

though rats in both groups were from the same genetically pure strain. The results indicated that experimenters obtained significantly better learning from rats they considered bright than did experimenters who believed that their rats were dull.

This is not an isolated study. Similar results have been obtained in more than 90 experiments involving rat, planaria, and human subjects (Rosenthal, 1963a, 1964, 1966, 1969; Rosenthal & Halas, 1962; Rosenthal, Persinger, Mulry, Vikan-Kline, & Grothe, 1964; Rosenthal, Persinger, Vikan-Kline, & Fode 1963a).

Sources of experimenter bias include the experimenter's hypotheses (Rosenthal, 1963a), expectation (Rosenthal, 1964; Shuller & McNamara, 1976), motivation (Rosenthal et al., 1964), and prestige (Rosenthal et al., 1963a; Rosenthal et al., 1964). Other factors are instances of cheating (Rosenthal, 1966; Rosenthal, Friedman, Johnson, Fode, Shill, White, & Vikan-Kline, 1964), early data returns (Rosenthal, Kohn, Greenfield, & Carota, 1965; Rosenthal, Persinger, Vikan-Kline, & Fode, 1963b), nonspecific factors in pre-data-gathering interaction (greeting, seating and instructing), (Rosenthal, Fode, Vikan-Kline, & Persinger, 1964), verbal conditioning (Rosenthal et al., 1963a; Rosenthal et al., 1964), visual and verbal cues (Rosenthal et al., 1964c), experimenter and subject physical, demographic and personality characteristics (Chapman, Chapman, & Brelje, 1969; Eisman & Huber, 1970; Rosenthal & Fode, 1963; Rosenthal & Lawson, 1963; Rosenthal et al., 1963a; Schultz & Hartup, 1967).

Rosenthal concluded that human beings engage in highly effective and influential unintended communication with one another. This communication is so subtle that casual observation is unlikely to reveal the nature of the process (Heine, 1950; Rosenthal, 1963, 1966, 1969; Rosenthal et al., 1964).

Similar findings have been reported both in clinical psychology (Kent, O'Leary, Diamant, & Dietz, 1974; Masling, 1959, 1960, 1965; Rosenthal, 1964) and experimental psychology (Friedlander, 1964; Krasner, Knowles, & Ullmann, 1965; Krasner, Ullmann, & Fisher, 1964; McGuigan, 1963; Orne, 1962, 1970; Rosenthal, 1966, 1969);

the placebo effect,¹² psychochemotherapy;¹³ psychotherapy;¹⁴ psychoanalysis;¹⁵ clinical and experimental hypnosis (Barber, 1962, 1965a, 1965b; Orne, 1959, 1962; Troffer & Tart, 1964); and clinical medicine (Friedman, Kurland, & Rosenthal, 1965; Garland, 1960; Shapiro, A. P., 1955, 1959; Williams, & McGee, 1962).

The prestige of the investigator, physician, or healer influences clinical and experimental results,¹⁶ and has always been one of the common denominators in "bandwagon effects" in science (Kety, 1961), the success of quacks (Frank, 1961) and shamans (Eliode, 1964; Kiev, 1962; Shapiro, 1964d), the placebo effect (Lesse, 1962; Liberman, 1961; Shapiro, 1959, 1960a, 1960b, 1963, 1964c, 1964d, 1964f), and other healing techniques (Greenachre, 1953; Jaspers, 1965).

During the last decade, physicians and investigators have become increasingly aware of their bias. Bias is so pervasive that some investigators have suggested that clinical judgments may be less informative about patients than the therapists who make them (Grosz & Grossman, 1964). Bias explains why uncontrolled studies report success more frequently than controlled studies (Foulds, 1958; Fox, 1961). Attempts to minimize bias have led to increased use of statistics, placebos, double-blind procedures, independent assessment teams (Guy, Gross, & Dennis, 1967), and other controls.

¹²Shapiro, 1959, 1960a, 1960b, 1963, 1964d, 1964f, 1964c, 1968; Baker & Thorpe, 1957; Kelley, 1962; Letermenda & Harris, 1959; Wilson & Huby, 1961; Wilson, 1962a, 1962b; Joyce, 1962.

¹³Shapiro, 1959, 1964d, 1964f; Feldman, 1956, 1963; Sabshin & Ramot, 1956; Baker & Thorpe, 1957; Eissen et al., 1959; Letermenda & Harris, 1959; Wilson & Huby, 1961; Wilson, 1962a, 1962b; Uhr & Miller, 1960; Foreman, 1964.

¹⁴Garfield & Alleck, 1960; Strupp, 1960b; Wallach & Strupp, 1960; Shapiro, 1964c, 1968; Ward, 1964; Rezikoff & Toomey, 1959; Cutler, 1958; Endicott, 1962; Grosz & Grossman, 1964; Gill & Brenman, 1948.

¹⁵Krasner, 1962; Greenachre, 1953; Ward, 1964; Rosenthal, 1963b; Gill & Brenman, 1948; Burrow, 1927; Schmidberg, 1958; Glover, 1952; Kubie, 1953; Ehrenwald, 1958; Marmor, 1962; Sullivan, 1936-37.

¹⁶Kahn, 1957; Kamo, 1965; Ullman & McFarland, 1957; Friedman, Kurland, & Rosenthal, 1965; Masserman, 1957; Meerloo, 1963; Rosenthal, Persinger, Mulry, Vikan-Kline, & Groth, 1964; Krasner, Knowles & Ullmann, 1965; Reiser, Reeves, & Armington.