

# MUCH ADO OVER A FAULTY CONCEPTION OF PERCEIVED SELF-EFFICACY GROUNDED IN FAULTY EXPERIMENTATION

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Cahill, Gallo, Lisman, and Weinstein (2006) adopt a conception of “ability” as possessing rudimentary components in a behavioral repertoire. This view is at odds with what constitutes an ability and misrepresents the construct of perceived self-efficacy. To verify their hypothesis concerning the relation between ratings of ability and willingness in “fear-based” and “skill-based” tasks, they deliberately instruct participants in the hypothesis before testing it. This is an egregious violation of the scientific method. The present commentary clarifies the construct of self-efficacy, documents flaws in the Cahill et al. experimentation, reviews diverse lines of research that disputes their causal claims, and comments on their expansive generalizations and recommendations to extend their intentionally biasing rating procedure to other activity domains.

In a paper concerning the construal and assessment of perceived self-efficacy, Cahill et al. (2006) present a simplistic conception of self-efficacy examined with flawed experimentation. Their study of the construct provides an opportunity to restate the conceptualization of this self-belief system and to evaluate the methodology of the study they conducted.

## TRIVIALIZATION OF THE CONSTRUCT OF SELF-EFFICACY

Let us first consider the construal of perceived self-efficacy. Cahill and his colleagues adopt a conception of self-efficacy as possessing rudimentary components in a behavioral repertoire. For example, in their view of perceived self-efficacy in the self-management of alcohol abuse, self-efficacy consists of being able to ask a bartender for a liquid

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refreshment and being able to pour it in a glass. Let us now examine the logical reasoning flowing for their conception of the construct. As they state their basic premise, the skill involved in asking a bartender for ginger ale is no different than asking for a beer, nor is the skill in pouring orange juice in a glass different from pouring a glass of whiskey. Moreover, alcoholics possess the skill to put down a glass of whiskey, to pour it out, or to walk out of the place. Hence, they argue that alcohol abuse is a matter of will rather than perceived efficacy to manage drinking behavior.

In the case of substance abuse, perceived self-efficacy has never been defined as the ability to execute the mechanics of asking, pouring, and walking. Indeed, to do so would be superficial. The self-management of alcohol involves perceived self-regulatory capabilities to manage instigators to drink alcohol. Contrast the Cahill et al. conceptualization of self-efficacy with the programs of research designed to clarify the role of people's belief in their self-regulatory efficacy in their management of alcohol. Marlatt and Gordon (1985) identified three clusters of problematic conditions in the self-regulations of substance abuse. They include inability to manage negative emotional states such as stress, depression, loneliness, boredom and restlessness; social pressures to use the substance; and interpersonal conflict, as when arguments eventuate in a drunken episode. Efficacy assessments confirm that such conditions tax perceived self-efficacy to resist the use of the substances (Barber, Cooper, & Heather, 1991; Barrios & Niehaus, 1985). Moreover, the emotional and situational strains on the exercise of perceived self-efficacy are very similar across cultures (Sandhal, Lindberg, & Rönnerberg, 1990). Lapses are more likely to occur under conditions where individuals have the lowest perceived self-efficacy to mobilize their resources to resist use of the substances (Gwaltney et al., 2002). Moreover, daily self-efficacy predicts progression from lapse to relapse even after controlling for baseline self-efficacy and concurrent substance use (Shiffman et al., 2000).

Research conducted within the sociocognitive framework demonstrates that perceived self-regulatory efficacy is an important operative factor in the initiation, attainment, and maintenance of changes in drinking behavior. Alcoholics who have a low sense of self-regulatory efficacy become resigned to their condition and do not even consider doing anything about their drinking problem (DiClemente & Hughes, 1990). In a comparison of multiple possible determinants, Schimmel (1986) found that a low sense of self-regulatory efficacy is one of the best predictors of premature termination of treatment for alcoholism. Those beset with severe self-doubt in their efficacy see little point in pursuing a prescribed treatment. Among those who enter treatment, the more the program raises their perceived efficacy to resist the urge to drink in

high-risk situations the better they control alcohol consumption over follow-up periods, regardless of how dependent they had become on alcohol (Sitharthan, 1989; Sitharthan & Kavanagh, 1990; Solomon & Annis, 1989).

