

1-1-2007

# Understanding Hope: A Review of Measurement and Construct Validity Research

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Published version. "Understanding Hope: A Review of Measurement and Construct Validity Research," in *Oxford Handbook of Methods in Positive Psychology*, edited by Anthony D. Ong, Manfred H. M. van Dulmen. New York: Oxford University Press, 2007: 83-95. [Publisher link](#). © 2007 Oxford University Press. Used with permission.

## Understanding Hope

### A Review of Measurement and Construct Validity Research

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Hope has been discussed by philosophers, theologians, educators, and scientists, to name but a few groups of people, over the preceding two millennia. During the last 15 years, C. R. Snyder and his colleagues at the University of Kansas have developed a theory and associated measures of the hope construct that have received extensive, detailed attention both within and outside the field of psychology. In this chapter, we describe Snyder's hope model and some of the research findings that have supported the validity of this construct. Beginning with a conceptual definition of hope, we move to relevant findings about the usefulness of hope in the lives of individuals in various life arenas. We describe measures developed for assessing hope in children and adults, as well as current issues associated with the validity of hope measurement. Finally, we discuss future directions for further investigation of hope.

#### **The Hope Model**

Hope has been conceptualized as pathways and agency goal-directed thinking (Snyder, Irving, & Anderson, 1991). As such, this new approach, which has been called hope theory, contrasts with previous emotion-based or unidimensional models (Snyder, Cheavens, & Michael, 1999). More specifically, Snyder, Irving, et al. (1991, p. 287) defined hope as "a positive motivational state that is based on an interactively derived sense of successful (a) agency (goal-directed energy) and (b) pathways (planning to meet goals)." This model involves three interrelated cognitive components—goals, agency, and pathways (Snyder, Ilardi, Michael, & Cheavens, 2000). Pathways and agency thinking are additive, reciprocal, and positively related, but they are not synonymous, nor does either component alone define hope.

Snyder proposes that goals are the targets of mental action sequences (Snyder, Ilardi, et al., 2000). As the anchor of hope theory (Snyder, 1994b), goals need to be sufficiently important to occupy a person's conscious thought (Snyder, 2000). Furthermore, the goals that necessitate hope must fall somewhere in the middle of a probability of attainment continuum going from goals that are absolutely certain of being achieved to those that are untenable. To reach goals, people must perceive that they are capable of imagining one or more routes to their goals. Snyder (1994b) defined pathway thinking, also known as waypower, as the "mental capacity we can call on to find one or more effective ways to reach our goals" (p. 8). When barriers to block desired goals emerge, as they inevitably do, the mental flexibility of pathway thinking allows people to navigate around those obstacles so as to find alternate routes.

Snyder (2000) defines agency as "the motivational component to propel people along their imagined routes to goals" (p. 10). Also known as willpower, agency reflects the perceived ability to initiate and sustain movement toward a goal, along with the capacity to channel mental energy toward alternate routes if barriers are encountered. Thus, agency reflects a reservoir of determination-

like thoughts such as "I know I can do this," and "I'll try," which help people to move toward their desired goals (Snyder, 1994b).

As can be seen in Snyder's (2002) goal-directed thought sequence of hope theory (figure 6.1, moving from left to right), agency and pathways thoughts are learned throughout childhood and adolescence. These learned thoughts continually influence subsequent emotions, such that successful goal pursuits of high-hope individuals cast a positive emotional set over the process in general (see Emotion Set to the right of the Pathways and Agency Thoughts). Likewise, individuals who lack hope may enter the thought sequence with negative feelings toward goal pursuits. Continuing through the goal-directed thought sequence, individuals then enter the pre-event analysis phase, during which they appraise the outcome value of a goal. Goals that are sufficiently important and that are based on a person's own standards are likely to be more appealing to the individual. Once a goal is chosen and an individual begins moving toward goal attainment, agency and pathways thoughts are activated and are utilized to again appraise the goal outcome value. As can be seen, this sequence allows for

