

lead the profession at last to a new set of commitments, a new basis for the practice of science. Their assimilation requires the reconstruction of prior theory and the re-evaluation of prior fact, an intrinsically revolutionary process that is seldom completed by a single man and never overnight.

However, in the early stages of a science (e.g., psychology?) there are no such stable foundations . . . and different men confronting the same range of phenomena, but not usually all the same particular phenomena, describe and interpret them in different ways.

The characteristics of all discoveries from which new sorts of phenomena emerge include: the previous awareness of anomaly, the gradual and simultaneous emergence of both observational and conceptual recognition, and the consequent changes of categories and procedures often accompanied by resistance. Here (P. 63) a perceptual experiment is cited in which Bruner and Postman asked subjects to identify on short and controlled exposure a series of playing cards. Many of the cards were normal, but some were made anomalous, e.g., a red six of spades and a black four of hearts. The results showed that in certain subjects there was an intense resistance to the perception

of the unconventional, accompanied sometimes by acute personal distress.

In science, as in the playing card experiment, novelty emerges only with difficulty, manifested by resistance, against a background provided by expectation. Initially, only the anticipated and usual are experienced even under circumstances where anomaly is later to be observed. The author then goes on to show why "normal science," a pursuit not directed to novelties and tending at first to suppress them, should nevertheless be so effective in causing them to arise.

Drawing his data from history, philosophy, and psychology, Kuhn argues that "normal science" presupposes a conceptual and instrumental framework or paradigm accepted by an entire scientific community; that the resulting mode of scientific practice inevitably evokes "crises" which cannot be resolved within this framework; and that science returns to normal only when the community accepts a new conceptual structure which can again govern its search for novel facts and for more refined theories.

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