To evaluate the regulative role of outcome expectancies, which is also relevant to Cahill et al.'s research (2006), Solomon and Annis (1990) compared the relative contribution of efficacy beliefs and outcome expectancies to the maintenance of sobriety following treatment. Efficacy beliefs predicted success in controlling alcohol consumption. Outcome expectancies did not account for variation in drinking behavior when the influence of self-efficacy is controlled. Efficacy beliefs remain a significant predictor of future drinking behavior when severity of drinking at intake is held constant. When outcome expectations do emerge as independent predictors, they generally contribute less to variation in drinking behavior than do efficacy beliefs (Young, Oei, & Groom, 1991). Perceived self-efficacy to resist social pressure to drink distinguishes between abstainers and relapsers following training in resistive social skills but anticipatory stress in such situations does not (Rist & Watzl, 1983).

This is but a small sample of how research conducted within the conceptual framework of self-efficacy theory is adding to our understanding of the role self-efficacy plays in the self-management of alcohol abuse. Detailed reviews of the relevant literature are available elsewhere (Bandura, 1999; DiClemente, Fairhurst, & Piotrowski, 1995; Marlatt, Baer, & Quigley, 1995). Perceived self-efficacy has been shown to play a similar functional role in the self-management of drug use and smoking (Bandura, 1997). Perceived skill in the mechanical execution of asking, pouring, and walking away is a Cahill et al., (2006) simplistic conception of self-efficacy not the construct as defined and operationalized in social cognitive theory.

There is more to self-regulation of substance abuse, of course, than resisting pressures to consume an addictive substance. Most of the research in this domain of functioning focuses on perceived resistance self-efficacy. DiClemente, Marlatt and their colleagues identify other facets of self-efficacy that come into play in the development and successful self-management of substance abuse (DiClemente et al., 1995; Marlatt et al., 1995). These include, in addition to *resistance self-efficacy*, *coping self-efficacy* in managing interpersonal conflicts, perturbing affective states, and social inducements that increase risk of heavy drinking; *harm reduction self-efficacy* through the exercise of controlled drinking; *recovery self-efficacy* from slips and setbacks; and *maintenance self-efficacy*, the belief that one can sustain self-regulatory control over the long-term.

Self-efficacy theory not only sheds light on the self-regulation of drinking behavior but also provides guides for treatment and for devel-

opment of resilience to relapse. This is well illustrated in the work of Annis and Davis (1989). Self-efficacy assessments are used to identify the types of situations in which individuals express doubts in their efficacy to control their drinking behavior. These situations are then ranked from lowest to highest vulnerability for heavy drinking. After the participants develop self-regulative skills and rehearse flexible plans of action, they carry out mastery assignments in which they deal with progressively more risky drinking situations in their natural environment until they can manage them without recourse to alcohol. Drinking slips provide opportunities to remedy remaining vulnerabilities. A program of relapse management guided by microanalytic assessment of perceived coping self-efficacy coupled with corrective mastery experiences provide the staying power in the maintenance of sobriety.

Severe alcoholics who undergo a residential treatment program are usually scheduled for periodic follow-up sessions designed to assess their status and bolster their coping efforts. Those with a high sense of efficacy keep up their aftercare contacts and achieve a relatively high rate of sobriety over the course of a year (Rychtarik, Prue, Rapp, & King, 1992). By contrast, virtually all of those low in both perceived self-efficacy and participation in aftercare revert to drinking by the third month. Efficacy beliefs at intake predict maintenance of abstinence after controlling for age, marital and employment status, and degree of alcohol dependence. None of these factors except self-efficacy beliefs predict abstinence.

