

# 3 Who Is Responsible for Your Health? The Construct of Health Locus of Control

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In the summer of 1964, Norman Cousins, the former editor of the *Saturday Review*, was diagnosed as having ankylosing spondylitis, a collagen disease leading to disintegration of the connective tissue in the spine. Upon being told by his doctor that a leading specialist gave him "one chance in five hundred" of recovering, Cousins (1979) decided it was about time he took an active interest in his own case: "All this gave me a great deal to think about. Up to that time I had been more or less disposed to let the doctors worry about my condition. But now I felt a compulsion to get into the act. It seemed clear to me that if I was to be that one in five hundred I had better be something more than a passive observer [p. 35]." Cousins (1979) details how he developed his own treatment regimen, formed a partnership with his physician, and ultimately was freed from this crippling, degenerative disease.

The issue of who is responsible for an individual's degree of health or illness is one for which there are no definitive answers but plenty of opinions. Many patients and most physicians behave as if doctors are primarily responsible; when a health problem arises it is the doctor's job to set things right. Other people strongly believe that the ultimate responsibility for one's health either lies squarely with the individual or ought to lie there. As Ginzberg (1977) writes: "No improvement in the health care system will be efficacious unless the citizen assumes responsibility for his own well-being [p. 239]." This exemplifies the viewpoint that if we as a society are to do anything about the rising cost of health

care in the United States today, people must begin to take charge of their own health and not leave such an important matter up to the so-called experts. Still others believe that nobody is ultimately responsible for health or illness; if you are healthy, you are lucky or have been rewarded by God; if you are sick, you are ill-fated or have been punished by God.

The example of Cousins' actions in the face of ankylosing spondylitis shows that responsibility for recovering from an illness need not rest solely on the patient or on the doctor. A partnership can be struck between doctor and patient in which responsibility is jointly held and shared. Cousins did not merely give up and accept his fate, nor did he dismiss his doctor and carry on exclusively on his own. Instead, he gathered as much information as he could, formulated an unorthodox treatment plan, consulted with his physician, garnered the support of family and friends, and proceeded to take charge of his own life.

### THE THEORETICAL FRAMEWORK

A social psychologist familiar with Cousins' story might speculate that Cousins' behavior exemplifies a person with an "internal locus of control" belief orientation. Social learning theory (Rotter, 1975) posits that: "the potential for a behavior to occur in any specific psychological situation is a function of the expectancy that the behavior will lead to a particular reinforcement in that situation and the value of that reinforcement [p. 57]." Cousins, who highly valued being a healthy, vigorous, alive human being, confronted overwhelming odds and professional pessimism with direct health-enhancing action because he truly believed that his actions would make a difference. The generalized expectancy that one's outcomes (or reinforcements) are directly the result of one's behavior or relatively enduring characteristics is termed an *internal* locus of control orientation (Rotter, 1966). This is opposed to believing that one's outcomes (reinforcements) are under the control of powerful other people or are randomly determined by forces such as fate, luck, or chance—beliefs that are indicative of an *external* locus of control orientation.

According to Rotter's theory, peoples' behavior can be predicted from a knowledge of how they view the situation, their expectancies about their behavior, and how they value the outcomes that might occur as a result of their behavior in that situation. According to Strickland (1978): "If a situation is novel or ambiguous, then an individual will depend on generalized expectancies that have served him/her in the past. More specific expectancies are used when the aspects of the situation are straightforward or routine [p. 1193]." Locus of control beliefs have been treated as both generalized and situation-specific expectancies; likewise, individual differences in these beliefs have been considered as either relatively stable personality factors or as transitory social cognitions influenced by a host of situational cues and changes.

Much research has tested various aspects of Rotter's social learning theory (see Rotter, Chance, & Phares, 1972), but the construct that has received the greatest amount of attention has been locus of control. There have been well over 1000 published papers dealing with individual differences in locus of control beliefs, not to mention the myriad of unpublished theses, dissertations, and studies that have investigated this construct (Rotter, 1979). Although there has been quite a diversity of findings and conclusions, it has generally been the case that—compared to those persons espousing external locus of control expectancies—internals are more potent, competent, effective persons, likely to take responsibility for their actions and to take steps to change aversive life situations.<sup>1</sup>

An increasing number of health researchers have measured locus of control beliefs and have attempted to relate these expectancies to a host of health-related behaviors and statuses.<sup>2</sup> Some of these investigations have utilized measures of locus of control that include no mention of health or illness (e.g., Rotter's I-E Scale, Rotter, 1966; Levenson's I, P, & C Scales, Levenson, 1973, 1981); more recently, health-specific measures of this construct have been developed and have been adopted by investigators in the health fields (Wallston & Wallston, 1981). The linkage between assuming responsibility for one's own health and endorsing internal locus of control beliefs has a certain compelling logic to it. Also, Strickland (1978) reports that early "results of research conducted with various [I-E] instruments suggest that beliefs about internal versus external control are related in significant and even dramatic ways to health-related behaviors [p. 1192]." Thus, from both a theoretical and empirical perspective, the exploration of locus of control and health-related phenomena seems warranted.

This chapter summarizes current knowledge regarding the relationship between the health locus of control beliefs of adults<sup>3</sup> and: (1) measurements of other psychological constructs; (2) health information and preventive measures; (3) reactions to physical conditions; (4) responses to health-related interventions; and (5) interactions with health care settings.<sup>4</sup> It begins with a brief description

<sup>1</sup>For reviews of this research, see Joe (1971)-Lefcourt (1966, 1976, 1981) Phares (1973, 1976), Rotter (1966, 1975).

<sup>2</sup>See Strickland (1978) and Wallston and Wallston (1978) for reviews of some of the earlier work in this field.

<sup>3</sup>A health locus of control scale specifically developed for use with school-age children has been published by Parcel and Meyers (1978). The Children's Health Locus of Control Scale has been used in a number of studies, but work with this scale or other studies involving children is not reviewed in this chapter.

<sup>4</sup>The organization of this chapter, partially modeled after Strickland (1978) is radically different from another recent chapter written by the authors (Wallston & Wallston, in press). The present chapter includes some studies completed after the other chapter was written and less detail, in general, about specific studies.

of the health related locus of control scales, followed by a suggested typology based on multidimensional patterns of belief.

### THE HEALTH LOCUS OF CONTROL SCALES

The degree to which individuals believe that their health is controlled by internal versus external factors (i.e., whether the locus of control is or is not within the individual) is typically assessed by the extent to which individuals agree or disagree with a series of belief statements such as: "I am directly responsible for my health"; "Other people play a big part in whether I stay healthy or become sick"; "When I stay healthy I'm just lucky," presented via questionnaire or verbal interview. A belief scale score is the sum of responses to a number of such statements. The more the responses on a given scale intercorrelate with one another, the more internally consistent the scale is, and thus, the greater is the likelihood that the scale is reliably measuring the underlying belief system (Sellitz, Wrightsman, & Cook, 1976).