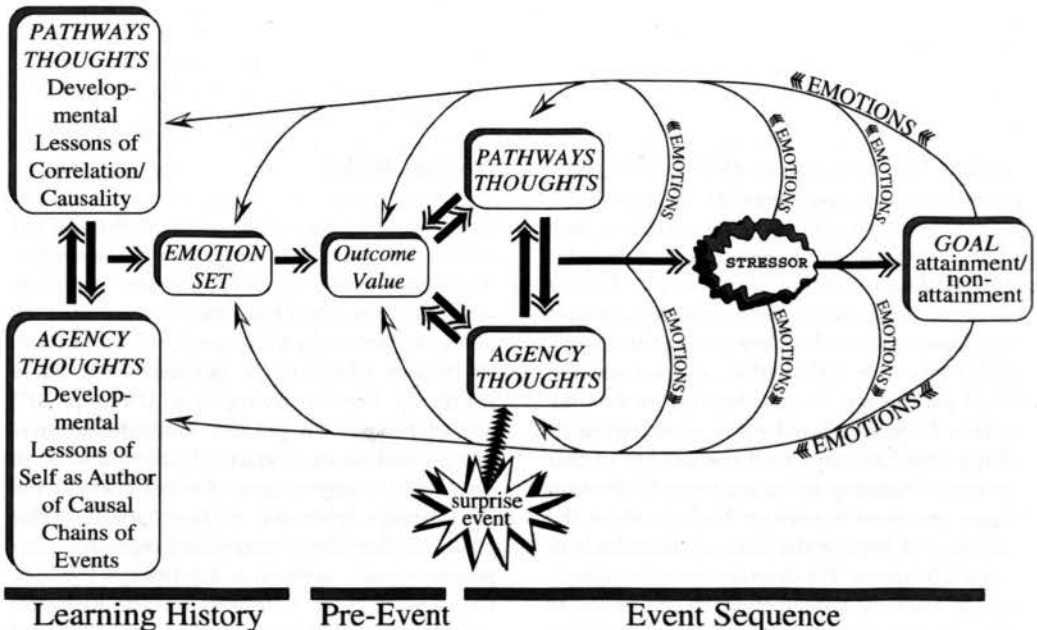


Figure 6.1. Schematic of goal-directed thought sequence in hope theory. (From Snyder, 2002. Reprinted with permission from author.)

“check-backs” such that goals can be judged and modified at different points.

It should be noted that most individuals encounter stressors in the goal pursuit (see figure 6.1), which are challenges of sufficient magnitude to potentially jeopardize the hopeful thought. As expected, low-hope individuals are more likely to be affected by stressors and “become derailed in their goal pursuits” (Snyder, 2002, p. 255). In contrast, high-hope individuals will likely view the stressor as a challenge and be able to harness agency and pathways thoughts toward overcoming this obstacle. As individuals progress toward goal attainment, the success feedback from overcoming the stressor reinforces the individuals’ hopeful thinking. Thus the hope theory model involves feedback and feed-forward emotion-based mechanisms that serve to direct current and future goal attainment.

### Research Findings About Hope in Children, Youth, and Adults

Researchers have investigated Snyder’s model of hope and its relation to several positive correlates. Using the Children’s Hope Scale (Snyder, Hoza, et al., 1997) and the Adult Hope Scale (Snyder, Harris, et al., 1991), hope has been studied in its relation to psychological adjustment, health outcomes, and athletic and academic performance (Snyder, 2002).

#### Psychological Adjustment

Snyder, Harris, et al. (1991) found that scores on the Hope Scale correlated positively with several measures of psychological adjustment, including optimism, control perceptions, problem-solving, positive affect, and self-esteem. With respect to relationships, high-hope adults have been shown to form strong attachments to others (Snyder, Cheavens, & Sympson, 1997) and report having had close bonds to caregivers as children (Rieger, 1993). Furthermore, increased social competence (Snyder, Hoza, et al., 1997), less loneliness (Simpson, 1999), and more perceived social support (Barnum, Snyder, Rapoff, Mani, & Thompson, 1998) all have been related to higher levels of hope.

Further support for the relationship between hope and psychological adjustment is suggested from research with children. In a study investigating children’s hope, Snyder, Hoza, et al. (1997)

found that hope scores were positively correlated with children’s perceptions of athletic ability, physical appearance, social acceptance, and scholastic competence, thereby suggesting that hope is related to children’s beliefs about their abilities to accomplish goals (Snyder, Sympson, Michael, & Cheavens, 2000). Snyder, Hoza, et al. (1997) also found that higher hope was related to lower levels of depression in children.

#### Physical Health

Hope also appears to be related to coping behaviors exhibited by people with health concerns and those surviving illness. In people coping with spinal cord injuries, Elliott, Witty, Herrick, and Hoffman (1991) found that higher hope was associated with lower risk for depression and a more adaptive coping style. Barnum, Snyder, Rapoff, Mani, and Thompson (1998) found that adolescent burn survivors with higher hope related to caregivers more positively and also engaged in fewer activities that undermined recovery. Among adults living with severe arthritis (Laird, 1992), blindness (Jackson, Taylor, Palmatier, Elliott, & Elliott, 1998), and fibromyalgia (Affleck & Tennen, 1996), higher hope was related to better adjustment in coping. Finally, Stanton et al. (2000) found that emotional expression and hope predicted perceived health and a sense of vigor in participants with breast cancer.