From their conception of self-efficacy, Cahill and his colleagues (2006) similarly dismiss the role of perceived self-efficacy in the regulation of self-protective behavior to prevent HIV infection. They begin with the premise that, "the skills needed to purchase and apply a condom are relatively simple and easily acquired (p. 207)." Males are "fully able to do so." Hence, the problem is weak will not perceived inefficacy. Here, too, if self-efficacy theory defined self-regulatory efficacy in AIDS prevention in this simplistic way it would be considered the height of superficiality.

Effective self-protection against AIDS infection requires social and self-regulatory capabilities to exercise control over sexual and drug activities, the two main modes of transmission of the HIV virus. To succeed, individuals have to override the influence of coercive allurements, desire for social acceptance, social pressures, and situational constraints. For example, women have the lowest perceived self-efficacy to exercise control over pressures by a desirable partner to engage in unprotected intercourse that potentially places them at risk of infection (Kasen, Vaughan, & Walter, 1992).

In the self-efficacy scales devised to assess the self-management of sexual and drug activities, individuals rate the strength of their efficacy

to exercise self-protective behavior in the face of these various social pressures (Bandura, 1994). Exercise of personal control over sexual behaviors that carry risk of infection calls on self-efficacy in communicating frankly about sexual matters, negotiating protective sexual methods, and ensuring their use. Therefore, perceived efficacy to talk candidly about self-protective sexual practices is part of the assessment.

The role of perceived self-efficacy in the adoption and maintenance of self-protective behavior is corroborated in diverse lines of research. Even though individuals acknowledge that safer sex practices reduce risk of infection, they do not adopt them under a low sense of efficacy to exercise control in sexual relations (Siegel, Mesagno, Chen, & Christ, 1989). Perceived self-efficacy to negotiate condom use predicts safer sex practices in adolescents (Basen-Engquist & Parcel, 1992; Jemmott, Jemmott, & Fong, 1992; Jemmott, Jemmott, Spears, Hewitt, & Cruz-Collins, 1992; Kasen et al., 1992) and adults alike (Brafford & Beck, 1991; Heinrich, 1993; McKusick, Horstman, & Coates, 1985; O'Leary, Goodhart, Jemmott, & Boccher-Lattimore, 1992).

Drugs and alcohol lower perceived self-efficacy to adhere to safer sex practices (Kasen et al., 1992; Rosenthal, Moore, & Flynn, 1991). Among drug users, perceived self-efficacy predicts success in regular use of clean needles and condoms with sexual partners (Kok, deVries, Mudde & Strecher, 1991). Perceived self-efficacy is related to self-protective behavior both concurrently and longitudinally and to exercise control while under the influence of alcohol and drug use.

In AIDS preventive programs using the major modes of efficacy development, participants are taught, through modeling and enactive mastery, how to communicate frankly about sexual matters and contraceptives, how to deal with conflicts regarding sexual practices, and how to resist unwanted sexual advances. They practice applying these strategies by role-playing in simulated situations and receive enabling feedback. Such self-regulative programs significantly enhance perceived self-efficacy in managing sexuality (Gilchrist & Schinke, 1983; Jemmott, Jemmott, Spears, Hewitt, & Cruz-Collins, 1991).

The unique contribution of perceived self-efficacy to the exercise of control over HIV infection is extensively reviewed elsewhere (Bandura, 1994).

## **PERCEIVED SELF-EFFICACY AS OPERATIVE CAPABILITY**

No credible theory of ability characterizes it solely as possession of rudimentary elements in one's behavioral repertoire. For example, oratorical ability cannot be reduced to possessing phonemes in one's vocal repertoire. Ability involves synthesizing varied component skills into new forms of activities that must be flexibly orchestrated to manage changing

situational demands. However, the behavioral construction aspect of an ability is only half the story, and in many respects, the less interesting half. An ability is only as good as its execution. Adaptive and flexible execution of abilities requires enlistment of cognitive, motivational, self-regulatory, and affect regulation skills. Because efficacy beliefs affect these diverse constituent contributors to quality of functioning, the same individual may perform poorly, adequately, or well with the same ability depending on fluctuations in their perceived self-efficacy (Bandura, 1990). In short, ability is not a collection of fixed rudimentary components.