The first published version of a locus of control measure specific to the domain of physical health/illness was the work of Kirscht and his colleagues (Dabbs & Kirscht, 1971; Kirscht, 1972). In their early attempts, there was some confounding of expectancy and motivational statements. (An example of the latter was, "I really work at it to stay in good health.") Only a few items assessing expectancies tapped the construct of health locus of control. The measure developed by Kirscht has had minimal impact on the field and is not dealt with further in this chapter.

The first health-related locus of control measure developed by the authors, the Health Locus of Control (HLC) Scale (Wallston, Wallston, Kaplan, & Maides, 1976), consisted of 11 items with a 6-point, Likert response format (i.e., *strongly agree, moderately agree, slightly agree, slightly disagree, etc.*). High scores on the HLC Scale indicate agreement with the six externally worded statements and disagreement with the five internally worded items. Individuals with scores above the median are sometimes labeled "health-externals"; those with scores below the median are "health-internals."

Two years later, multidimensional versions of the HLC scale were published (Wallston, Wallston, & DeVellis, 1978). Modeled after Levenson's I, P, & C Scales (Levenson, 1973, 1981), the Multidimensional Health Locus of Control (MHLC) Scales consist of three 6-item scales, again using a 6-point, Likert response format. The major contribution of Levenson's multidimensional approach was in splitting externality into two distinct components. The PHLC Scale assesses beliefs that one's health is determined by powerful other people (e.g., doctors, nurses, family, or friends), and the CHLC Scale measures the extent to which one believes that health/illness is a matter of fate, luck, or chance. The two external scales—PHLC and CHLC—are treated as separate

measures of health locus of control beliefs; they have not been combined with one another to form an overall measure of health externality. The IHLC Scale measures health internality, or the extent to which individuals believe that internal factors are responsible for their health/illness. Low scores on the IHLC Scale do not mean that individuals believe that external factors determine their health; all that can be said about low IHLC scores is that they are not indicative of internal beliefs. The three dimensions tapped by the MHLC Scales are more or less statistically independent (i.e., scores on the three scales do not substantially intercorrelate).

The MHLC Scales are superior to the unidimensional HLC Scale in at least two ways. Psychometrically, the individual MHLC Scales are more internally consistent (thus, more reliable) than the HLC Scale, which is comprised of both internally and externally worded items. Conceptually, the HLC Scale only contains a single powerful-others item ("I can only do what my doctor tells me to do."), whereas the MHLC has an entire scale (PHLC) devoted to this important construct. As the remainder of this chapter illustrates, some of the most interesting findings regarding locus of control and health-related phenomena come from the PHLC Scale.<sup>5</sup>

### A HEALTH LOCUS OF CONTROL TYPOLOGY

Conceptualizing locus of control as a multidimensional rather than a unidimensional construct makes it much more difficult to think and talk about types of individuals or situations. With two external dimensions—chance and powerful others—what does it mean to label a person as an *external* or to describe a situation as one that induces externality? Also, if the separate dimensions are statistically independent of one another, it is quite possible that a given person can simultaneously score high on two or even three dimensions. Do such patterns of scores make sense conceptually, and is it worthwhile to make separate predictions for persons exhibiting such patterns? Are there types of situations that are more or less favorable to persons exhibiting different patterns of health locus of control beliefs? In this section, we propose a typology of persons based upon possible patterns of scores on the MHLC Scales. This typology is highly speculative because no research has yet been done confirming its existence or demonstrating its validity. In proposing such a typology, there is no intention on our part to suggest that these are personality types (i.e., relatively enduring characteristics of individuals); rather, we take the position that at any one point in time a person's belief pattern may be heuristically described using this typology.

<sup>5</sup>Information relevant to the development of the health locus of control scales and the actual scale items can be found in Wallston, Wallston, Kaplan, and Maides (1976, the HLC Scale) and Wallston, Wallston, and DeVellis (1978, the MHLC Scales). Information about the scales' reliability and validity and normative data can be found in Wallston and Wallston (in press). 172/

Figure 3.1 presents eight different patterns of health locus of control expectancies based on whether an individual is relatively high or low on each of the three dimensions: IHLC, PHLC, and CHLC. The first three patterns are "pure" types; each consists of an endorsement of only one of the three dimensions. The second three types consist of high scores on two of the dimensions, low scores on the other. Type IV might be termed a "double health-external" because both

Type I "Pure" Internal IHLC PHLC CHLC		Type II "Pure" Powerful Others External IHLC PHLC CHLC	
High	X		
Low		X	X

  

Type III "Pure" Chance External IHLC PHLC CHLC		Type IV Double External IHLC PHLC CHLC	
High			X
Low	X	X	

  

Type V Believer in Control IHLC PHLC CHLC		Type VI IHLC PHLC CHLC	
High	X	X	
Low			X

  

Type VII "Yea-Sayer" IHLC PHLC CHLC		Type VIII "Nay-Sayer" IHLC PHLC CHLC	
High	X	X	X
Low			

FIG. 3.1. A multidimensional health locus of control typology.

external belief dimensions are endorsed, but the individual does not agree with the internal statements. Type V is possibly the most adaptive of all. By scoring high on both IHLC and PHLC and low on CHLC, individuals express the belief that their health is controllable, either by themselves or other people, and not a matter of fate, luck, or chance. This constellation of beliefs could be particularly beneficial to a person who has to cope with a chronic illness (e.g., diabetes or hypertension) where much of the responsibility for successfully treating the condition lies with the patient carrying out the treatment regimen prescribed by the physician. In an earlier paper (Wallston & Wallston, 1973), we referred to such an individual as a "responsible internal." Norman Cousins is probably such a person.

Type VI—high on IHLC and CHLC, low on PHLC—is probably nonexistent or extremely rare. Inasmuch as the IHLC and CHLC Scales are only slightly negatively correlated, this pattern is mathematically possible but conceptually difficult to understand. One possible explanation is that individuals have learned that there are certain aspects about their health that they can control and other aspects that are totally unpredictable. In responding to the MHLC belief statements, the Type VI person is merely expressing this dualism.

The last two patterns (i.e., all three dimensions simultaneously high or low) can arise because they validly reflect HLC beliefs or because of response biases (see Couch & Keniston, 1960). "Yea-sayers"—persons who indiscriminately agree with a statement regardless of content—would be Type VII; "nay-sayers" would be Type VIII. If these patterns are not simply the result of response biases, then the same explanation proffered earlier for Type VI would hold for Type VII; individuals have also learned that certain aspects of their health are controlled by powerful others. Such an individual might even be better off than a Type V because the endorsement of CHLC beliefs might provide a convenient rationalization for those instances where one's best shot and the best efforts of others have all come to naught. Being a Type VIII might be indicative of a very selective "nay-sayer"; such persons might just be expressing the opinion that the sample of items contained in the MHLC scales does not reflect their own particular health locus of control expectancies. For example, someone who strongly believes that God controls health and illness might be Type VIII. No claim has been made that all possible HLC beliefs are tapped by the three MHLC dimensions (Wallston & Wallston, *in press*).

