

Guttman Scalability Confirms the Effectiveness of Reparative Therapy

Scott L. Hershberger, Ph.D.

Department of Psychology, California State University, Long Beach, 1250 Bellflower Blvd., Long Beach, California 90840; e-mail: scotth@csulb.edu.

Spitzer presents compelling evidence that a homosexual orientation can be changed to a heterosexual orientation by reparative therapy. The best of evidence is found in changes following reparative therapy in (a) homosexual sex, (b) homosexual self-identification, and (c) homosexual attractions and fantasies. In this commentary, I will focus on the more dramatic results for men, although the results for women also support the effectiveness of reparative therapy.

Most therapists would agree that it is easiest to lower or eradicate participation in homosexual sex, somewhat harder to change self-identification from homosexual to heterosexual, and hardest of all to lower or eradicate homosexual attractions and fantasies. In Spitzer's study, changes in sexual behavior, self-identification, and attractions and fantasies toward a predominately heterosexual orientation confirm this expected order. After reparative therapy, homosexual sex was lowered for 98% of those who had previously engaged in homosexual sex, heterosexual identity was affirmed by 78% more individuals, and homosexual attractions or fantasies were experienced by 47% fewer individuals. Spitzer also categorized individuals as having changed or not changed by dichotomizing each of the three measures "at a point that the author regarded as indicating more than a slight level of homosexuality" (p. 408).

We can quantify the close match between the expected pattern of change with the observed pattern of change by thinking of sex, self-identification, and attraction and fantasies as three items whose order conforms to that of a Guttman scale. For the items to form a Guttman scale, everyone who has significantly fewer homosexual attractions and fantasies should also be more likely to self-identify as a heterosexual, and all those who now self-identify as a heterosexual should be more likely to have reduced the number of their homosexual sex experiences. The coefficient of reproducibility (*CR*) can serve as a measure of goodness of fit between the observed and predicted change patterns. The *CR* is defined as:

$$CR = 1 - \frac{\sum e}{Nk},$$

where *e* is the number of individuals whose item order does not conform to that of a Guttman scale, *N* is the sample size, and *k* is the number of items (Dunn-Rankin,

1983). The *CR* ranges from 0 to 1, with 1 denoting perfect conformity to a Guttman scale.

In order to compute the *CR*, data at the individual level are required. Spitzer clearly states in his article that his raw data are available to others, but the data were not available at the time this commentary was written. Thus, the following procedure was used to obtain an estimate of the *CR* for these data. Data were first created for 133 individuals by requiring that, for each item, the simulated data have same proportion of individuals who changed as in the observed data. For example, 47% of the individuals in the observed data reduced their homosexual fantasies; therefore, the simulated data for this item was also defined to have 47% of the sample change. Although the simulated data can reflect the correct proportions of change for the items, it is impossible to specify for any one person the specific pattern of change. To overcome this difficulty, 1,000 bootstrap samples of 133 individuals each were created to provide an estimate of the true *CR*. From the 1,000 samples, the *CR* ranged from 0.83 to 0.95, with a mean of 0.92 and a *SD* of 0.03.

Does a mean *CR* of 0.92 indicate a good fit? No value of *CR* has been defined that is universally accepted as a dividing line between acceptable and unacceptable goodness of fit, although Guttman (1947) originally defined a value of 0.85 as the dividing line. Other authors (e.g., Torgerson, 1958) suggested that a *CR* above 0.90 is a better standard. Therefore, the mean *CR* of 0.92 indicates that the pattern of change among the measures does fit a Guttman scale well. The goodness of fit of the Guttman scale to the three items is even more impressive when one considers that the mean *CR* of 0.92 is certainly an underestimate of its true value in the real data: the data set from which each of the bootstrap samples was drawn was created by randomly specifying whether an individual changed or not on *each item separately*. Therefore, each individual's entire item pattern was random.

The orderly, law-like pattern of changes in homosexual sexual behavior, homosexual self-identification, and homosexual attraction and fantasy observed in Spitzer's study is strong evidence that reparative theory can assist individuals in changing their homosexual orientation to a heterosexual orientation. Now it is up to those skeptical of reparative therapy to provide comparably strong evidence to support their position. In my opinion, they have yet to do so.

Methodological Limitations Do Not Justify the Claim That Same-Sex Attraction Changed Through "Reparative Therapy"

Craig A. Hill, Ph.D., and Jeannie D. DiClementi, Psy.D.

Department of Psychology, Indiana University-Purdue