

## This Week's Citation Classic®

Nowicki S & Strickland B R. A locus of control scale for children.

*J. Consult. Clin. Psychol.* 40:148-55, 1973; and Nowicki S & Duke M P. A locus of control scale for noncollege as well as college adults. *J. Personal. Assess.* 38:136-7, 1974. [Emory University, Atlanta, GA]

Locus of control scales were constructed for children and for adults. Evidence of construct validity was presented, including relationships with achievement, popularity, and age. Consistent with construct validity requirements, satisfactory internal consistency and test-retest reliabilities were reported. Nonsignificant relationships were found with social desirability and intelligence. [The *SSCI*® indicates that these papers have been cited in more than 515 and 145 publications, respectively.]

### Are We Lucky to Be Internal!

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It would be nice to describe our efforts to develop locus of control of reinforcement scales for children and for adults as an exemplary model of what would be expected from internally controlled researchers. However, the title of this article more accurately reflects the paradoxes that characterized our work with these scales.

Certainly, much of what led up to the publication of the two papers could be seen as behavior consistent with what would be expected from people who were internally controlled. The two locus of control scales were the result of three years of work. The locus of control scales were linked to the framework of J.B. Rotter's social learning theory;<sup>1</sup> they were a measure of a broad-based, generalized expectancy regarding the degree to which individuals perceived a connection between what they did and what happened to them. A considerable number of subjects were tested before the children's and adult's scales were published, and thousands more have been tested and tracked since, as the scales have been used by an increasing number of investigators. Each year, an updated manual informed interested researchers about the studies that had used the Nowicki-Strickland scales. Additional scales for preschool children<sup>2,3</sup> and the elderly<sup>4</sup> permitted the measurement of locus of control throughout the lifespan.

Reviews of the scales have appeared periodically<sup>5</sup> and report considerable evidence of construct validity. The scales have been translated into 33 languages and used successfully to test cross-cultural, as well as within culture, hypotheses.

The scales are popular probably because they are simple, straightforward measures of a theoretically sound construct. Although other researchers have attempted to construct more specific or specialized locus of control scales, most of them lack the crucial quality of incremental validity—that is, evidence that they increase prediction over and above that provided by a more generalized scale.

So much for the part of the story that reflects internality. Planning and effort was put forth and it led to a positive outcome. What could be more consistent with internal control expectancies? However, there is another side to the story as well that reflects the importance of external control expectancies. Perhaps we never would have gotten involved in the measurement of locus of control if Bonnie R. Strickland had not already been at Emory during my first year as a college professor. As Rotter's student, she was, at that time, involved in delay of gratification research and needed a valid locus of control scale for children. One thing led to another and she and I were on our way. The following year, Marshall P. Duke became a faculty member at Emory and, soon, a part of the locus of control process and coauthor of all subsequent forms of the locus of control scales.

All internality aside, without the serendipitous coming together of the three of us, the formidable test construction task would have been more difficult, if not impossible, and surely not nearly as much fun. As we have gotten older, along with the scales, it seems to us that it was the mixture of luck, fate, chance, and powerful others with internal control expectancies that produced the success of the scales and led us to conclude that we are indeed "lucky to be internal."

1. Rotter J B. Generalized expectancies for internal versus external control of reinforcement. *Psychol. Monogr.* 80:1-28, 1966. (Cited 3,715 times.) [See also: Rotter J B. Citation Classic. (Smelser N J, comp.) *Contemporary classics in the social and behavioral sciences*. Philadelphia: ISI Press, 1986. p. 112.]
2. Nowicki S & Duke M P. A preschool and primary locus of control scale. *Develop. Psychol.* 10:874-81, 1974. (Cited 60 times.)
3. . . . . A brief self report form of the preschool and primary Nowicki-Strickland locus of control scale. *Educ. Psychol. Meas.* 89:205-8, 1989.
4. Duke M P, Shaheen J & Nowicki S. The determination of locus of control in a geriatric population and a subsequent test of a social learning model for interpersonal distance. *J. Psychol.* 86:277-85, 1974. (Cited 25 times.)
5. Nowicki S & Duke M P. A review of the Nowicki-Strickland locus of control scales. (Lefcourt H, ed.) *Research with the locus of control construct*. New York: Academic Press, 1983. Vol. 2.

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