#### Academic and Athletic Performance

Although hope scores are not significantly correlated to intelligence, children and adults with higher hope scores have been shown to perform better on standardized achievement measures such as semester grades, graduation rates, and the Iowa Test of Basic Skills (Snyder, Harris, et al., 1991; Snyder, Hoza, et al., 1997; Snyder, Ilardi, et al., 2000). In a study of male and female college students who were followed for 6 years, it was found that Hope Scale scores significantly predicted higher grade point averages and lower dropout rates, even after controlling for college entrance examination scores (Snyder et al., 2002; Snyder, Wiklund, & Cheavens, 1999). In the arena of athletics, results from a study by Curry, Snyder, Cook, Ruby, and Rehm (1997) suggest that hope scores account for much of the variance related to female collegiates’ track performance at track meets, even when ratings

of natural ability, self-esteem, confidence, and locus of control were statistically controlled. Brown, Curry, Hagstrom, and Sandstedt (1999) also found that high-hope girls attending a summer sport camp were less likely than low-hope girls to consider quitting their sports, and they also set more sport-specific goals.

### **Measuring Hope: Traditional Methods for Supporting Scale Validity**

Several scales have been developed by Snyder and colleagues to assess hope in adults and children: the Adult Dispositional Hope Scale, the Children's Hope Scale, and the State Hope Scale. One of the most important questions to be answered in the development of any psychological measure is whether it measures what it is purported to measure. In other words, is the scale valid? The historical approach for establishing the validity of a scale is first to establish its reliability, demonstrate a factor structure that is consistent with theory, and then to present a variety of correlational evidence, the sum of which is intended to establish the construct validity of the scale. In the following sections, the ways in which this approach has been used with three hope measures will be reviewed.

#### **Adult Dispositional Hope Scale**

Also known as the Goals Scale, in order to make its purpose less obvious to respondents, the Hope Scale was originally described in a 1989 article (Snyder, 1989), and later described in greater detail by Snyder, Irving, et al., in 1991. The Hope Scale is a self-report measure of 12 items. Participants taking the Hope Scale are asked to rate statements using a four-point Likert scale from 1 (definitely false) to 4 (definitely true). The highest possible score is 32, and the lowest is 8.<sup>1</sup> The Hope Scale contains four items that measure agency (e.g., "I energetically pursue my goals"), and four items that tap appraisals of persons' abilities to find pathways to navigate their goals under both unimpeded and impeded circumstances (e.g., "I can think of many ways to get out of a jam"). Four of the 12 items are distracters that are not scored for the total hope score but are aimed at making the scale content less obvious. Consistent with the hope theory developed by Snyder and his colleagues, the Hope Scale provides an agency

subscale score, a pathways subscale score, and a total hope score. According to norms developed by Snyder, Harris, et al. (1991), average scores for college and noncollege samples of adults are approximately 24, with significantly lower Hope Scale scores for individuals who are inpatients at psychiatric hospitals or those who are seeking psychological treatment (Snyder, 1995). The Hope Scale scores of women and men were virtually the same across the samples used to develop norms.

#### *Reliability*

The overall Hope Scale has demonstrated sound internal reliability, with Cronbach alphas ranging from .74 to .88 (Cramer & Dyrkacz, 1998; Snyder, Harris, et al., 1991; Sumerlin, 1997). Both subscales have shown adequate internal reliability. Cronbach alphas have ranged from .70 to .84 for the Agency scale and from .63 to .86 for the Pathways scale (Cramer & Dyrkacz, 1998; Snyder et al., 1991; Sumerlin, 1997).

In addition, the Hope Scale has been shown to be temporally stable. In college samples, the test-retest reliability was .85 over a 3-week period (Anderson, 1988), .73 over an 8-week interval (Harney, 1989), and from .76 to .82 over a 10-week interval (Gibb, 1990; Yoshinobu, 1989).

#### *Factor Structure*

The initial factor structure of the Hope Scale was consistent with the two-factor theory of hope. Principal-components exploratory factor analysis with oblique rotation suggested two main factors that accounted for 52% to 63% of the variance across eight different samples (Snyder, Harris, et al., 1991). As expected, the agency items loaded highly on Factor 1, but not on Factor 2, whereas the pathways items loaded only on Factor 2. Although these subscales were separate, they were positively correlated ( $r = .38$  to  $.69$ ) across eight different samples (Cramer & Dyrkacz, 1998; Magaletta & Oliver, 1999; Snyder, Harris, et al., 1991; Sumerlin, 1997). These findings are consistent with the contention that the Hope Scale consists of two separate but related subscales for agency and pathways thought.