### MEASUREMENT OF OTHER PSYCHOLOGICAL CONSTRUCTS

Aside from correlating health locus of control beliefs with other measures of locus of control expectancies, several studies have related HLC or MHLC scores to other constructs, some of which were themselves health-specific measures. Dishman, Ickes, and Morgan (1980) found a modest but significant relationship

between HLC scores and their own measure of self-motivation. Those individuals scoring in the internal direction on the HLC expressed a higher degree of self-motivation. This correlation would probably be stronger with the individual MHLC scales, but they have not been correlated to date. Those scoring high on the PHLC might be high or low on self-motivation depending on what their IHLC and CHLC beliefs are.

Strickland (1978) suggested a relationship between Type A behavior characteristics (see Carver & Humphries, Chapter 2, this volume) and holding internal locus of control beliefs. Macri (1980) correlated the MHLC scales with the Type A subscale of the Jenkins Activity Survey (JAS) (Jenkins, Zyzanski, & Rosenman, 1979) but found no significant relationships. Her sample, consisting of men hospitalized for chest pain, was quite small ( $n = 14$ ), so it is still possible that persons exhibiting Type A behavior might differ in their health locus of control beliefs from those who are not Type A.

Tolor (1978), studying a diverse group of graduate students and community volunteers, found no significant relationships between HLC scores and death anxiety or adjustment. Brown, Perman, and Dobbs (1981) studied a sample of geriatric patients all of whom recently had pacemakers implanted and found that HLC internality was correlated significantly with life satisfaction and the will-to-live. Hatz (1978) found high positive correlations between IHLC scores and past and expected future life satisfaction in a sample of chronic hemodialysis patients.

DeVellis, DeVellis, Wallston, and Wallston (1980a, 1980b) administered a depression scale (CES-D) (Radloff, 1975) along with the MHLC Scale in a survey of persons with epilepsy. CES-D scores were significantly correlated with CHLC and, to a lesser extent, PHLC beliefs. Similarly, in a sample of cancer patients receiving chemotherapy on an outpatient basis at Vanderbilt Hospital, we are also finding CHLC to be highly correlated with depression as assessed by the Zung Depression Scale (Zung, 1965). Nice (1980a) found that CHLC was significantly correlated with situational depressive affect (Ryman, Biersner, & LaRocco, 1974) among navy wives whose husbands were at sea, but correlations with IHLC and PHLC were not significant. Nice (1980a) reports: "This differential relationship between the chance and powerful other subscales of the MHLC on the criterion measure of depressive affect may provide a valuable extension of the work relating both learned helplessness and external locus of control to depression [p. 11]."

Krantz, Baum, and Wideman (1980) reported only modest correlations in one sample and no correlation in a second sample between HLC scores and the two subscales of the Krantz Health Opinion Survey (KHOS). One subscale (I) purportedly measures preferences for health-related information; the other (B) assesses desire for behavioral involvement (i.e., self-care and active participation) in medical care. In a recent study (Smith, Wallston, & Wallston 1981), we administered the KHOS along with the MHLC Scales to a sample of community volunteers and found highly significant interrelationships among the two KHOS

subscales and the three MHLC Scales, with Krantz's B scale and the PHLC strongly negatively correlated. This suggests that these two scales are essentially tapping the same construct. The modest correlations found by Krantz et al. (1980) between the KHOS and HLC Scale were due to the fact that the HLC Scale does not measure PHLC beliefs. Further evidence for this assertion comes from Dunn (1980) who found a significant negative correlation between PHLC and attitude toward self-care (see Linn & Lewis, 1979), a construct similar to Krantz's measure of behavioral involvement.

In the Smith et al. (1981) study referred to earlier, we found IHLC scores to be uncorrelated with a general (nonhealth-specific) measure of desire for control (Burger & Cooper, 1979). Surprisingly, IHLC was also uncorrelated with a measure of expectancy for control in a specific health-related situation (as a patient in the hospital dying of a terminal illness), but it was positively correlated with desire for control in that same setting. CHLC and PHLC scores were also independent of the situation-specific expectancy measure, but both were negatively correlated with the measures of general and situation-specific desire for control. It is unclear why the health locus of control scales, which are measures of expectancies of control, demonstrate stronger correlations with measures of desire for control than with expectations for control in a particular health care setting; this latter measure, however, deals with control over the health care delivery process, whereas the MHLC Scales assess beliefs about control over outcomes (i.e., health and illness).

We are not aware of any studies correlating PHLC scores to measures of authoritarianism [e.g., Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950] or interpersonal trust (e.g., Rotter, 1967), two psychological constructs that in theory ought to correlate with beliefs that one's health is controlled by powerful other persons. As doctors and nurses are often perceived by patients as authority figures, and as they usually act accordingly, it is logical to assume that people endorsing PHLC beliefs would also espouse authoritarian attitudes.

Individuals high in interpersonal trust, especially trust of health professionals, who also believed that powerful others controlled their health would not experience much dissonance (see Festinger, 1957). However, a person with high PHLC beliefs who did not trust other people would indeed be in a conflict state. Such an individual might be what Hochreich and others have termed a "defensive external" (see Phares, 1979), a person who answers a locus of control scale in an external direction but behaves like someone who actually holds internal beliefs. Hochreich (1974) has operationalized the defensive external as a person who scores high on the I-E Scale (Rotter, 1966) and low on the Interpersonal Trust Scale (Rotter, 1971). To date there have been no attempts to identify those persons who are defensive externals in regard to their health locus of control beliefs. If there are persons who distort their health locus of control beliefs, presumably to avoid blame if their health actions do not bring about desired results, this could explain why certain studies have not confirmed the hypoth-

esized relationships between health locus of control beliefs and health behaviors.

Most of the findings reported in this section attest to the construct validity of the HLC scales. The most consistent relationship is between depressive affect and the belief that one's health is unpredictable (i.e., CHLC).

### HEALTH INFORMATION AND PREVENTIVE MEASURES

One means by which individuals assume responsibility for their own health is to behave in a health-enhancing manner, thus maximizing the possibility of maintaining a satisfactory level of physical and mental well-being and helping to avoid illness or accidents. Some widely accepted "healthy" behaviors are: getting sufficient rest and exercise, eating and drinking in moderation, avoiding smoking (and others who are smoking), brushing and flossing the teeth regularly, wearing seat belts, and—although a matter of continuing controversy—receiving periodic physical examinations. Another aspect of behaving responsibly is to be informed and knowledgeable about all aspects of health and illness, including the health care system.

Strickland (1978) summarized the research relating measures of locus of control to health knowledge and precautionary measures by saying:

With some exceptions, the bulk of the reported research on I-E and precautionary health practices lends credence to the expected theoretical assumptions that individuals who hold internal as opposed to external expectancies are more likely to assume responsibility for their health. Internals appear to attempt to maintain their physical well-being and guard against accidents and disease to a greater extent than individuals who hold external expectancies [p. 1194].

At the time Strickland did her review, there were only two published studies using the health locus of control scale (Wallston, Maides, & Wallston, 1976; Wallston, Wallston, Kaplan, & Maides, 1976). How does Strickland's conclusion stand up now, after a number of additional studies have been conducted using the health-specific locus of control measures?

