

It's Beyond My Control: A Cross-Temporal Meta-Analysis of Increasing Externality in Locus of Control, 1960–2002

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Two meta-analyses found that young Americans increasingly believe their lives are controlled by outside forces rather than their own efforts. Locus of control scores became substantially more external (about .80 standard deviations) in college student and child samples between 1960 and 2002. The average college student in 2002 had a more external locus of control than 80% of college students in the early 1960s. Birth cohort/time period explains 14% of the variance in locus of control scores. The data included 97 samples of college students ($n = 18,310$) and 41 samples of children ages 9 to 14 ($n = 6,554$) gathered from dissertation research. The results are consistent with an alienation model positing increases in cynicism, individualism, and the self-serving bias. The implications are almost uniformly negative, as externality is correlated with poor school achievement, helplessness, ineffective stress management, decreased self-control, and depression.

Who determines your fate? Is it you, or outside forces beyond your control?

Beginning in the 1950s, researchers discovered that the answers to these questions varied among individuals (Phares, 1957; Rotter, 1966). People who believe they are in control of their destinies have an internal locus of control (“internals”). Those who believe that luck and powerful others determine their fate have an external locus of control (“externals”). Rotter placed this individual difference within his larger theory of social learning (Rotter, Chance, & Phares, 1972); he argued that locus of control stemmed from one’s generalized expectancy about the world. Someone whose efforts are consistently rewarded develops an internal locus of control. In contrast, people who do not succeed despite their efforts acquire an external locus of control. Thus internals see a causal relationship between their behavior and rewards, whereas externals do not (Rotter, 1966).

Rotter’s (1966) Internal-External Locus of Control Scale (I-E Scale) was one of the first measures of this construct, and it has remained the most popular for measuring general locus of control. Lefcourt (1991) reported that more than 50% of the studies examining locus of control used the I-E Scale. The measure consists of 23 forced-choice pairs, with one internally oriented statement and another externally oriented statement. For example: “People’s misfortunes result from the mistakes they make” versus “Many of the unhappy things in people’s lives are partly due to bad luck.” Most items are general, though a few deal with specific circumstances such as school (“In the case of the well-prepared student there is rarely if ever such a thing as an unfair test”) or world affairs (“By taking an active part in political and social affairs, the people can control world events”). Over the past 40 years, locus of control has become one of the most widely studied individual differences in psychology. As Lefcourt (1991) noted, interest in locus of control reached phenomenal proportions during the 1970s and has remained high.

In this article, we examine birth cohort/time period differences in locus of control over the past 40 years, using mean scores on the Rotter I-E Scale (Rotter, 1966) for college samples and the Children’s Nowicki–Strickland Internal-External Control Scale (CNSIE; Nowicki

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& Strickland, 1973) for child samples. By studying changes over historical time, we aim to discover how the larger sociocultural environment has influenced perceptions of control. The study of birth cohort/time period differences is primarily a study of culture, as historical eras are different cultures (e.g., the United States in the 1960s was a very different culture than the United States in the 2000s). Recent research and theory in psychology has recognized that environments vary between countries and regions, producing differences in personality, emotion, perception, and behavior (e.g., Choi, Nisbett, & Norenzayan, 1999; Heine & Lehman, 1997; Markus & Kitayama, 1991; Nisbett & Cohen, 1996; Suh, Diener, Oishi, & Triandis, 1998). Environments vary over time and generations in a similar way; examining change over time illustrates the impact of culture on individuals and their self-perceptions.

To explore change over time in locus of control, we examined samples of the same age collected during different years, gathered from the literature (this is commonly known as a time-lag design). Because this design does not follow participants as they age, it cannot determine whether changes are due to birth cohort (the time when an individual is born and matures) or time period (the time when the data were collected). Locus of control scores could be a function of generational differences that will persist as participants age (a birth cohort effect) or temporary influences of a particular time that affect everyone (a time period effect). We may occasionally refer to changes in locus of control as “birth cohort effects” for the sake of brevity, however these changes could also be due to time period.

Previous studies have investigated change over time in personality traits such as extraversion (Twenge, 2001a) and neuroticism (Twenge, 2000). This study explored locus of control, often described as a belief, a perception, or a “generalized expectancy” about how the world works (Lefcourt, 1982; Rotter, 1966). Thus these meta-analyses are the first to examine birth cohort/time period effects in a cognitive orientation. Do beliefs about control change over historical time? Have the substantial social changes of the last 4 decades influenced young Americans’ perceptions of who controls their fate?