Perceived self-efficacy is conceptualized as *perceived operative capability*. It is concerned not with what one *has* but with belief in what one *can do* with whatever resources one can muster. The operative nature of perceived self-efficacy is an integral feature of the procedure used to access people's efficacy beliefs. Individuals are not asked to rate the *ability they possess*, but rather the strength of their assurance that they *can execute* given activities under designated situational demands.

### **FALSE DICHOTOMY IN PARTITIONING TASKS**

The Cahill et al. partition of activities into "ability" and "non-ability" is a false dichotomy. All activities involve abilities but different activity domains call on different types and blends of constituent skills. The events over which personal influence is exercised can vary widely in the constellation of skills they require. It may entail regulating one's thought processes, motivation, performance level, emotional states, or altering environmental conditions. The nature of the challenges against which personal efficacy is judged will vary depending on the sphere of activity. Challenges may be graded in terms of level of creativity, exertion, accuracy, productivity, threat, or the self-regulation required, just to mention a few dimensions of performance demands.

As explained in the guide for constructing self-efficacy scales (Bandura, 2006), perceived self-efficacy should be measured against levels of task demands that represent gradations of challenges or impediments to successful performance. Self-efficacy appraisals reflect the level of difficulty individuals believe they can surmount.

### **FAILURE TO RECOGNIZE SELF-REGULATION AS AN ABILITY**

Many areas of functioning are primarily concerned with self-regulatory efficacy to guide and motivate oneself to get things done that one knows how to do. In such instances, self-regulation is the capability of interest. The issue is not whether one can perform the mechanics of an activity, but whether one has the efficacy to get oneself to do the activity regularly in

the face of different types of dissuading conditions. For example, in the measurement of perceived self-efficacy to stick to a health-promoting exercise routine, it is perceived self-regulatory capability, not ability to walk, that is the essential ability. In measuring individuals' self-regulatory efficacy, they judge how certain they are that they can get themselves to exercise *regularly* under various impediments, such as when they are under pressure from work, are tired or depressed; in foul weather; and when they have other commitments or more interesting things to do.

Self-regulation is not an act of will. It is a skill that must be developed. Different models of self-regulation have been proposed but they are all rooted in several generic subfunctions through which human agency is exercised (Bandura, 1991; Zimmerman & Schunk, 1989). In the applications of this knowledge, individuals are taught how to monitor their behavior and the cognitive and situational conditions under which they engage in it; how to create proximal goals for exercising control over their behavior in the here and now; how to draw from an array of coping strategies rather than relying on a single technique; and how to enlist motivating incentives to sustain their efforts. It is one thing to possess self-regulatory skills but another to get oneself to apply them consistently and persistently in the face of difficulties, stressors and competing attractions. Firm belief in one's self-regulatory efficacy provides the staying power in the face of such impediments (Bandura, 1997).

Arguing from their conception of ability and failure to recognize self-regulation as an ability, Cahill and his colleagues assign "drug/tobacco/alcohol abstinence, condom use, weight loss, exercise" to their dichotomized non-skill category. Based on this faulty classification, the self-management of these conditions is claimed to be a matter of will not self-efficacy. The prior analysis of the diverse impact of perceived self-efficacy on functioning in these domains, exposes the superficial view of ability embraced by Cahill and his colleagues. People are helped to manage substance abuse, to adopt habits that promote health and discard those that impair it, to advance their self-development, and to manage their negative affective states not by willing themselves to success but by cultivating their self-management skills and building a resilient sense of self-regulatory efficacy to sustain their efforts in the face of difficulties and setbacks (Bandura, 1999, 2004; DiClemente, et al., 1995; Rehm, 1981; Zimmerman & Cleary, 2006.)