#### Health Information Seeking

The initial studies investigating health locus of control beliefs and health-related information seeking (Wallston, Maides, & Wallston, 1976) established that persons who highly valued health<sup>o</sup> and who were classified as "internals" using the

<sup>o</sup>In these studies, high health value was operationalized as rank ordering health—among 10 terminal values—above the group's median ranking of health.

HLC Scale indicated a willingness to read more hypertension-related information than high health value HLC externals. The subjects for these studies were college students who were asked to pretend (i.e., to role play) that they had just been diagnosed as being hypertensive. DeVito, Reznikoff, and Bogdanowicz (1979) partially replicated this finding, but their attempt to extend the results to an actual measure of information seeking was not successful, nor was our attempt to generalize the finding to information seeking about obesity (see Wallston & Wallston, *in press*).

Three studies have been done using the foregoing paradigm with the MHLC scales, and results are mixed (see Wallston & Wallston, 1981). One study of hypertension information seeking (again using college students who played the role of a newly diagnosed patient) failed to replicate the earlier findings. A second study, however, provided significant results. This latter study also included an actual information-seeking measure—whether or not the subject asked a question about the disease when given the opportunity to do so. Splitting subjects at the median on their MHLC scores and looking only at those who highly valued health, high IHLC, low CHLC, and high PHLC subjects asked more questions about hypertension than did their counterparts (i.e., low IHLC, high CHLC, low PHLC subjects). The measure of number of hypertension-related pamphlets the subjects said they would read was greater for high PHLC and low CHLC high health value subjects than their counterparts. High IHLC subjects did not choose more pamphlets than did low IHLC subjects. These MHLC results suggest that the Wallston, Maides, and Wallston (1976) findings with the HLC scale were due to the fact that those classified as HLC internals were actually low "chance externals" and not especially high in the belief that their own behavior influenced their health.

A third study attempting to generalize these findings to a different medical condition (herpes simplex virus) did not show the expected pattern of findings. Thus, for college students role playing hypertensive patients and indicating that they valued health highly, health locus of control beliefs are related to hypertension information seeking. But it is not necessarily the health internality dimension that is responsible for these findings. Significantly, in the one MHLC study that produced results (described earlier), high PHLC scorers sought more information than low PHLC scorers. This provides some further justification for separating the two external MHLC dimensions. Why these studies only "work" for hypertension and not for other medical conditions remains a puzzle.

There is some evidence that the hypertension information-seeking results might generalize beyond college students. Toner and Manuck (1979) had persons participating in a public health screening fill out the HLC Scale. After their blood pressure was measured, the subjects were allowed to choose from among 23 hypertension-related informational pamphlets. Within the older half of their subjects (mean age = 57.3 years), HLC internals chose significantly more pamphlets than HLC externals; no such difference was found for the younger half of

the sample (mean age = 25.2). This latter null finding could, perhaps, be explained by the fact that Toner and Manuck did not assess health value. Inasmuch as health value is highly dependent on age—the older the person, the higher the value placed on health—Toner and Manuck's older sample probably contained mostly health-oriented persons, whereas the younger sample was mixed, thus washing out the HLC results.

In another study, Sproles (1977) administered the HLC Scale to renal dialysis patients and found that HLC internals knew more about their condition, desired to know even more, and were more willing to attend patient education classes than were HLC externals. We can only speculate about what results Sproles would have obtained if she had used the MHLC Scales, but it would be consistent with other findings to expect that Sproles' results would have been different for those espousing PHLC beliefs than for those high on CHLC.

Krantz et al. (1980) reported a nonsignificant correlation between college students' HLC scores and the number of questions asked of a clinic nurse during a visit for minor complaints. A three-way split of HLC scores appeared to suggest that those persons with moderate HLC beliefs asked the fewest number of questions. In a study of persons visiting a dental hygienist for regular check-ups, we failed to find any relationship between MHLC scores and the hygienist's ratings of whether the person was an above average, below average, or average asker of questions compared to the typical patient in that situation. This result could have been due to the lack of validity of the hygienist's ratings, just as Krantz et al.'s (1980) findings may have been due to some invalidity in the clinic nurse's behavioral reports. Nevertheless, neither of those two studies provide much support for the relationship of health locus of control beliefs to the direct asking of questions to health professionals. Although Roter (1977) was able to train an experimental group to be more internal and ask more questions during physician visits than a control group, HLC scores did not correlate with questions asked. The power of her intervention may have wiped out the effect of individual differences, or the intervention may have been differentially effective, depending on initial health locus of control beliefs, but these analyses were not conducted. Further discussion of this study is provided in the section on "Responses to Health Care Interventions."

In a nationwide survey of persons with epilepsy (DeVellis et al., 1980b), we included a measure of epilepsy-relevant information seeking. The best single predictor of the subjects' expressed willingness to expose themselves to information about epilepsy was their PHLC scores, with high PHLC beliefs correlating significantly with high information seeking. Thus, here is a second piece of evidence that one does not have to hold exclusively internal health locus of control beliefs in order to seek health-relevant information. No studies, however, have shown that persons who are high in CHLC beliefs engage in health-related information seeking. One study, in fact, has found CHLC scores to be negatively correlated to medical self-care knowledge (Dunn, 1980). Therefore, a belief that

one's health is controllable either by oneself or other persons (Types I, II, or V) may lead to information seeking, but a belief that one's health is unpredictable (i.e., Type III—high CHLC beliefs) does not dispose individuals to learn more about their health.

### Preventive Health Behaviors

With the exception of three studies on smoking reduction, research correlating health locus of control beliefs with measures of behaviors carried out to maintain or enhance health has produced few significant relationships. Six separate surveys, each looking at a different sample of individuals—clerical workers (Baughman, 1978), health maintenance organization clients (Lauver, 1978), pregnant women (Lowenstein, 1979), health-fair attendees (Wallston & Wallston, 1978), and two nationwide surveys (Stuart, 1979)—have failed to find meaningful correlations between health locus of control beliefs and a wide range of health behaviors. In contrast to these mostly null results, Bronson (personal communication, 1981) studied adults undergoing comprehensive health examinations and found that those scoring above the mean on the IHLC Scale scored significantly higher on measures of health behavior, knowledge about health problems, and health plans than those scoring below the mean on IHLC. In a study of Welsh wives of skilled manual workers, Pill (1981) reported a negative relationship between PHLC scores and an interview-derived measure of salience of life style as a contributor to health. In other words, those Welsh women who rejected the notion that powerful others controlled their health were more likely to spontaneously mention life-style factors (e.g., diet, exercise) as causing or preventing illness. In those studies that have looked at specific (as opposed to broadly based) health behaviors, the findings have also been mixed. For example, Olbrisch (1975) reported no differences between HLC internal and HLC external gonorrhea patients in plans to take future precautions against the disease, and McCusker and Morrow (1979) found no relationship between HLC scores and preventive cancer behaviors.

Although not quite statistically significant, Fischberg (1979) found women who value their health highly and who were also high on IHLC were slightly more likely to practice breast self-examination than those low on IHLC. Grady (personal communication, 1981) found that scores on a shortened version of the MHLC Scales contributed 4% of the variance in the number of breast self-examination records returned. This was due predominantly to high CHLC women and high PHLC women returning less records (i.e., conducting fewer examinations) than low CHLC or low PHLC women.