Locus of Control and the Larger Social Environment

It seems plausible that the larger social environment will influence locus-of-control beliefs. Just as countries around the world influence their citizens’ beliefs and personalities through the mechanism of culture, the social environment of different time periods produces birth cohort differences in personality (Twenge, 2000). In previous studies of personality traits, birth cohort accounted for a large portion of the variance, often larger

than that explained by family environment (e.g., Twenge, 2000, 2001a). Given that locus of control measures a belief that is supposedly learned (Rotter, 1966), it seems even more likely that the larger social environment will influence locus of control orientation. Any changes that occur are likely to be fairly linear; the social environment changes slowly, and any effects on beliefs may take time to appear. The trends that influence locus of control will be large and consistent over time rather than being one-time, short-term events, such as a natural disaster or an assassination.

Independence Model: Increases in Internality

Two models advance competing hypotheses about change over time in locus of control. The first, which we will call the independence model, predicts that locus of control has become more internal over the past 40 years. One of the most notable social changes over this time is the considerable increase in individualism (Gough, 1991; Helson, Jones, & Kwan, 2002; Twenge & Campbell, 2001). Although the 1950s and early 1960s were characterized by conformity to social norms, being an individual and “doing your own thing” became increasingly popular throughout the 1970s and 1980s (Frum, 2000; Yankelovich, 1981). Several authors have connected externality to conformity and internality to individual action (Crowne & Liverant, 1963; Kelman & Lawrence, 1972). With individualism increasing, one would expect internality to increase as well: Modern people are, in theory, strong, independent individuals in control of their own destinies and free of the confines of social forces. Some cross-cultural studies support this notion, finding more internal scores on the I-E scale in more individualistic nations (e.g., Hsieh, Shybut, & Lotsof, 1969; Hung, 1977; McGinnies, Nordholm, Ward, & Bhanthumnavin, 1974; for a review, see Dyal, 1983).

In addition, people have more control over their environments now than they did previously. Birth control is readily available; travel is less expensive and less dangerous; technology provides endless choices for shopping, communication, and entertainment. Prejudice based on race, gender, and sexual orientation have lessened, so people have greater freedom to direct their lives and make their own choices. Social rules and etiquette are not as strict as they once were. All these changes suggest that people should become more internal in their locus of control beliefs over time.

Alienation Model: Increases in Externality

In contrast, the alienation model predicts that locus of control has become more external over time. This model focuses on two historical trends: the tendency to

blame one's misfortunes on outside forces, and increases in negative social indicators. It reflects the greater cynicism, distrust, and alienation of more recent generations (Fukuyama, 1999; Pharr, Putnam, & Dalton, 2000; Putnam, 2000; Sloan, 1996; Strauss & Howe, 1991). High school students increasingly report that other people cannot be trusted, and voter participation (especially among young people) has declined (Fukuyama, 1999; U.S. Bureau of the Census, 2001); these are all symptoms of increasing political alienation (Pharr et al., 2000). Americans are increasingly alienated from their communities, with civic participation declining markedly during the past 40 years (Putnam, 2000).

The self-serving bias and the victim mentality.

Paradoxically, increases in individualism may lead to greater externality. Individualism promotes the use of the self-serving bias, which occurs when people attribute good events to themselves and bad events to outside forces. A recent meta-analysis found that the self-serving bias was significantly stronger in individuals with an external locus of control (Campbell & Sedikides, 1999). If more bad things happen than good things, attributing events to outside forces is self-protective (Harvey & Weary, 1981; Weiner, 1985; Weiner, Russell, & Lerman, 1979).

The self-serving bias is evident in the victim mentality, which has become more common in recent years (Sykes, 1992). In the 1950s, it was fashionable to believe that anyone could make it if they tried hard enough. However, the social movements of the 1960s and 1970s argued that this was a myth, and concepts such as social roles, desegregation, and socialization moved out of academic sociology and into common parlance. Societal-level explanations were more discussed and accepted, and cynicism about the government and society in general increased. Along with this sociologization came a greater psychologization (Twenge & Campbell, 2001), one that often focused on uncontrollable events such as one's childhood. People were urged to examine their "inner child" and understand how their parents' actions had shaped their personality and behavior. In recent court cases, defense attorneys sometimes explained that their client was abused as a child, which was why he or she turned to crime. Such arguments were rarely, if ever, used before the 1970s (Sykes, 1992). Trend watchers have also noted that it has become more common to attribute children's difficulties in school to external and/or uncontrollable sources (attention-deficit disorder, learning disabilities, etc.). One author argued that we have become "a nation of victims" that blames outrageous behavior on outside sources (Sykes, 1992).