### **PERCEIVED COPING EFFICACY OVERRIDES ANTICIPATORY ANXIETY**

Cahill et al. (2006) argue that self-efficacy measures assess perceived ability in "skill-based" tasks, but willingness governed by anticipated

anxiety in “fear-based” tasks. As previously noted, this line of reasoning is based on their odd conception of ability as possessing elementary motor elements in one’s behavioral repertoire. In tests of progressively closer contact with a snake, which is the main subject of the article under discussion, they report that phobics possess the ability to walk toward a cage, place their hand on it, and reach in. Their ratings of perceived self-efficacy, therefore, reflect anxiety-based unwillingness rather than perceived inefficacy.

Commerce with snakes involves *coping skills*. In the powerful guided mastery treatment, which eliminates snake-phobic behavior in everyone in a few hours, phobics are taught how to handle a snake in ways that enables them to exercise full control over over it (Bandura, 1977; Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977; Bandura, Adams, Hardy, & Howells, 1980). With a strong sense of coping efficacy, former phobics are willing to do anything you ask them with a snake in intimidating behavioral tests. These remarkable outcomes were achieved by enhancing controlling efficacy not by will enhancement.

In follow-up assessments the participants reported that they had undergone transformative changes in beliefs in their personal efficacy. They expressed deep gratitude to be rid of their phobia, but then explained that the treatment had a much more profound impact. Their lives had been debilitated socially, recreationally, and occupationally for 20 to 30 years. To add to their torment they were plagued by recurrent nightmares and perturbing ruminations they were helpless to control. To overcome, within a few hours, a phobic dread that had constricted and tormented their lives was a transformational experience that radically altered their beliefs in their efficacy to exercise control over their lives. They were acting on their new self-efficacy belief and enjoying their successes, much to their surprise. These preliminary findings pointed to a common mechanism through which personal agency is exercised (Bandura, 2005).

I mounted a multifaceted program of research to gain a deeper understanding of the nature and function of this belief system. To guide this new mission, the theory addressed the key aspects of perceived self-efficacy (Bandura, 1997). These include the origins of efficacy beliefs; their structure and function; their diverse effects; the cognitive, motivational, affective, and decisional processes through which they produce these effects; and the modes of influence by which efficacy beliefs can be created and strengthened for personal and social change. Diverse lines of research, conducted by a variety of investigators, in diverse disciplines, provided new insights into the role of perceived self-efficacy in the fields of education, health promotion and disease prevention, clinical dysfunctions such as anxiety disorders, depression, eating disorders,



substance abuse, personal and team athletic attainments, organizational functioning, and the efficacy of our social and political systems to make a difference in our lives (Bandura, 1995; 1997; Pajares & Urdan, 2006; Schwarzer, 1992; Maddux, 1995).

Cahill et al. claim that phobic behavior is governed by willingness based on anticipatory anxiety rather than by perceived self-efficacy. This notion has been long retired empirically. Numerous studies have been conducted with severe agoraphobics in which the independent contribution of perceived efficacy and anticipated anxiety to phobic behavior is analyzed (Williams, Dooseman, & Kleifield, 1984; Williams & Rappoport, 1983; Williams and Watson, 1985; Williams and Zane, 1989). The findings consistently show that perceived self-efficacy predicts phobic behavior when anticipated anxiety is controlled, whereas the relation between anticipated anxiety and phobic behavior essentially disappears when perceived self-efficacy is controlled. Schoenberger, Kirsch, & Rosengard (1991) further confirm that snake phobic behavior is governed by perceived coping efficacy rather than by anticipatory anxiety.

It is commonly believed that agoraphobics constrict their lives because they fear they will become anxious, overcome by a panic attack, or that catastrophic consequences will befall them. The findings, however, show that neither anticipated panic nor perceived danger predicts agoraphobic behavior after controlling for the influence of efficacy beliefs. In contrast, efficacy beliefs are highly predictive of agoraphobic behavior when variations in anticipated panic, anticipated anxiety, and perceived danger are controlled (Williams, Turner, & Peer, 1985; Williams & Watson, 1985; Williams & Zane, 1989).