Dishman et al. (1980) found that persons who stayed with a physical activity program had more internal HLC scores than persons who dropped out of the program. Kaplan (1974) however, did not find similar differences in dropouts from a weight management program. Saltzer (1979) also could not distinguish

completers of a weight management program from noncompleters using the MHLC scores, but she did find that the completers were more internal on a weight-specific locus of control scale of her own design.

Grady (personal communication, 1981) found that persons who agreed to participate in her breast self-examination study had higher PHLC and IHLC scores than those who refused to participate but who were interviewed over the telephone. Perhaps holding beliefs that health can be controlled (Type V in our suggested typology) predisposes a person to cooperate with health education programs.

Carnahan (1979) failed to predict college students' scores on a dental plaque index from either their MHLC scores or a multidimensional dental health locus of control scale that she constructed. We were equally unsuccessful in correlating MHLC scores to self-reports of brushing and flossing or hygienists' ratings of teeth and gums in a study of adult patients receiving regular prophylactic care.

Three studies of mothers' preventive health behavior vis-à-vis their children failed to find any relationship with MHLC beliefs. The behaviors examined were immunization levels (Berger, 1980), vitamin supplementation (Gossler, 1980), and car seat usage (Guske, 1980).

In the area of smoking reduction, Kaplan and Cowles (1978) found that high health value, HLC internals reduced their cigarette consumption and maintained the reduction to a greater extent than other subjects. Wildman, Rosenbaum, Framer, Keane, and Johnson (1979) reported similar findings, although they did not measure health value. HLC internals cut back more during treatment and maintained more of the reduction than did HLC externals. Shipley (1980), using the MHLC scales, found results similar to those of Wildman et al. but only for the IHLC and CHLC scales; scores on the PHLC were unrelated to the ability to stop smoking.

Given Strickland's (1978) summary of the early research in this area, it is indeed disappointing that health locus of control beliefs are not more strongly related to measures of preventive health behaviors because these behaviors are what most people think about when they think of assuming responsibility for their health. One explanation for this almost total lack of expected findings is that preventive health behaviors are multidetermined, and it is simplistic to believe that any single construct such as locus of control will predict much of the variance in individual health behaviors (Rotter, 1975; Wallston & Wallston, 1981). This may even be the case for those studies that have included a measure of health value and have attempted to predict health behavior from the interaction of health locus of control beliefs and the importance placed on health as an outcome. Although in theory this bivariate predictor approach appears superior, it is undoubtedly the case that still other variables, such as specific beliefs about the behavior(s) in question, carry most of the weight in predicting behavior. Moreover, it has been argued that attitude-behavior prediction can be improved

by broadening the scope of behavioral measures and multiple observations (Ajzen & Fishbein, 1977; Epstein, 1979; Weigel & Newman, 1976). Although health behaviors are frequently uncorrelated (e.g., Steele & McBroom, 1972), indices summing over a variety of health behaviors would take into account different behavioral expressions of the same attitude or expectancy. Thus, locus of control beliefs may make better predictions of such behavioral indices than any specific health behavior.

It is also quite likely that many people believe one thing but behave quite differently when it comes to protecting their health. Nurses, for example, have one of the highest smoking rates of any profession (cf. National Clearinghouse for Smoking & Health, 1977), yet they are fully cognizant of the health risks involved and would strongly oppose the behavior in their patients. Engaging in preventive health behavior is often quite costly either because the behavior itself involves some effort (e.g., flossing one's teeth, exercising regularly, practicing birth control) or because something very reinforcing has to be reduced or eliminated altogether (e.g., desserts, cigarettes). Even people who highly value their health and who believe their behavior influences their health will, on occasion, behave contradictorily to their beliefs and values. At those moments, there are other outcomes the individual values even more than good health.

Inasmuch as Strickland (1978) reviewed mostly studies using general rather than health-specific measures of locus of control and reached such optimistic conclusions about the relationship between locus of control beliefs and preventive health behaviors, it is puzzling why the studies cited in this chapter, which utilized the health locus of control scales, for the most part failed to demonstrate significant relationships. It would be wrong to infer that general locus of control beliefs are related to engaging in preventive health behaviors, whereas health-specific locus of control beliefs are not; no study has yet shown this to be the case. Rather, as with many other areas in social psychology, as more studies are done in a particular "promising" area using refined methodologies, we learn that the world is not as simple as we would have it be.

### REACTIONS TO PHYSICAL CONDITIONS

Because expectancies with respect to locus of control are learned, health and illness status as well as experiences with the health care system should influence these beliefs. Moreover, health locus of control beliefs (in conjunction with health value and aspects of the situation) should influence one's responses to symptoms and to chronic illness. In this section, literature is reviewed on the health locus of control beliefs of persons with a variety of physical conditions, the relation between such beliefs and responses to symptoms, and the adherence with medical regimens of persons whose beliefs vary.

## Responses to Disability

Strickland (1978) noted:

Any impending or disabling disorder, whether chronic or temporary, has a varying degree of influence on the responses of the persons faced with the handicap. The severity of the disorder, the time of the onset, the current status of the patient, the support that he/she receives, and so on, all interact with what is probably a complex set of cognitions about the disorder. When an individual is more helpless than he/she once was, or is handicapped in relation to others, beliefs about locus of control would be expected to be, and apparently are, related to reactions to the disorder (p. 1198).

Reviewing the literature on generalized locus of control beliefs conducted primarily with chronically handicapped children (e.g., Egglund, 1973; Goldstein, 1976), Strickland concluded that such individuals tend to be more external than their healthy counterparts. Studies of adult health locus of control beliefs appear to confirm these early findings (see Wallston & Wallston, *in press*).

In particular, across a variety of chronic patient samples, beliefs in chance and in powerful others as the locus of control for one's health are relatively high, whereas beliefs in internal health locus of control are similar to those of healthy adults. Such findings are relatively consistent across diverse conditions, including cancer, diabetes, epilepsy, and respiratory disease (Wallston & Wallston, 1981). However, as these data are not longitudinal, one can only hypothesize that such beliefs arise out of experience with illness. Persons with a history of illness (and therefore in frequent interaction with the health care system) may develop complex and differentiated beliefs in relation to the locus of causality of health and illness. While maintaining beliefs in IHLC, chronically ill persons may recognize that they did not bring about their illness, and thus an increased belief in CHLC may develop. Moreover, persons with chronic conditions are more reliant on family members or health professionals for care, and thus high PHLC beliefs are likely to develop. This is a case where Type VII (yea-sayers) may reflect a reasonable belief structure rather than response scale bias.