Product liability cases, which blame companies for injuries suffered from substances such as tobacco or too-hot coffee, were virtually nonexistent before the

1970s (Caplow, Hicks, & Wattenberg, 2001; Sykes, 1992). In several recent court cases, overweight people have sued fast-food chains for making them fat. In the past, it was assumed that these cases could not be won because these choices were a matter of personal responsibility (Sykes, 1992). However, juries have awarded millions of dollars to consumers in such cases, and the number of civil suits has increased markedly over this time period (Caplow et al., 2001). This illustrates an external locus of control, as the litigants attribute negative outcomes to an external source (a corporation) rather than internally to the individual.

Negative social indicators. Negative social trends may also lead to increasing externality. Many indicators of the state of society seriously deteriorated during the past 4 decades of the 20th century. For example, the divorce rate increased, the violent crime rate skyrocketed, and the suicide rate for young people quadrupled (U.S. Bureau of the Census, 2001). If more negative events occur, people will attribute more events to outside forces to protect the self-concept, leading to greater externality. Negative social trends such as crime and divorce may also contribute to widespread feelings of alienation and cynicism, both precursors to externality.

These larger social trends have been accompanied by increased media coverage of negative, uncontrollable events on 24-hour cable news. In contrast, news broadcasts in the early 1960s were confined to a 15-min evening segment (Stark, 1997). The news events these media outlets cover are almost all negative and uncontrollable, especially to the average viewer (a partial list: wars, natural disasters, plane crashes, murders, child abductions, stock market crashes, and the events of September 11, 2001). Sitting in their living rooms, modern citizens may increasingly feel that they belong to a huge, complex, confusing, and terrible world that is utterly beyond their control to change. All these negative trends and historical events are beyond the control of the individual. As Lefcourt (1982) described in the first pages of his book, a negative, uncontrollable societal environment is fertile ground for externality.

Influences on Children and Adolescents

Larger social trends may have specific effects on children and adolescents, the populations studied here. The independence model is relevant for young populations, as the increase in individualism in adults has also appeared among younger groups. Children and adolescents have more freedom and choices now compared to the 1950s and 1960s. Girls have more careers open to them, and there is more individual variation in (and personal control over) the timing of college, marriage, and employment.

Young populations are also affected by the trends discussed in the alienation model. Divorce, which can be somewhat positive and controllable for adults, is rarely positive or controllable when experienced as the divorce of a parent. Several studies found that parental divorce and father absence was correlated with greater externality in children (Cook, Novaco, & Sarason, 1980; Duke & Lancaster, 1976; Guidubaldi, Perry, & Nastasi, 1987; Wiehe, 1984), and the divorce rate has increased. Parents' warmth, protectiveness, consistency, and attentiveness produce a more internal locus of control (Dew & Huebner, 1994; Katskovsky, Crandall, & Good, 1967; MacDonald, 1971; for a summary, see Crandall & Crandall, 1983). Several authors have noted that these parental behaviors declined during the 1960s and 1970s (Strauss & Howe, 1991; for a review, see Twenge & Campbell, 2001), which may also lead to greater externality. In general, children have been increasingly less protected from the adult world, a situation likely to lead to young people who are more cynical and less idealistic. All these trends point to greater externality over time.

Previous Empirical Evidence

No previous research has systematically examined birth cohort/time period differences in locus of control. However, Rotter (1971) reported that his samples from the late 1960s and early 1970s were considerably more external than those collected in the early 1960s. It is not known if this pattern was unique to Rotter's particular samples or if this pattern continued after the early 1970s.

Polling data provides some indirect evidence, and these sources suggest that externality has increased. In 1969, 58% of people agreed that "hard work always pays off." This decreased to 43% in 1976, a large change for only 7 years (Yankelovich, 1981). This question is similar to the Rotter internal item "Becoming a success is a matter of hard work; luck has little or nothing to do with it." Similarly, in 1966, only 26% of people agreed that "the people running the country don't care what happens to people like me." By 1977, this had more than doubled to 60% (Yankelovich, 1981); despite later periods of peace and prosperity, the percentage remained near 60% into the late 1990s (Pharr et al., 2000). This question closely echoes the Rotter external item "The world is run by the few people in power, and there is not much the little guy can do about it." Americans have also increasingly endorsed other external-sounding statements such as "Most people with power try to take advantage of people like yourself," "You're left out of things going on around you," "The rich get richer and the poor get poorer," and "What you think doesn't count very much anymore" (Pharr et al., 2000). Young people demonstrated the trend as well: Between 1976 and 1992, high school students increasingly agreed that "Planning only makes you unhappy since plans hardly ever work

out anyway" (Bronfenbrenner, McClelland, Wethington, Moen, & Ceci, 1996). This is very similar to Rotter's item "It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow." Thus survey questions similar to items on the I-E Scale have shown a consistent trend toward increasing externality. Behavioral data is also consistent with an increase in externality: Voting is at an all-time low (U.S. Bureau of the Census, 2001), suggesting that people think there is little they can do to change the government.