The predictive superiority of efficacy belief over anxiety arousal is corroborated across a variety of threats. Perceived self-efficacy accounts for variation in academic performances that entail threats but anxiety arousal does not (Meece, Wigfield, & Eccles, 1990; Pajares & Johnson, 1994; Pajares & Miller, 1994; Pajares, Urdan, & Dixon, 1995; Siegel, Galassi, & Ware, 1985). Efficacy beliefs predict performances on intimidating athletic tasks, anxiety arousal does not (McAuley, 1985). Belief in one's problem-solving efficacy predicts catastrophic worrying, anxiety level does not (Davey, Jubb, & Cameron, 1996). Perceived physical efficacy in elderly persons predicts engagement in a physically active lifestyle, whereas fear for one's safety in carrying out vigorous activities does not (Tinetti, Mendes de Leon, Doucette, & Baker, 1994).

In the treatment of phobic behavior by systematic desensitization (Wolpe, 1974), relaxation is repeatedly paired with increasingly menacing threats until they cease to arouse any anxiety. In a test of the governing mechanisms of change (Bandura & Adams, 1977), all the snake phobics were completely desensitized and exhibited no anxiety to the

most intimidating visualized threats, but their perceived self-efficacy at the end of treatment differed markedly. Their belief in their coping efficacy was highly predictive of their level of coping behavior. Indeed, the microlevel congruence between self-efficacy belief and corresponding coping behavior was a high 82 %.

The lives of many women are distressed and constricted by the pervasive threat of sexual assault. A mastery modeling program empowers women to exercise control over their social threat by equipping them with dependable self-protective skills and a robust sense of efficacy to use them effectively (Ozer & Bandura, 1990). They learned through modeling how to create an opening and disable an unarmed assailant instantly by delivering powerful strikes to vital areas of the body—the eyes, temple, throat, knees, groin. They mastered the self-defense skills in repeated simulated assaults by an assailant wearing heavily padded gear. They practiced how to disable their assailant when ambushed frontally, from the back, when pinned down, in the dark.

Were one to use the Cahill et al. (2006) trivial conception of self-efficacy it would be judged as an irrelevant because all women possess the rudimentary components to punch and kick. Path analyses of the causal structure revealed two paths of regulation of increased participation in outside activities and decreased avoidant behavior. One path of influence flows from perceived physical efficacy to ward off an assault through lowered personal vulnerability and increased ability to distinguish between risky and safe situations. Perceived self-efficacy to defend oneself physically also enhances cognitive control efficacy to turn off perturbing ruminative thoughts. In this second path of influence, high thought control efficacy reduces perturbing ruminations that lower anxiety and avoidant behavior. Here, too, self-protective behavior is predicted by perceived behavioral and thought control efficacy, but anticipated anxiety arousal does not predict avoidant behavior when the influence of the two forms of perceived self-efficacy is controlled.

Cahill et al. (2006) cite only three studies showing that anticipated anxiety loses its predictiveness when variation in perceived coping efficacy is controlled. However, in the very next paragraph they surprisingly resurrect the anxiety control view despite the evidence to the contrary. They continue to maintain throughout their paper that “Theoretically, people’s decisions about whether or not to perform a particular behavior within their repertoire are strongly influenced by the anticipation of the emotional consequences of those actions, such as experiencing anxiety, which is a type of outcome expectancy” (Cahill et al., 2006, p. 197–198). Conceptual advocacy trumps evidence that negates their belief.

It is interesting to speculate about why the belief that anticipatory anxiety controls avoidant behavior remains firmly entrenched despite massive evi-

dence to the contrary. A possible answer may lie in the force of confirmatory biases in human judgment of causality (Nisbett & Ross, 1980). Confirming instances in which anxiety and avoidance occur together are likely to remain highly salient in people's minds. Nonconfirming instances, in which approach behavior occurs with anxiety or avoidance occurs without anxiety, are less noticeable and memorable.