Some additional evidence that health locus of control beliefs develop in relation to illness experiences comes from our national survey of persons with epilepsy (DeVellis et al., 1980b). A modest but significant proportion of the variance in beliefs in chance, internal, and powerful others health locus of control was predicted from seizure history variables (e.g., having an aura, whether a seizure can be avoided, seizure severity, age of first seizure, and number of years with seizures). Interestingly, the best prediction was to PHLC beliefs. As these data are correlational and also cross-sectional rather than longitudinal, one could argue that reports of history were influenced by respondents' beliefs. However, the concrete nature of some of the history variables (e.g.,

number of years with seizures) suggests that history with epilepsy has influenced these beliefs. Tolor (1978) similarly found, for women but not for men, that those with severe and frequent childhood accidents and illness held more HLC external beliefs. Longitudinal investigations are needed to further our understanding of responses to disability.

## Symptoms

There is some indication that women with internal HLC beliefs report fewer menstrual symptoms (deHaas & vanReken, 1979). Also, Nice (1980b) found CHLC scores correlated with number of physical symptoms reported by naval wives separated from their husbands away at sea. In a stepwise regression, CHLC was the best predictor of physical symptoms. For his total sample, including navy wives whose husbands were not at sea, Nice (personal communication, 1981) found that CHLC correlated positively and IHLC correlated negatively with reported number of symptoms. Inasmuch as Nice's data are prospective, they suggest that endorsement of CHLC beliefs may result in heightened sensitivity to symptoms. However, chance locus of control beliefs may develop as a response to increased symptomatology. Nice's longitudinal data provide a means of differentiating among these hypotheses, although such analyses have not yet been done.

## Adherence to Medical Regimens

Although Strickland (1978) noted that: "internal adults . . . attempt to influence health care to a greater extent than externals [p. 1198]," Wallston and Wallston (1978) concluded that: "the relation between compliance with medical regimen and locus of control is unclear [p. 112]." Research using the HLC and MHLC Scales continues to provide conflicting data.

Although research using only the I-E distinction provides some evidence that internality is related to judged dietary compliance among male hypertensives (Wallston & McLeod, 1979) and self-reported medication compliance for hypertensives who also perceived a high level of assistance in following their regimen (Lewis, Morisky, & Flynn, 1978), contrary data also exist. Key (1975) found better adherence by HLC externals in terms of medication taking (indexed by urinary drug levels) and diet among the predominantly black, female hypertensive patients investigated. Two studies (Key, 1975; Wallston & McLeod, 1978) found no relationship between HLC and appointment keeping or self-reported medication taking.

The distinction between chance and powerful-others health locus of control seems particularly important in understanding adherence behavior, and multid-

mensional studies provide somewhat more consistent data. There is no indication that beliefs in CHLC are predictive of adherence (e.g., Goldstein, 1980; Hatz, 1978; Levin & Schulz, 1980). However, some studies indicate that internality is the best predictor of adherence, whereas others suggest the importance of a powerful-others orientation. Levin and Schulz (1980) found that renal dialysis patients scoring high on IHLC adhered more closely to their diet and restricted weight gain more than did low scorers, whereas PHLC scores were unrelated to these adherence measures. McGrath (1980) similarly found that those mothers she classified as internal more regularly administered anticonvulsants to their epileptic children than those mothers with the strongest beliefs in powerful others; however, her comparison of each person's IHLC, PHLC, and CHLC scores failed to take into account normative differences among the scales.<sup>7</sup> Goldstein (1980) found that beliefs in internality and in powerful others were positively related to a diabetic management index among adult insulin-dependent diabetics. Hatz (1978) found that beliefs in powerful others but not internality was related to less weight gain between treatments, a reasonable proxy measure of adherence by dialysis patients. However, Nagy (personal communication, 1981) found no relation between MHLC scores and clinic visits, medication taking, or other adherence behaviors among the diabetic, hypertensive, and pulmonary patients she studied.

DeVellis et al. (1980a) found that MHLC variables explained a significant amount of variance in an index of self-reported health-related behaviors of persons with epilepsy. The adherence behaviors investigated were medication taking, refraining from driving, and refraining from drinking alcohol. The best three predictors of the behavioral index were PHLC, IHLC multiplied by health value, and IHLC alone. This latter factor correlated negatively with the index, reflecting that—without regard to the value placed on health—internals with epilepsy were more likely to admit driving, drinking, and failing to take their medication. Those internals with high health value, however, were more likely to report adherence. For persons with mild epilepsy, driving and drinking in moderation might be viewed as adaptive behaviors, even though persons with epilepsy are told not to engage in either.

Thus, beliefs in internality and in powerful others health locus of control may be conducive to adherence. More work is needed distinguishing between types of adherence and investigating typologies of beliefs in this area. We have noted that a partnership with health professionals may entail both IHLC and PHLC beliefs

<sup>7</sup>Because within the American culture beliefs in IHLC are typically stronger than beliefs in CHLC and PHLC, comparisons among scores should be made only after standardizing within each scale. Most persons score above the theoretical mean on IHLC and below the theoretical mean on CHLC. Drawing comparisons between raw scores for an individual without taking this general tendency into account is inappropriate.

(i.e., Type V) and that such a partnership is particularly important for patients with chronic diseases.

## RESPONSES TO HEALTH CARE INTERVENTIONS

Health locus of control expectancies can contribute to understanding responses to health care interventions in two ways. As we have previously noted (Wallston & Wallston, 1978), many interventions, particularly health education programs, emphasize patient responsibility and internal beliefs. One indicator of the success of such programs would be changes in expectancies regarding health locus of control, utilizing such beliefs as a dependent measure. Alternatively, health locus of control beliefs may be considered an independent variable, and programs may prove differentially effective for persons with differing beliefs. We have previously argued for the potential value of tailoring programs to individuals' expectancies (Wallston & Wallston, 1978). Strickland (1978) has similarly concluded: "Congruence between locus of control expectancies and the structure of the therapeutic endeavor appears to lead to the most pervasive changes [p. 1203]." For example, Cromwell, Butterfield, Brayfield, and Curry (1977) found that among cardiac patients, only those in incongruent conditions (externals with high participation or internals with low participation in self-treatment) either returned to the hospital or died within 12 weeks following their hospital stay. Research utilizing health-specific measures of these expectancies can now be reviewed, considering such expectancies as dependent and independent variables.

### Health Locus of Control as a Dependent Variable

Several studies of health education programs have failed to find changes in locus of control beliefs consistent with program intent (Davis, 1979; Nagelberg, 1979; Schiller, Stekler, Dawson, & Heyman, 1979). Whether these findings are suggestive of problems with the programs or the scales is not clear. Moreover, all of these programs involved healthy participants with relatively high beliefs in internality at the outset. Thus, a ceiling effect may have been involved or the programs may have been aimed at the wrong audience. Moreover, Davis (1979) and Schiller et al. (1979) report relatively high program attrition. There is some indication in the Schiller et al. (1979) study that completers had stronger internal beliefs than those who did not attend class regularly (see Wallston & Wallston, in press, for a more detailed discussion). Davis (1979) presented no pretest data on program dropouts. Special intervention may be necessary to maintain the health

education class participation of healthy individuals with low beliefs in internality.

Roter's (1977) health education intervention, designed to increase question asking during a medical visit, successfully increased scores on internal health locus of control beliefs for experimental group patients in comparison to placebo group patients. As this sample was predominantly black, female, elderly, and chronically ill, it is impossible to gauge whether the nature of the intervention or the subject population accounted for the success of this study in contrast to those reported earlier.