Overview

In this article, we examine change over time in locus of control. Study 1 gathered samples of college students who completed the Rotter I-E Scale (Rotter, 1966) between 1960 and 2002. We chose to study the I-E Scale because it was the first widely used measure of locus of control and has been the measure of choice in more than 50% of the studies examining the construct (Lefcourt, 1991). Study 2 examined samples of schoolchildren ages 9 to 14 who completed the CNSIE (Nowicki & Strickland, 1973), the oldest and most popular general locus of control measure for children. This study had two goals: (a) to replicate the college student results in samples free of selection bias and (b) to determine if birth cohort/time period differences in locus of control began as early as childhood. Replicating the results over two different populations should increase confidence in the results.

We analyzed the data using a modified meta-analysis technique called *cross-temporal meta-analysis* or *within-scale meta-analysis* (e.g., Twenge, 2000; Twenge & Campbell, 2001). Cross-temporal meta-analysis does not compute an effect size for each study but instead examines the change in mean scores on psychological measures over time. In this case, we searched for dissertations that mentioned locus of control in their abstracts, located the full text, and recorded the mean score of the sample on the locus-of-control measure (if reported). Because the data are analyzed within one measure, it is possible to directly compare means across samples collected at different times. Thus we examined the correlation (weighted for sample size or variance) between the sample mean scores and their years of data collection.

Study 1

This study gathered data from samples of American college students who completed the I-E Scale between 1960 and 2002. Using samples from the literature eliminates the problem of many birth cohort studies, which have often relied on retrospective accounts (e.g., Klerman & Weissman, 1989; Lewinsohn et al., 1993).

Because college students are roughly the same age, data collected at different times provides a test of birth cohort (or time period) differences without any confounding with age differences.

In previous birth cohort studies (e.g., Twenge, 2000), we searched the Web of Knowledge citation databases for articles that cited the scale in question and used keywords to search for dissertations and master's theses. In this study, our primary source of data was dissertations and master's theses. We decided not to systematically search for journal articles after preliminary searches yielded an unmanageable number of articles. A Web of Knowledge search revealed that 4,331 articles cited the Rotter article (1966) between 1982 and 2002 (1982 is the earliest year included in the available version of the computer database). Before 1982, the Rotter article was cited 2,735 times (Wong & Sproule, 1983), resulting a total of 7,066 citations for the period 1966–2002. PsycInfo searches using various keywords (e.g., “locus of control,” “internal-external locus of control”) consistently yielded more than 10,000 articles. Given the popularity of the scale, we guessed that searching dissertations and master's theses would yield more than enough data points to draw conclusions about change over time (and this conjecture was correct, as it yielded 97 samples of college students). Another option would have been a random sampling of journal articles; however, dissertations and master's theses offered two additional advantages. First, they do not suffer from publication bias and are the primary source of unpublished data. Second, by virtue of their greater length, dissertations and master's theses are more likely than journal articles to report means on scales such as the Rotter measure.

A study of college student samples over time must address the issue of changing college populations. However, these confounds are minimal. As discussed extensively in previous research (e.g., Twenge, 2000, 2001b), the composition of college student samples has actually not changed very much. Racial and socioeconomic compositions are very similar across this time period (Dey, Astin, & Korn, 1992; U.S. Bureau of the Census, 2001), and changes in enrollment are nonlinear and relatively small. In addition, three previous studies of birth cohort changes have found almost identical results for college student and child samples (Twenge, 2000, 2001b; Twenge & Im, 2003); as child samples are virtually free of selection bias, this suggests that the results were not due to population changes on demographic variables.

Method

Measure

As noted previously, the I-E scale is the most popular measure of locus of control, with 50% of studies on

locus of control using this measure. The scale has suitable internal reliability (Kuder-Richardson coefficient = .70; Rotter, 1966). Numerous studies have detailed the scale's validity (for a review, see Lefcourt, 1982). Although written in the mid-1960s, the scale items do not appear dated, as they use very general phrasing (e.g., “There will always be wars, no matter how hard people try to prevent them;” “What happens to me is my own doing;” “In the long run the people are responsible for bad government on a national as well as on a local level”).

Literature Search

We searched Dissertation Abstracts International 1950–2002. This database does not have abstracts for dissertations completed 1979 or before, so for this time period we used the inclusive keyword search “locus of control or Rotter.” After 1980, when abstracts are included, we used the keyword “internal-external locus of control or Rotter.”

We supplemented this search with a few other data points. To provide more early data points, we included Rotter's (1966) normative sample, as well as the college student data points cited in Table 3 of Rotter's article and the college student data points in Appendix VII of Lefcourt (1982). To provide a more recent data point, we also included a sample of 91 undergraduates who completed the I-E scale at San Diego State University between October 2002 and February 2003.