#### *Validity*

The convergent validity of the Hope Scale has been shown through its predicted correlations

with several other scales that have been designed to measure similar concepts. For example, the Hope Scale correlated positively ( $r = .60$ ) with the original version of the Life Orientation Test (Scheier & Carver, 1985), a measure of trait optimism (Gibb, 1990). The Hope Scale also has correlated positively with measures of success expectations, self-esteem, self-actualization, and meaning in life (see Cheavens, Gum, & Snyder, 2000, for a review). Similarly, the Hope Scale has correlated negatively with several scales measuring concepts that are antithetical to hope. These scales include hopelessness, depression, suicidal ideations, and psychopathology (see Cheavens et al., 2000, for a review).

The discriminant validity of the Hope Scale was tested by correlating it with the Self-Consciousness Scale (Fenigstein, Scheier, & Buss, 1975). This measure was selected because there was no theoretical basis for predicting differences in self-consciousness between high- and low-hope individuals. As expected, the Hope Scale did not correlate significantly with either subscale of the Self-Consciousness Scale (Gibb, 1990).

The incremental validity of the Hope Scale was tested by examining the unique variance that it yielded when compared with other variables in predicting the same outcome variables. The goal of such tests of predictive utility was to ascertain the degree to which the Hope Scale scores augmented the predictive capabilities of other measures. For example, Sigmon and Snyder (1990) reported that the Hope Scale correlated positively with positive affect and negatively with negative affect, as measured by the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). Moreover, when both the Hope Scale and the PANAS were entered into a regression equation predicting scores on the planning subscale of the COPE (Carver, Scheier, & Weintraub, 1989), the Hope Scale accounted for significant unique variance in COPE scores beyond that accounted for by the PANAS. Similarly, when using problem-focused coping from the revised Ways of Coping Scale (Folkman & Lazarus, 1985) as the criterion variable, the Hope Scale accounted for significant unique variance beyond that accounted for by scores on the trait form of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Luchene, 1970) and the Taylor Manifest Anxiety Scale (Taylor, 1954). In another study, Hope Scale scores accounted for unique variance in

general well-being beyond that accounted for by measures of self-efficacy and optimism (Magaletta & Oliver, 1999).

Taken together, these findings suggest that Hope Scale scores account for unique variance over other indices in predicting a variety of criterion variables. Hence, although hope is related to concepts such as positive and negative affect, optimism, and self-efficacy, it is not identical to any of them (Cheavens et al., 2000).

### Children's Hope Scale

The Children's Hope Scale (CHS; Snyder, Hoza, et al., 1997) is a six-item measure designed for children ages 8 to 16. Three items on the CHS measure agency (e.g., "I think I am doing pretty well"), whereas the other three items measure pathways (e.g., "I can think of many ways to get the things in life that are most important to me"). Participants taking the CHS are asked to rate statements using a six-point Likert scale from 1 (none of the time) to 6 (all of the time). The highest possible score is 32, and the lowest is 8. Total hope scores can range from 6 to 36, while Agency and Pathways subscale scores can range from 3 to 18. According to norms developed by Snyder, Hoza, et al., the average level of hope on the CHS is 25.

### Reliability

The CHS has shown acceptable internal reliabilities across six samples of children, with Cronbach alphas ranging from .72 to .86 (Snyder, Hoza, et al., 1997). Because this scale is intended to assess overall hope only, reliabilities for the individual components were not assessed. The temporal stability of the CHS has been demonstrated over a 1-month interval in two samples of children with test-retest correlations of .71 and .73.

### Factor Structure

A principal-components factor analysis with varimax rotations was conducted on an earlier, 12-item version of the CHS requesting two factors. Three agency and three pathway items were discarded from the scale based on weak or equivalent loadings on one of the two factors. The resulting six-item scale was subjected to the same factor analysis. As expected, the three agency items loaded strongly on Factor 1 and not

Factor 2, and the three pathways items loaded strongly on Factor 2 and not Factor 1. These two factors accounted for 32.5% and 25.9% of the variance in the sample (Snyder, Hoza, et al., 1997). In addition, these two factors were positively correlated in two samples of children ( $r = .52$  and  $.61$ ). These findings are consistent with the theory that hope consists of two separate, but related types of thought (i.e., agency and pathways).