Two studies with cancer patients provide some evidence for intervention effectiveness in influencing HLC beliefs. Mastectomy patients who received a special counseling intervention were significantly less external than the standard care comparison group 2 months after surgery (Bloom, 1979). There was some indication of increased externality among control group cancer patients after 3 months in comparison to the experimental group receiving a psychosocial rehabilitation intervention (Diller, Gordon, Friedenbergs, Ruckdeschel-Hibbard, Levine, Wolf, Ezrachi, Lipkins, Lucido, & Francis, 1979; see also, Wallston & Wallston, 1981). But significant changes over time were not reported in another report of the study (Gordon, Friedenbergs, Diller, Hibbard, Wolf, Levine, Lipkins, Ezrachi, & Lucido, 1980). However, control group dropouts at 6 months were more external, whereas intervention group dropouts did not differ on this variable. Gordon et al. (1980) conclude:

The cluster of variables associated with attrition [in the control group] (older, less educated, high external locus of control, etc.) may be viewed as potential barriers to rehabilitation, since they are factors that work against a patient's maintaining contact with components of the health care system. . . . In contrast, intervention appeared to militate against these sources of attrition, since systematic intervention had the benefit of maintaining contact with those who might have been lost at follow-up [p. 757].

Each study discussed in this section has utilized a different intervention with a different sample. Further work is clearly needed on the nature of appropriate interventions if changes in health locus of control expectancies are desired. Such changes would be appropriate were there sufficient evidence that particular belief structures are related to health behaviors. For example, if we knew for certain that Type I individuals (pure internals) were the ones most likely to live a healthy life style, we might want to increase the number of Type I persons in the population. Additional research investigating belief-behavior relationships is necessary before interventions to change beliefs are recommended.

Moreover, interventions must be designed with the nature of the clients in mind. Somewhat more success has been evident in interventions with chronically ill samples than with healthy samples. This may be because healthy persons who volunteer for health education interventions are the ones whose expectancies are

already in line with the intervention. For example, participants at a YMCA health fair had higher internal and lower chance health locus of control beliefs compared with typical adult samples (Wallston & Wallston, 1978). More research is needed on attracting and maintaining contact with persons who most need health education intervention.

### Health Locus of Control as an Independent Variable

Although there is still reason to believe that tailoring treatments to locus of control beliefs has great promise, the limited evidence to date is not yet encouraging. Two studies of self-medication classes for psychiatric patients preparing for discharge (Battle & Halliburton, 1979; Witt, 1978) failed to impact on medication adherence for internals and externals. However, at the time of discharge, external low health value patients were the least adherent in one of these studies (Battle & Halliburton, 1979) as would be expected theoretically. Saltzer (1979, 1980) found no differences in effectiveness or completion of a medical weight reduction program in relation to generalized health locus of control beliefs. However, her own weight locus of control scale was predictive of behavior. Program completers were more internal with respect to expectancies regarding weight loss, and weight locus of control internals who valued health or physical appearance were more likely to translate their behavioral intentions to lose weight into successful weight loss.<sup>8</sup>

In the one study clearly designed to test the notion of tailoring treatments, the findings were mixed (Wallston, Wallston, Kaplan, & Maides, 1976). Although HLC internals expressed greater satisfaction with a self-directed weight management program and HLC externals (PHLC and CHLC combined) were more satisfied with the therapist-directed program, weight loss data were in the expected direction but not statistically significant.

Inasmuch as three of the four reported studies did not utilize interventions specifically tailored to locus of control expectancies, the lack of differential effects is not surprising. Further work on tailoring treatments to HLC expectancies is clearly needed.

### INTERACTION WITH HEALTH CARE SETTINGS

Little work has been done on differential responses to health care settings in relation to health locus of control expectancies. In a theoretical analysis, Taylor (1979) has characterized the hospital environment as one in which people have

<sup>8</sup>The findings regarding physical appearance suggest the importance of measuring the value of the appropriate reinforcer. Behaviors we classify as health-relevant may have other reinforcing properties.

little control. This should be particularly problematic for persons who expect and desire control. Research on differential utilization of health systems and responses to such systems can now be reviewed.

### Health System Utilization

Differential utilization of health systems has been found by persons differing in health locus of control beliefs. Krantz et al. (1980) found that HLC internal college students reported fewer clinic visits, perhaps indicative of self-reliance. A second sample of HLC internals was more likely to use self-diagnosis. However, Krantz's own Health Opinion Survey was a better predictor of these behaviors than the HLC Scale.

The importance of the distinction between chance and powerful-others health locus of control is evident from Nice's data on navy wives' visits to physicians (personal communication, 1981). The women with higher beliefs in PHLC had some tendency to visit physicians more frequently, whereas beliefs in CHLC and IHLC were unrelated to this behavior. However, when data were analyzed separately for navy wives separated from their husbands who were at sea, none of the MHLC scales correlated with the number of physician visits. The separated wives visited physicians more frequently than control group wives (Nice, 1980b). Symptoms were the major predictor of physician visits for the separated wives, and as already discussed, CHLC is positively correlated with reporting of symptoms. Thus, beliefs in CHLC have an indirect, rather than a direct, influence on doctor visits because they moderate perception or reporting of symptoms.

Macri (1980) found that PHLC was negatively correlated with total delay in seeking treatment among males hospitalized with chest pain. Neither IHLC nor CHLC beliefs were related to total delay. Using Safer, Tharps, Jackson, and Leventhal's (1979) distinctions between appraisal delay (deciding one is ill), illness delay (deciding that medical care is needed), and utilization delay (time between illness delay and seeking care), it appears that the correlation with total delay is due to the relationship between PHLC beliefs and illness delay. It is theoretically consistent with recognition of the need for medical care would come more quickly for those with strong PHLC beliefs. No MHLC belief dimension predicted utilization delay, but appraisal delay was significantly related to CHLC beliefs. As 93% of this sample ranked health value high, linear relations with health locus of control beliefs are to be expected. Although the small sample size of this study makes one wary of generalization, the data are consistent theoretically and provide further indication of the importance of the multidimensional distinctions.

Butler (1980) studied first-time clients of chiropractors, nutrition counselors, and medical doctors. Clients of alternative practitioners had lower CHLC beliefs than medical-doctor clients. Clients of medical doctors reported the highest

PHLC beliefs, whereas clients of nutrition counselors evidenced the lowest PHLC beliefs. Although nutrition-counselor clients were the most internal and medical-doctor clients the least internal, the IHLC dimension did not discriminate between groups because this highly educated, predominantly white sample evidenced high IHLC beliefs relative to adult normative data. Inasmuch as long symptom duration was the best discriminator between clients of alternative practitioners and those of medical doctors, low PHLC beliefs may reflect the lack of positive response by the medical system to clients' health problems. In addition to long-standing health problems, these clients of alternative practitioners had seen more health practitioners within the last year and expressed more negative attitudes regarding the professional competence of medical doctors. Butler's findings are particularly important because they account for more variance than most of the studies in the utilization research literature (see Mechanic, 1979, for a review); they also emphasize the importance of the multivariate health locus of control distinctions.