Inclusion Rules

Possible studies for the analysis were included or excluded based on specific inclusion rules. To be included in the analysis, a study had to meet the following criteria: (a) participants were undergraduates at conventional four-year institutions; (b) participants were attending college in the United States; (c) the study included at least 20 participants; (d) participants were not clients at a counseling center or any other group singled out for being maladjusted; (e) means were reported for unselected groups of students, not those chosen for scoring high or low on another measure; and (f) a mean for the 23-item I-E scale was reported. Year of data collection was coded as 2 years prior to publication unless another year was mentioned in the article (Oliver & Hyde, 1993).

Final Sample and Weighting for Analyses

This method yielded 97 studies including 18,310 college students (8,720 men and 9,590 women). The analyses will determine how locus-of-control scores have changed over time, primarily by examining correlations between the mean scores and year of data col-

lection. As in previous cross-temporal meta-analyses, the correlations will be weighted by the sample size of each study to provide better estimates of the population mean. We also report analyses weighted by the inverse of the variance (called w), a technique that includes the within-study standard deviation as well as sample size; w is the usual weight applied in meta-analyses. Shadish and Haddock (1994, pp. 272–273) provided weights for aggregated data, and we modified this technique for means to compute the variance: the within-study standard deviation squared, $\times 1/n$ of the individual study. We then inverted the variance ($1/v$) to make the weighting variable (w). (See also Lipsey & Wilson, 2001.) This technique was also used in Twenge and Campbell (2001). However, we relied on analyses weighted by sample size for the majority of calculations, as these include the largest amount of data (w requires a sample standard deviation, which some of the sources did not report).

Results and Discussion

Correlations With Year

College students have become more external over time, as shown by the positive correlation between I-E scores and year (see Table 1 and Figure 1). The increase is very linear ($r = .70$ in the analyses weighted by sample size, $.67$ in those weighted by w). Samples of men only or women only show similar results. The increase is fairly steady over time; the correlation is still significant if the analysis (weighted by sample size) is limited to samples collected after 1980 ($r = .43, p < .01, k = 44$) or even to samples collected after 1990 ($r = .47, p < .03, k = 21$). Thus scores continued to grow more external throughout the 1980s and 1990s. These results are consistent with the alienation model, which hypothesized that locus-of-control scores would become more exter-

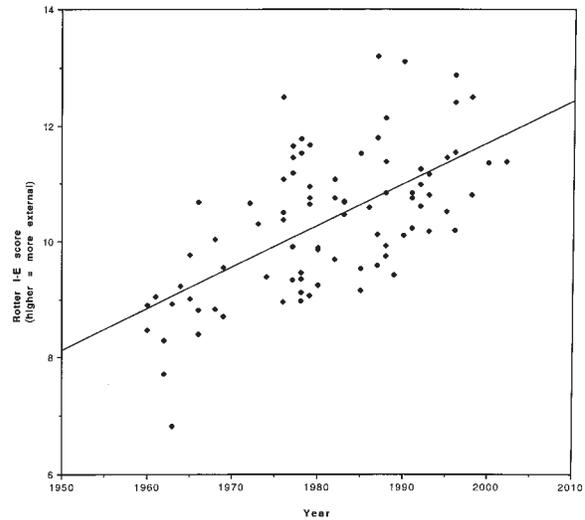


Figure 1. College students' locus of control over time.

nal over time. From 1960 to 2002, college students increasingly believed that their lives were controlled by outside forces rather than their own efforts.

Magnitude of Change

College students' I-E scores became steadily more external over time. But how large was this increase? To calculate the magnitude of change in locus of control, we used the regression equations and the average standard deviation (SD) of the individual samples. We relied on the regression equations weighted by sample size, as these include the largest amount of data. To compute the mean scores for certain years (e.g., 1960 or 2002), we used the regression equation from the statistical output (used to draw the regression line). The regression equation follows the algebraic formula $y = Bx + C$, with B = the unstandardized beta, x = the year, C = the constant, and y = the mean score. This formula yielded the position of the regression line (the I-E score, on the Y axis) for a particular year. We obtained the average SD by averaging the within-sample SD s reported in the data sources; thus this reflects the average variance of the measure in a sample of individuals.