### Validity

Convergent validity of the CHS was demonstrated in several ways. First, children's scores on the CHS correlated significantly and positively with knowledgeable observers' judgments of their hope levels—both at the beginning and end of a 1-month interval ( $r = .37$  and  $.38$ ). Second, scores on the CHS correlated positively with scores on various measures of children's self-perceived competence and control, including self-perceptions in areas of scholastics, social acceptance, athletics, physical appearance, and behavioral conduct. Also, higher scores on the CHS were related to children linking themselves to positive events and distancing themselves from negative ones. Finally, CHS scores correlated positively with an index of self-worth and negatively with scores on the Children's Depression Inventory (Kovacs, 1985; see Moon & Snyder, 2000, for a review).

Discriminant validity was demonstrated by showing that higher CHS scores were not related to greater intelligence. More specifically, CHS scores did not correlate with the Verbal score ( $r = .04$ ), the Performance score ( $r = .04$ ), or the Full-Scale score ( $r = .03$ ) of the WISC-R (Wechsler, 1974) or the WISC-III (Wechsler, 1991). In contrast, CHS scores demonstrated predictive validity by correlating positively with scores on the Iowa Test of Basic Skills (Hieronymous & Hoover, 1985), which is a measure of achievement rather than intelligence.

Finally, incremental validity was tested by examining the extent to which CHS scores predicted achievement beyond other available measures. Using scores on the Iowa Test of Basic Skills as the criterion variable, CHS scores predicted significant and unique variance above and beyond that accounted for by scores on the Global Self-Worth Scale of the Self Perception Profile for Children (Harter, 1985). Hence, although hope in children is positively related to

an elevated sense of self-worth, there is more to CHS scores than mere self-worth.

### Adult State Hope Scale

The State Hope Scale (SHS; Snyder et al., 1996) is a six-item self-report scale that was developed to assess goal-directed thinking in a given moment. Respondents are asked to rate items based on how they think about themselves right now using an eight-point Likert scale from 1 (definitely false) to 8 (definitely true). Three items tap agency and three items tap pathways, and total state hope scores can range from 6 to 48.

### Reliability

In a study of college students, Snyder et al. (1996) had participants complete the SHS every day for 29 consecutive days. The internal reliability for the total SHS was excellent, with Cronbach alphas ranging from  $.82$  to  $.95$ . For the Agency subscale, the Cronbach alphas ranged from  $.83$  to  $.95$ , and for the Pathways subscale the Cronbach alphas ranged from  $.74$  to  $.93$  (see Feldman & Snyder, 2000, for a complete review).

Because state constructs are by nature variable, the test-retest reliability of the SHS was expected to fluctuate considerably. Consistent with this hypothesis, Snyder et al. (1996) found that the correlations between any two days ranged from  $.48$  to  $.93$ . Hence, the SHS shows a relatively high level of lability, which is appropriate for a temporally specific measure.

### Factor Analysis

Snyder et al. (1996) had 240 students complete the eight-item SHS for 29 consecutive days. These responses were submitted to a principal-components factor analysis, with oblique rotations and the request of extracting two variables. One of the agency items loaded highest on agency for only half of the 29 days and was subsequently dropped. In order to maintain an equal number of items on each subscale, one of the pathways items was dropped as well. Another factor analysis was conducted using the remaining six items. This analysis yielded clear support for the two-factor model, with the three agency items loading only on Factor 1 and the three pathways items loading only on Factor 2.

The total variance accounted for by each of these two factors in the 29 factor analyses ranged from 72% to 87%.

### Validity

The convergent validity for the SHS was supported by the finding that its scores correlated positively with scores on the trait Hope Scale ( $r = .78$  and  $.79$ ). In addition, because it was hypothesized that higher levels of hope should lead to high levels of positive affect and low levels of negative affect, significant correlations were expected between the SHS and the PANAS. As expected, Snyder et al. (1996) found that scores on the SHS correlated significantly and positively with state positive affect scores and significantly and negatively with negative affect scores. Finally, because higher self-esteem is thought to be the result of successful goal pursuits, it was hypothesized that scores on the SHS would correlate positively with self-esteem. Consistent with this prediction, SHS scores correlated significantly and positively with scores on the State Self-Esteem Scale (Heatherton & Polivy, 1991).

The incremental validity of the SHS was tested by having participants list major events and thoughts that occurred on each of 27 consecutive days and rate them on a seven-point scale (1 = extremely negative to 7 = extremely positive), in addition to providing an overall rating for each day based on this same scale. Snyder et al. (1996) examined whether the relationships between SHS scores and these ratings of positive/negative events, positive/negative thoughts, and positive/negative days were attenuated when the variance accounted for by scores on the trait Hope Scale was partialled out. Even after accounting for trait hope, scores on the SHS still were significantly correlated with ratings of daily events, ratings of daily thoughts, and overall daily ratings. This suggests that scores on the SHS account for unique variance in important outcome measures beyond that accounted for by scores on the trait Hope Scale.