### Responses to Health Systems

Krantz et al. (1980) found that internal college students who visited the clinic were more likely to assert themselves by requesting specific medications than moderate scorers or those with more external health locus of control beliefs.

Roter (personal communication, 1981) analyzed verbal content and filtered speech of patients interacting with physicians. Among internals, verbal content showed high scorers to be less anxious, more satisfied, and more assertive than low scorers. High internal scorers' filtered speech also showed less anxiety, and they were judged as more likely to return to the clinic. For externals, no relationships were found on verbal content analyses. For filtered speech, high external scorers evidenced more anxiety and were judged less likely to return to the clinic than low external scorers.

Although Binik and Devins (1979) found no differences in HLC beliefs among renal dialysis patients on staff-assisted hospital dialysis, patient-managed hospital dialysis, and home dialysis patients, Levin and Schulz (1980) found some distinctions. Hospital hemodialysis patients evidenced stronger PHLC beliefs than did self-care patients, although the groups did not differ in CHLC or IHLC beliefs.

In a recent study (Smith et al., 1981), we have found that participants wishing to die in a hospital had higher PHLC scores than those expressing a preference for dying at home or in a hospice facility. These groups did not differ in CHLC or IHLC beliefs.

Nicholson (1980) found that mothers involved in prepared childbirth expressed decreased IHLC beliefs and increased CHLC beliefs following delivery. Experiences during hospitalization (e.g., being bullied by the doctor) could account for these changes.

Although data on responses to health systems are limited, they support the importance of differentiating internal, chance, and powerful-others HLC beliefs. Work investigating and manipulating control in health care settings in relation to people's expectancies is an important direction for future research.

### THE TYPOLOGY REVISITED

The bulk of the research reviewed in this chapter has concentrated on individual differences in beliefs and behaviors and has typically ignored situational factors. Too little attention in this research has been paid to the situation and the actual contingencies that are present. Many people, including ourselves, have often taken the naive position that it is important to strengthen internal beliefs and create "internals" or Type I's (cf. Wallston & Wallston, 1973), but there may be instances when this is unwarranted. Wortman and Dunkel-Schetter (1979) noted that internal beliefs may be maladaptive for some persons with cancer if, indeed, there is nothing that they themselves can do about their condition. High IHLC (Type I) cancer patients might expend valuable energy and resources in futile attempts to alter the course of their condition positively (e.g., flying to a foreign country to obtain Laetril or some other highly touted "cure" not available locally), or they might refuse to take advantage of some possibly effective treatment (e.g., chemotherapy or radiation), the availability of which is mediated by powerful others.

Another drawback to being a strong Type I individual is that espousing such beliefs may alienate potential helpers who, when alienated, might be all too willing to let the patient assume total responsibility and then turn around and blame the patient if and when things go wrong. The movement toward getting persons to assume more of the responsibility for their own health can be viewed as an abrogation of responsibility on the part of the health care system. We may see a great deal of "blaming the victim" (cf. Ryan, 1971) when patients' efforts in contributing to their own health come to naught. This is not to suggest that strong beliefs in IHLC are not adaptive under some conditions.

Patients with chronic diseases are often heavily reliant on health professionals or other people such as family or friends. In these instances, strong PHLC beliefs reflect actual situational contingencies and are probably adaptive, but only if other people are willing and able to be of assistance. The person who believes exclusively in control by powerful others (Type II in our suggested typology) would be totally helpless if others were not there to give help and direction.

Although Bulman and Wortman (1977) found that taking responsibility for an accident related to positive coping by spinal cord injury patients, CHLC beliefs can be a positive response to the question "Why me?," which frequently is the initial reaction to illness onset or accidental injury. Strickland (1978) noted: "It may be that a defensive stance is helpful when a person who is accustomed to

considerable personal control is suddenly faced with events beyond his or her influence [p. 1198]." It might be better to believe that you were singled out for misfortune on a strictly random basis than to feel that you brought your troubles on yourself or that someone else was out to get you.

Thus, in the early stages of trying to come to grips with ill health—especially if you are in the hands of competent health professionals—there might be definite advantages to being Type III or IV. The linkage between CHLC and depressive affect and the reporting of physical symptoms, however, suggests that Type III beliefs may not be generally adaptive; that is, only when no real control is possible is it likely that perception of lack of control is highly adaptive. In fact, Langer (1975, 1977) has argued for the adaptiveness of perceiving more control than may be present, and research on depression (cf. Arnkoff & Mahoney, 1979; Golin, Terrell, & Johnson, 1977) suggests that persons who are depressed more accurately perceive situational contingencies. The value of Type III (chance external) beliefs is an open question.

Earlier in this chapter we discussed the Type V belief pattern (high IHLC, high PHLC, low CHLC) as conducive to forming a partnership between health care consumer and provider. At that time we were only referring to the consumer's beliefs. Obviously, however, it takes two to form a partnership. Nothing is known about the health locus of control beliefs of health care providers, particularly about which beliefs they would want their patients to hold. We can speculate that the ideal partnership between provider and consumer is one in which they mutually believe that each has something to bring to the partnership and that only by working together will they optimize the outcomes. The relationship between Norman Cousins and his personal physician exemplifies this.

In order for such partnerships to form and work, however, a revolutionary change needs to take place in the socialization of health professionals, especially physicians who often develop a self-perception of omnipotence and omniscience (Kane & Kane, 1969). According to one leader of this revolution (Mendelsohn, 1979), in the new medicine: "Health neither begins nor ends with the doctor. The doctor's role is somewhere in the middle [p. 171]." This medical "heretic" goes on to say: "The doctor-patient relationship is democratic in the sense that both doctor and patient share information equally [p. 173]." Getting doctors to inform patients fully of relevant facts is a revolutionary concept and one that will entail great behavioral changes on the part of many providers. The Type V patient, however, will be eager and ready to have that information.

As currently organized, the health care system in general is oriented toward removing control from patients and placing it in the hands of health care professionals. This is particularly true within hospitals (Taylor, 1979). However, the system and individuals in the system give patients mixed messages. On the one hand, hospitals are total institutions (cf. Goffman, 1961) filled with dehumanization and loss of control for patients. On the other hand, as patients leave the hospital, particularly those with chronic conditions, they are told to take care of

themselves and assume responsibility for their health. Little preparation for such responsibility is provided to patients, and they are blamed when they do not follow doctors' orders and engage in health and sick role behaviors. Yet even the term *compliance* suggests a hierarchical rather than partnership relationship between patients and physicians (see Leventhal & Hirschman, Chapter 7, this volume). "Good patients" are those who obey orders and do not question the doctor's authority (Taylor, 1979).

What are the implications of these ideas for research on control and health care delivery? It is clear that a personological approach is too narrow. Person and situation (Lewin, 1951) must be considered. Research must take into account actual situational potential for control, patients' perceptions and expectancies regarding control, and the expectancies of health care providers. Only by studying the complex interaction of these factors will we be able to predict health behavior and thus intervene effectively to enhance health.

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