It is important to note that this method avoids the ecological fallacy (which Rosenthal, Rosnow, and Rubin, 2000, call "alerting correlations"). The ecological fallacy occurs when the magnitude of change is calculated using the variation in mean scores rather than the variation within a population of individuals (e.g., using the correlation between mean scores and year to calculate the magnitude of an effect). This exaggerates the magnitude, because mean scores do not differ as much as individual scores. The method used here, in contrast, uses the standard deviation of the individual studies to capture the variance of the scale among a population of individuals. This technique probably still results in

Table 1. Correlations Between College Students' and Children's Locus of Control Scores and Year

Sample	r With Year Weighted by Sample Size	r With Year Weighted by Inverse Variance (w)
College students (Rotter I-E)		
Mixed-sex samples	.70*** (85)	.67*** (75)
Male samples	.62*** (30)	.66*** (26)
Female samples	.68*** (32)	.65*** (29)
Children (CNSIE)		
Grades 4–8, combined	.49*** (41)	.51** (34)
Grades 4–5	.70*** (14)	.65* (12)
Grades 6–8	.47* (27)	.50* (22)

Note: Number of samples are in parenthesis. There are fewer samples weighted by w because some samples did not report standard deviations.

* $p < .05$. ** $p < .01$. *** $p < .001$.

somewhat higher effect sizes, as it does not account for variance across groups. Nevertheless, it is the most straightforward way to quantify the magnitude of change over time.

The regression equation reveals that in 1960, the average college student scored 8.70 on the I-E scale. This increased to 11.96 in 2002. With an average standard deviation of 4.03, I-E scores have increased .81 *SDs* over this time period. This is a large effect using Cohen's (1977) guidelines (.80 or greater = large). This effect size also means that birth cohort/time period explains 14% of the variance in I-E scores.

As another illustration, Rotter's normative sample, collected around 1962, averaged 8.29 on locus of control. The sample of undergraduates from 2002–2003 averaged 11.38 (similar to other scores from this time period; see Figure 1). Using Rotter's (1966) percentile ratings, the average 2002 participant scored around the 80th percentile (80.71%, interpolating .38 between the scores for 11 and 12 and averaging between Rotter's distributions for men and women). Thus the average 2002 student scored more externally than 80% of college students in the early 1960s.

The single-sex samples showed similar results, though the numbers are somewhat lower because these samples covered a smaller range of years. Men's I-E scores rose from 8.63 in 1960 to 11.00 in 1991, an increase of .61 *SDs* (9% of the variance). College women's scores rose from 8.88 in 1960 to 11.93 in 1995, an increase of .78 *SDs* (13% of the variance).

Study 2

We conducted Study 2 to replicate the change over time in locus of control among samples of schoolchildren who completed the CNSIE. These samples have no selection bias, as almost all children enroll in school, and this remained relatively constant over this time period. We can also determine when, developmentally, changes in locus-of-control scores occurred. Did only adolescents and young adults feel that their lives were increasingly out of their control, or do children show the same trend? At what age did the birth cohort/time period difference in locus of control begin to appear?

Method

Measure

The CNSIE is the most popular measure of general locus of control among children. Internal reliability is adequate, ranging from .63 to .81 depending on the age of the sample (Nowicki & Duke, 1983). Convergent validity has been shown in numerous studies summa-

rized in Nowicki and Duke (1983). Similar to the I-E scale, the items avoid seeming dated by their general nature: for example, "Are some kids just born lucky?" "Are you often blamed for things that just aren't your fault?" "Most of the time do you find it useless to try to get your own way at home?"

Literature Search

Similar to the method in Study 1, we searched Dissertation Abstracts International using the keywords "Nowicki or internal-external control" for dissertations and master's theses published after 1980 and the keywords "Nowicki or locus of control" for those published before 1980 (when abstracts are not available.)

Inclusion Rules

The inclusion rules were identical to those used in Study 1, except we included samples of children enrolled in school. Scores on the CNSIE vary widely with age (Lefcourt, 1991; Weisz & Stipek, 1982). Thus we only included samples from the most common age groups that completed the questionnaire, from the fourth grade to the eighth grade. (We did not include younger samples because they were infrequent and because the CNSIE was intended for populations older than age 9; Nowicki & Duke, 1983.) We also performed separate analyses by age group (elementary age, fourth to fifth grade; middle school, sixth to eighth grade).

Final Sample

This method yielded 41 samples, with data from 6,554 children aged 9 to 14 years. There were 14 samples of children in the fourth and fifth grades (ages 9 to 11 years) and 27 samples of children in the sixth to eighth grade (ages 11 to 14 years). As in Study 1, correlations were weighted by sample size and by the inverse of the variance (w).

Results and Discussion

The increase in externality among college students also appears in child samples: Children's CNSIE locus-of-control scores become increasingly more external from the 1970s and the 1990s (see Figure 2). The correlation between locus of control and year, weighted by sample size or w , was significant and positive for all age groups combined, elementary school students, and middle school students (see Table 1). All these correlations were similar when controlled for age of the sample.