The validity of the SHS also was supported by two manipulation studies. In the first study, participants were randomly assigned to one of four groups: (1) a success group, (2) a failure group, (3) a neutral group, and (4) a control group. The first three groups were given a set of 20 anagrams to solve. The success group received 20 success-inducing/easy anagrams, the failure

group received 20 failure-inducing/difficult anagrams, and the neutral group received a combination of 10 success-inducing/easy anagrams and 10 failure-inducing/difficult anagrams. In addition, each of these three groups received performance feedback consistent with their group membership (i.e., success feedback, failure feedback, or neutral feedback). Participants in the control group were asked to sit quietly for 6 minutes. All participants completed the SHS, State Self-Esteem Scale, and the state PANAS before and after the anagram task or the control waiting period. As expected, analysis of covariance revealed the predicted Feedback Condition  $\times$  Time of Assessment interaction, with an increase in SHS scores for the success group, no change in SHS scores for the neutral or control groups, and a significant decrease in SHS scores for the failure group.

A second study achieved similar results to the first manipulation study by placing participants in three groups: (1) instructed to imagine past successes, (2) instructed to imagine past failures, or (3) instructed to sit quietly. The results were as hypothesized: there was a significant increase in the SHS scores for participants in the successful event recall group, no change in the SHS scores for participants in the control group, and a significant decrease in the SHS scores for participants in the unsuccessful event recall group. These results remained even after controlling for the common variances related to state self-esteem and state positive and negative affect. Hence, state hope appears to fluctuate in response to feedback about performance on goal-oriented tasks (e.g., solving anagrams), or when simply thinking about past successes or failures in goal pursuits (see Feldman & Snyder, 2000, for a review).

### Current Issues Associated With the Validity of Hope Measurement

Having reviewed the use of traditional approaches to validating three measures of hope, in this section we discuss the development of current issues concerning the validity of the Adult Hope Scale specifically. An initial confirmatory factor analysis (CFA), which supported previous theory and research regarding the scoring and use of the Adult Hope Scale, is described. In addition, the development and validation of a new Goal-Specific Hope Scale for adults is discussed.



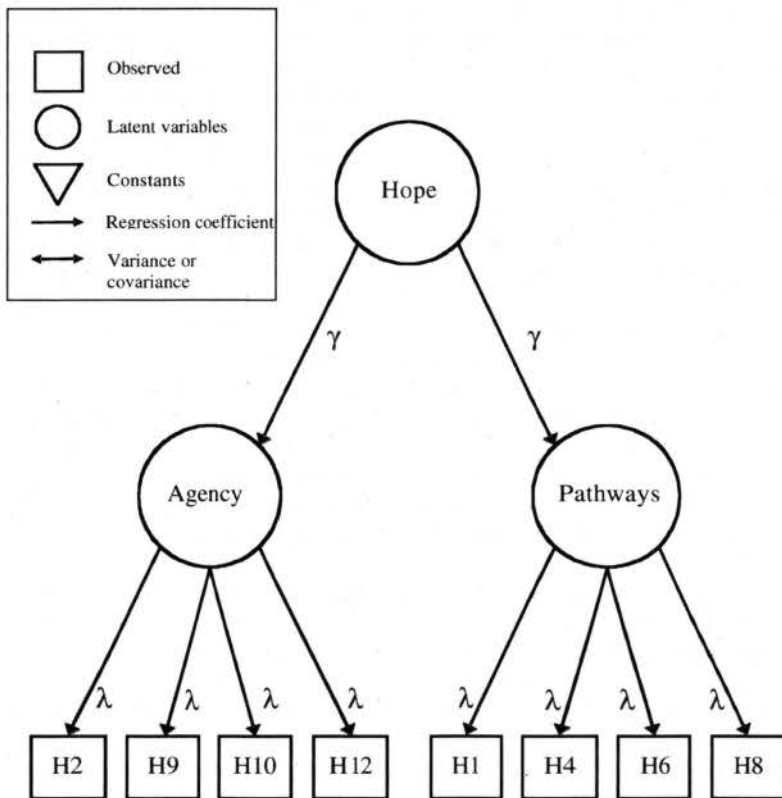


Figure 6.2 Conceptual path diagram of the higher-order factor model of Snyder's Hope Scale.  $\lambda$  = loading of scale item onto latent variable;  $\gamma$  = loading of latent variable onto a higher order latent variable.