It is not that the nonconfirming instances are any less prevalent. Quite the contrary. As the findings from the diverse lines of research show, people do not inhibit or avoid activities just because they feel anxious. It would be highly dysfunctional to do so. People regularly perform activities for which they have a sense of efficacy despite high anxiety. For example, actors appear on stage even though they may be intensely anxious while waiting to go on. Athletes engage in competitive athletic activities despite a high level of precompetition anxiety. Students take intimidating examinations although they may be beset by aversive anticipatory anxiety. If individuals gave up because they felt anxious, their personal development would be severely stunted and they would be unable to manage their everyday life. Perceived self-efficacy enables individuals to handle pressures and stressors, which are part and parcel of the coping process of everyday life (Bandura, 1997).

As previously noted, self-efficacy measures are scaled in terms of the level of impediments or complications given activities present. Individuals rate their degree of assurance that they can surmount them. They are not instructed to judge their "ability." Rather, they are asked whether they believe they "can" get themselves to perform given activities, whatever resources they may have at their command or the amount of stress they may experience in doing so. In short, self-efficacy is concerned with perceived operative capability. The operative issue is not whether a snake phobic has the "ability" to walk into a room containing a snake in a cage but whether they can override their distress to do it. The tests of unique predictiveness reviewed earlier confirm that if individuals believe they can do it they will attempt it despite anticipated anxiety.

### **DELIBERATE INSTRUCTION IN THE HYPOTHESIS BEING TESTED**

Let us now turn to the experimentation. In an important program of research on experimenter biasing effects, Rosenthal (2006) demonstrated across a wide range of research activities that without proper safeguards experimenters can unwittingly lead participants to respond in accordance with the hypothesis they are testing. The research conducted by Cahill and his colleagues is unique in that they deliberately coached the participants for the very results they hypothesized! They characterize

this social coaching practice in the high-sounding prose of a “double dissociation” rating procedure.

They set out to test the hypothesis that in “skill-based” tasks individuals are willing to try tasks that exceed their ability. In a “fear-based” task, which individuals are allegedly fully able to do so because they have the motor components in their repertoire, but are unwilling to do them because of anticipatory anxiety. To test this hypothesis requires, in their view, “disambiguating instructions” to differentiate between willing to try and able to do so. This is achieved by “persuasive communications describing his (Kirsch) hypothesis with vivid examples” (p. 200).

In the study, undergraduate students completed a questionnaire in groups for academic course credit. They rated what they “*feel able to do*” and what they “*would be willing to try*” in progressively closer interactions with a snake, and tossing a wadded piece of paper into a waste paper basket at increasingly greater distances. In the standard rating format for self-efficacy scales (Bandura, 2006), individuals rate what they believe they “can do” not what they are “able to do.” Able denotes mere possession of ability or capacity. As previously noted, for Cahill et al. this means possessing elementary components in one’s behavioral repertoire. “Can do” denotes assurance to execute given levels of performance, which is in keeping with the operative conception of perceived self-efficacy. They used Kirsch’s (1982) conceptual descriptor for the ratings not the one used in self-efficacy theory. Cahill et al. do not explain why they changed the key wording, which undermines the relevance of their findings to the standard rating format used in self-efficacy theory.

In the design of the study, the participants in one condition were not taught the hypothesis. In the second so-called “double dissociation” “disambiguating” condition, the students were coached in the hypothesis. It was “vividly illustrated with two vignettes” (p. 202). In the “skill” vignette, designed to instill the mindset that willingness exceeds ability, a young man tells a friend who loads weights onto a barbell that he can’t lift that much weight but is willing to try anyway. In the “fear” vignette, a counselor tells a lonely student how to invite a female classmate for coffee. The vignette then proceeds to instruct the participants in the second half of the hypothesis that ability exceeds willingness because of anxiety. The lonesome student in the vignette not only recites this hypothesis, but even voices the simplistic conception of ability that he can speak the counselor’s recommended words so he has the ability but anxiety curbs his willingness (Cahill, personal communication, 2006). He tells the counselor that “of course, he had the ability to say those particular words” . . . “It’s not that I can’t say those words. It’s just that I get real anxious around people I don’t know . . . ” As the coaching proceeds, “The vignette continues with clarification that, in fact, the young man

has the ability to ask the classmate for coffee but experiences anxiety about the prospect of being rejected, which inhibits him from approaching the classmate" (Cahill, et al. 2006, p. 203).