The magnitude of change is also similar to that in college samples. Using the regression equation, the av-

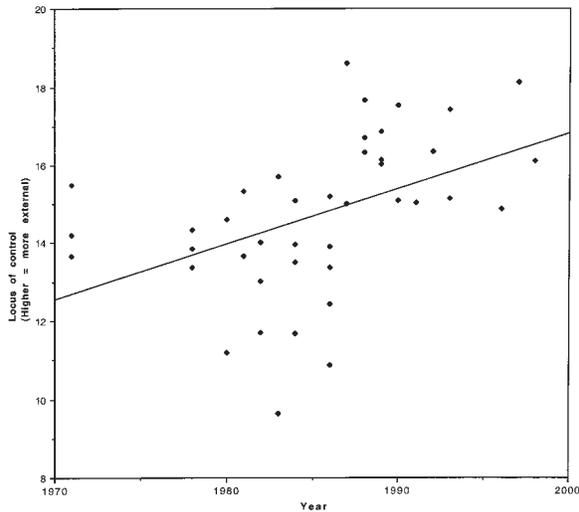


Figure 2. Children's locus of control over time.

average CNSIE score (for all ages) was 13.00 in 1971 and 16.40 in 1998. With an individual sample *SD* of 4.32, this represents a shift of .79 *SDs*, a large effect size that explains 14% of the variance. This variance estimate is the same as that for the college student samples; however, it is more powerful because the child samples cover a shorter range of years (27 years, compared to 42 years for the college student samples). When broken down by age group, the effect size was stronger for elementary-age students (1.32) than for middle-school-age students (.72).

Thus, the change over time in locus-of-control scores replicates in child samples. Children, even those as young as age 9, increasingly feel that their lives are controlled by outside forces rather than their own efforts. Apparently the larger social forces leading to increased externality reach young children as well as adolescents and young adults.

General Discussion

Young Americans increasingly feel that outside forces control their lives. This is consistent with the alienation model, which predicted an increase in externality. As Rotter (1971) put it, "College students feel more powerless to change the world and control their own destinies now" (p. 59). In the 30 years since he made that statement, young people's locus of control scores have grown even more external.

The change has been substantial. College students' I-E scores increased .82 standard deviations between 1960 and 2002. This is a large change: The average 2002 student was more external than 80% of college students in the early 1960s. Children's locus of control

scores increased .79 standard deviations between 1971 and 1998, also a large increase.

Birth cohort/time period explains 14% of the variance in locus of control. This is a large effect; in most studies, family environment explains less than 10% of the variance in personality traits (e.g., Bergeman, Plomin, McClearn, Pedersen, & Friberg, 1988; Loehlin, 1992). This is consistent with previous research on birth cohort differences, which has primarily examined personality traits (e.g., Twenge, 2000, 2001a). This study expands birth cohort/time period research into the area of cognitive orientations, as locus of control is usually seen as a way of viewing the world (rather than strictly a personality trait). Rotter (1966), for example, viewed locus of control as a generalized expectancy about life events and the workings of the world in general. Thus cognitive orientations can change with historical time just as personality traits do.

Conclusions for Culture and Development

The results clearly support the alienation model outlined in the introduction. As individualism has increased, locus of control has become more external. These data cannot determine the exact origins of the increase in externality; however, several trends seem relevant. Greater cynicism and alienation leads people to believe that their personal actions mean little. Blaming others for negative events has also become more popular, and people are less likely to believe that anyone can be a success despite obstacles in the way. Rather than leading to independence, the increasing individualism of American culture has led people to believe that there is little they can do to change the larger world.

These data also suggest that the outside environment has a strong effect on children. This is contrary to the usual view of children as isolated within their homes and influenced primarily by their families. Children as young as age 9 demonstrate change over time in locus of control, probably because of changes in the larger social environment. Of course, the effect of the larger environment might be mediated by the children's parents; if parents become more external over time, they may pass these attitudes along to their children. The cynical cultural lesson that one's fate is determined by outside forces apparently reaches children at an early age.

Implications

Unfortunately, the implications of increasing externality are almost uniformly negative. Most researchers who study locus of control strongly believe that internal control is the more desirable choice and describe externals in negative terms (e.g., Lefcourt, 1991; Rotter, 1971; however, see Rotter, 1975).

Lefcourt (1991) described externality as a “failure to act in one’s own behalf in trying to remedy an unpleasant situation, in the face of potential stress, or in trying to bring about rewarding outcomes” (p. 413). This is not an encouraging picture in a society where young people’s externality has increased almost a standard deviation.