### CFA Within a Latent Variable Modeling Framework

Although the techniques described in the preceding sections have represented the standards at those times for establishing an instrument's validity, newer and better techniques have been developed. For example, exploratory principal-components factor analysis is a common method for better understanding the relationships between items on an instrument and the underlying constructs these items supposedly measure. Nevertheless, the use of CFA, comparing the statistical fit of a hypothesized model to important alternative models, is now the preferred approach for testing the underlying structure of a scale (Bollen, 1989; Jöreskog & Sörbom, 1988).

To date, the Adult Hope Scale is the only measure of hope that has been analyzed using

this approach. The initial CFA was conducted by Babyak, Snyder, and Yoshinobu (1993). One of the goals of this CFA was to evaluate the tenability of the hypothesized two-factor (i.e., Agency and Pathways) model of the hope construct.<sup>2</sup> According to Snyder, Harris, et al. (1991), these separate-but-related factors operate interactively to provide an overall sense of hope. In factor analytic terms, this hypothesized model would consist of two first-order latent constructs (i.e., agency and pathways), which would be driven by a third, second-order construct (i.e., hope; see figure 6.2).

In addition to testing the hypothesized structure of the hope construct, CFA within a latent variable modeling framework can provide information about the scoring and implementation of the Hope Scale. There are several questions that can be addressed: Do the items on the Hope Scale separately indicate agency and pathways

thinking? Should any of the items be differentially weighted in terms of their contribution to estimating the underlying constructs? Does it make sense to derive a total hope score from these two subscales and, if so, should researchers make use of the subscale scores or the total scale score in terms of assessing the sequelae of hopeful thinking?

Babyak et al. (1993) collected data on the Hope Scale from four independent samples ( $N=955$ , 472, 630, and 696). All analyses of model fit were conducted on each sample separately. The first step in examining the structure of the underlying constructs as measured by the Hope Scale was to test the fit of a model in which all of the observed variables were unrelated (i.e., none of the individual scale items loaded on any factors). Although this "null" model did not fit the observed data well, it was important because it was used as the baseline for comparison of all other models. Consistent with CFA techniques, two competing models of hope (i.e., one-factor versus two-factor) were then tested across all four samples. By comparing the values of the various fit statistics, the authors determined that the two-factor model fit the observed data better than the one-factor model. In a subsequent analysis, Babyak et al. examined if a two-factor model (i.e., agency and pathways) with hope as a higher-order construct was tenable based on the observed data (see figure 6.2). This comparison showed that a model with no higher-order construct was a poorer fit of the observed data than the higher-order two-factor model.

These results support Snyder, Harris, et al.'s (1991) theory that two separate types of thought processes (i.e., agency and pathways) interact to produce hope. This finding is important because it suggests that although the Hope Scale measures both agency and pathways, the total hope score may be the more meaningful index of hopeful thinking. It is when agency and pathways work in tandem that hope is an effective predictor of measures of adjustment. In other words, the CFA conducted by Babyak et al. (1993) supports the practical use of the total hope score as a singular entity, because it demonstrates that this multidimensional construct has a single underlying latent variable (i.e., hope; see Carver, 1989). Based on this information, research using the Hope Scale would be most valid when examining the effects of the total hope score on psychological and physical well-being.

### The Goal-Specific Hope Scale

A new measure of hope has been developed in the Snyder laboratory to measure hope at a more specific level. According to Snyder's (1994a) theory, hope occurs at various levels of specificity. The most commonly researched level to date has been dispositional hope. Theoretically, however, hope also exists at the domain level. Stated in other words, an individual may have varying levels of hope in different goal-pursuit arenas of her life. She may have high hope for goals in her professional life, whereas at the same time she may have slightly lower hope for goals in her social life. Although an individual's hope in each life domain is based initially on her trait hope, the domain-specific levels begin to vary as goal success or failure feedback is accrued.

Snyder and colleagues hypothesize that an individual can have a hope level for each particular goal in his or her goal-pursuit repertoire. For example, although a student may have high hope for achieving an A in her biology class, she is less hopeful about her ability to achieve an A in her history class. In an effort to measure hope at this level of specificity, Snyder and colleagues have developed the Goal-Specific Hope Scale (GSHS; Feldman, Rand, Kahle, & Snyder, 2001). The GSHS is a six-item scale designed to measure an individual's hope level for a specific goal. It includes three agency items (e.g., "I energetically pursue this goal") and three pathways items (e.g., "I can think of many ways to achieve this goal"). Two separate scores are obtained for agency and pathways. A total hope score can be calculated by adding the agency and pathways items. Keeping the specified goal in mind, the respondent indicates his or her level of agreement with each item on an eight-point Likert scale ranging from 1 "definitely false" to 8 "definitely true." Scores on the GSHS for an individual's five most important goals have been shown to moderately correlate with her or his trait hope ( $r = .53$ ; Feldman et al., 2001). Cronbach alphas for this scale have ranged from .46 to .80, with more important goals showing greater internal consistency. Higher scores are indicative of higher hope for the specific goal.

