tend not to take good care of themselves (Khanzian & Mack, 1983). People dependent on narcotics in particular express a low threshold of pain and a high frequency of medical incidents. They are often in crisis. Their social lives are in conflict, and their families frequently separate from them. People struggling with addictive behaviors often express the feeling that they are victims. To the onlooker, people with addictive patterns sometimes appear as if they lack anxiety and do not learn from bad experiences (Vaillant, 1975, 1983a). People with addictive disorders also seem as if they care far less about others than they do about themselves. They seem unmotivated and even resistant to change in spite of their problems (Miller & Rollnick, 1991). People with addictions usually have a very difficult time coping with their emotions. They tend to distrust others and behave defensively; others can easily threaten them. Consequently, people struggling with addiction have difficulty with intimacy. Finally, research often reveals that people with addictive disorders have a very poor self-image.

Given the relative consistency of these observations among both researchers and clinicians, many investigators have thought and continue to think that these are the personality characteristics that lead to drug abuse and addiction. Now, for example, it is popular to think that a specific drug preference corresponds to a personality defect. Khanzian (1975) has suggested that when there is a particular personality problem, an intoxicant-using individual will select a specific drug to feel normal. This notion suggests that people use drugs to self-medicate deficits in their capacity to manage painful feelings and impulses (Hartford, 1978; Khanzian, 1985; Rado, 1933). In short, people with addiction may simply be trying to get normal rather than high.

Clinical experience and research show that while some people do indeed self-medicate, others may use drugs for more varied reasons. During the early 1970s, two Canadian researchers recast the notion of addictive personality. Instead of studying the personalities of people struggling with addiction, they studied personality profiles of individuals to see if these people also abused drugs. Gendreau and Gendreau (1971) identified prison inmates who had the personality profiles that previous research had identified as addictive, asked them about their drug use, but learned eventually that these personality traits do not predict drug abuse.

When researchers study the personalities of drug abusers, they often appear quite similar. However, if scientists first identify the same personalities and then inquire about drug abuse, the apparent relationship disappears. There is an explanation. Investigators have found there is a life style that emerges from drug abuse.