Research bears out this negative perception, finding that externals report lower well-being (Larson, 1989), are more likely to be depressed (Benassi, Sweeney, & Dufour, 1988; Hahn, 2000; Mirowsky & Ross, 1990; Naditch, Gargan, & Michael, 1975), display more anxiety (Kilpatrick, Dubin, & Marcotte, 1974; Morelli, Krottinger, & Moore, 1979), and cope poorly with stress (Krause & Stryker, 1984; Sandler & Lakey, 1982). Externals have weakened self-control and an inability to delay gratification (Bialer, 1961; Karabenick & Srull, 1978; Mischel, Zeiss, & Zeiss, 1974).

Externals also consistently achieve less in school, as shown in two meta-analyses and numerous individual studies (Cappella & Weinstein, 2001; Findley & Cooper, 1983; Kalechstein & Nowicki, 1997). A widely publicized report by Coleman and his colleagues concluded that internal locus of control was a better predictor of school achievement in minority children than any other variable (Coleman et al., 1966).

Several studies have also linked externality to increased juvenile delinquency (Parrott & Strongman, 1984; J. M. Shaw & Scott, 1991). Sykes (1992) argued that the culture of victimization (a possible cause of the increase in externality) encourages self-loathing and the expectation of low functioning and achievement. Externality encourages a victim mentality that attributes negative experiences to outside sources; Sykes argued that this undermines the idea of personal responsibility, leading to negative outcomes such as crime, inactivity, and an uncivil culture.

Some of these implications are already evident in our society today. Anxiety and depression are at record levels (Klerman & Weissman, 1989; Twenge, 2000). Some authors have argued that self-control has decreased in recent decades, offering as evidence high rates of drug abuse and teenage pregnancy (Baumeister, Heatherton, & Tice, 1994). Measures of academic achievement have also declined; SAT scores had decreased so much since the 1950s that the test had to be renormed in 1995 (U.S. Bureau of the Census, 2001). Voter participation has steadily declined over this time period, especially for voters ages 18 to 24 years (Bronfenbrenner et al., 1996). Although a direct causal link cannot be made, the increases in externality may be related to the concurrent trends toward increased depression and anxiety, drug abuse, diminished academic achievement, and voter apathy.

It is possible, however, that the absolute level of locus of control is not as important as one’s relative level. Although having an external locus of control may have

been maladaptive in previous decades, perhaps it is not as maladaptive now. Being moderately external may not be maladaptive if everyone has these beliefs.

Future Research

This research finds that externality increases over time among children and college students. How does locus of control change as people age? This might help determine whether externality has also increased among adults older than college age. Only a few longitudinal studies have addressed this question. Wolffe and Robertshaw (1982) found a small increase in internality in the 4 years after high school. Wilkins (1975) found no differences in overall I-E scores between ages 19 and 29 but did find a small increase in internality on the Personal Control subscale. A future longitudinal study should address how locus of control changes after young adulthood.

There have been a few cross-sectional studies that include older people; however, in a cross-sectional study, differences could be due to either birth cohort or age. If the change in externality is a birth cohort effect (rather than time period), these studies should find substantially greater internality among older people, who belong to earlier birth cohorts. This has not been the case; most cross-sectional studies find few differences in locus of control during young adulthood and middle age (Grob, 2000; Mirkowsky, 1995) and even some increases in externality in older age groups (Mirkowsky, 1995; B. A. Shaw & Krause, 2001; note, however, that most of these older cohorts were college age before 1960 and thus were not sampled in the present meta-analysis). To reconcile the cross-sectional studies with the birth cohort/time period results, people would have to grow considerably more external with age and/or with historical time. This may mean that the increase in externality is a time period effect (rather than a birth cohort effect). Another explanation could be the lower levels of education in older age groups, as greater educational attainment is correlated with internality (Mirkowsky, 1995; B. A. Shaw & Krause, 2001); this would mean that the discrepancy was related to the use of the cross-sectional method. Clearly, more research is needed to determine how locus of control changes with age. A multiple-cohort longitudinal study would be ideal for determining how locus of control relates to age, birth cohort, and time period.

Concluding Remarks

At the end of his 1971 *Psychology Today* article, Rotter noted that college students became increasingly external in their locus of control during the late 1960s and early 1970s. He concluded that people should take active steps to reverse this troubling trend and pre-

dicted what would happen if externality continued to increase:

Our society has so many critical problems that it desperately needs as many active, participating internal-minded members as possible. If feelings of external control, alienation and powerlessness continue to grow, we may be heading for a society of dropouts – each person sitting back, watching the world go by. (p. 59)

In many ways, the continued increase in externality has made his prediction come true; many members of modern society feel alienated and apathetic. Whether we can turn this tide remains to be seen. For now, young people increasingly feel that their fate is beyond their control.

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