Theoretically, hope for a specific goal initially is based on an individual's trait hope level. In other words, when a person begins a goal pursuit, his or her hope for that particular goal is interpolated from his or her overall level of

hope. As the process of pursuing the goal begins, the goal-specific hope level adjusts according to feedback regarding the relative success or failure experienced pertaining to that particular goal. Conceptually, therefore, at the beginning of a goal pursuit, trait and goal-specific hope will be redundant. As the process progresses, however, trait and goal-specific hope levels will bifurcate, depending on the relative success or failure experienced in the particular goal pursuit. Trait hope levels should remain relatively stable, whereas goal-specific hope should be much more labile and responsive to success or failure feedback.

In an effort to validate the GSHS, Rand and Snyder (2004) gathered data from undergraduate students taking a personality psychology course. The data were collected over the entire semester, measuring students' trait hope and goal-specific hope at four time points corresponding to the students receiving performance feedback about course exams. Students were asked to set a goal for a final course grade, and that goal was used to gather goal-specific hope information. The aim of this study was to examine how goal-specific hope is influenced over time by trait hope and performance feedback. The findings were consistent with the hypotheses regarding goal-specific hope, and the findings will be submitted for publication soon.

### Future Directions

Over the last 50 years, scholarly interest in hope has burgeoned. Social scientists, like Snyder and others, carefully have operationalized the hope construct by refining theories, conducting rigorous research, and validating brief scales. While theoretically grounded measures have brought increased clarity to our understanding of hope, enigmatic and philosophical musings on hope have led to some definitional confusion and ambiguity. Hence, we recommend that the incremental validity and value of old and new conceptualizations and measures of hope be carefully scrutinized. Specific to the measurement of hope as operationalized by Snyder, we believe that further examination of the cross-cultural applicability is warranted, as is additional validation research on domain-specific and goal-specific measures. Also, we recommend that psychometric researchers develop heteromethod measurement approaches, building on existing observation reports and narrative techniques, which combine multiple sources of hope data.

Regarding further development of domain-specific and goal-specific hope measures, preliminary scale development research must be bolstered by further psychometric study. The value of these measures will be determined by incremental validity studies that have yet to be conducted. In particular, the Domain-Specific Hope Scale is in the process of being refined, such that the revised version will include more arenas and will contain items tapping agency, pathways, and goals. Similarly, plans for revising the adult-trait Hope Scale, the SHS, and the CHS exist in order to include specific items about goals as well.

As mentioned previously, the GSHS (Feldman et al., 2001) is currently being validated. An important step in validating the GSHS as a measure of goal-specific hope is demonstrating that the underlying factor structure is consistent with hope theory (i.e., is a two-factor model consisting of agency and pathways). In addition, goal-specific hope initially should be redundant with trait hope, but subsequently respond to success or failure feedback regarding the particular goal pursuit in question. In other words, changes in goal-specific hope over time should be a function of both previous levels of goal-specific hope and previous levels of trait hope. In order to simultaneously demonstrate the factor structure of hope and its dynamic growth pattern over time, latent difference score (LDS) analysis will be utilized. The strategies to be used are based on those outlined by McArdle and Hamagami (2001), and the interested reader is referred to their work and related work for a more thorough explanation of the LDS method.

Although brief self-report measures have made the rigorous study of hope possible, multimethod assessment of hope could advance the science related to this strength. For example, we recommend that researchers refine existing observational measures (e.g., Snyder, Harris, et al., 1991; Snyder & McDermott, 1998) and combine them with self-report measures to obtain a multi-informant estimate of hope. It may even be possible to develop standardized tasks from which hope can be inferred through quantification of the goal, pathways, and agency in the behaviors. These aggregated hope scores may be less influenced by systematic bias than individual reports and they may shed more light on the domain specificity of hopeful pursuits.

Clinical use of an existing narrative measure of hope (Vance, 1996) suggests that narrative accounts of hopeful goal pursuits could provide

valuable, in-depth data on how pathways and agency thinking contribute to positive life outcomes. The development of reliable and valid content analysis procedures would mine the hopefulness embedded in personal statements and essays and help researchers to retroactively link personal hope with past performance and to predict future success based on current hope.

### Notes

1. Since 1993, the Hope Scale has used an eight-point Likert scale. Consequently, the highest possible score is now 64. This change was made in an effort to increase the variability of scores.

2. Recall that exploratory factor analyses supported the two-factor model across eight different samples (Snyder, Harris, et al., 1991).

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