The participants are further instructed that the term ability means willingness: "In the above example, Jim had the behavioral capacity to ask Jenny out for a date. Therefore, when he said that he couldn't ask her out, what he really meant was that he hadn't been willing to do so. This was to avoid feeling anxious and facing the possibility that she might turn him down." In portraying anxiety as the controller of avoidant behavior, Cahill and his colleagues are busily instilling an erroneous causal belief.

To further shape the participants' ratings, the concluding paragraph in the scenario restates the hypothesis a fourth time that in a "fear-based" activity ability exceeds willingness but in a "skill-based" activity willingness exceeds ability. This is an egregious violation of the scientific method.

Following the experimental manipulation the participants were simply asked to imagine tossing a wad of paper and interacting with a snake and to rate their ability and willingness to do so. The ratings in this pretend situation constituted the dependent measure. Despite all the talk about phobias, the undergraduate students were never tested for phobic behavior. Their high rating of ability clearly shows that this is not a phobic sample. The same experimenter presided over both the written "persuasive communication" and assessment of rating behavior. In the scenario the experimenter tells the diffident student that when he said he could not invite the student for coffee "what he really meant was that he hadn't been willing to do so." This correction of the student's alleged misjudgment creates a strong social demand for participants to provide ratings in accordance with what the experimenters want.

Under conditions in which the students are not taught the hypothesis they rated only willing to do what they believe they are able to do with a snake. This is in keeping with self-efficacy theory that, in activities involving performance demands, people's beliefs in their efficacy is a major determinant of what they are willing to do. In the trifling task the students rated willingness to try tossing the wad of paper into the basket at virtually all distances. This unusually high level of rated willingness is most likely an artifact of the trivialness of a task requiring no effort or labor. Tossing a wad of paper is no sweat. In significant activities people are not going to waste their time, effort, and resources on tasks they are sure they cannot do.

What has this "double dissociation" manipulation yielded? Not much. The students rated willingness to try tossing the wad of paper whatever the distance, regardless of whether or not they were instructed that willingness exceeds ability in a "skill task." Being repeatedly told

that in a "fear task" ability exceeds willingness eked out a slight increase in rated ability and a small drop in rated willingness to try.

Cahill and his colleagues do not provide a theory of will that specifies the nature of this psychic force, its determinants, the mechanisms through which it operates, and how one would will severely debilitated phobics to masterful functioning. Unwillingness to perform coping behavior is said to be anxiety-based. However, evidence that anxiety has no effect on avoidant behavior when perceived self-efficacy is controlled strips it of its ascribed motivator. The findings of research that Cahill et al. never cite, demonstrate that willingness to perform a fear-laden activity is governed by perceived self-efficacy not anticipatory anxiety. Using public speaking, a prevalent social anxiety, Arch (1992a, b) examined the determinants of students' willingness to deliver a public lecture to a large audience followed by a question session. They rated their anticipatory anxiety, their efficacy that they can deliver a good lecture, and their efficacy to manage perturbing thoughts and anxiety reactions in the situation. In a simultaneous multiple regression analysis, perceived task efficacy predicted willingness to deliver a lecture regardless of level of anticipatory anxiety and amount of prior experience. In addition, women's beliefs in their efficacy to manage their anxiety reactions in the situation further increased their willingness to deliver a public lecture. Anticipatory anxiety was unrelated to willingness when perceived self-efficacy is controlled.

## PRETENTIOUS GENERALIZATIONS

In the discussion section Cahill and his colleagues present sweeping generalizations based on the proclaimed import of their findings yielded by their improved rating procedure. They dismiss the negative findings that willingness mirrors perceived ability on the grounds that a rating procedure that does not teach the hypothesis suffers "methodologized limitations." They further reject the "hypothesis" that people are willing to try activities with potentially aversive aspects if they believe they are able to do them because "participants who were informed of Kirsch's hypothesis" endorsed higher levels of ability than willingness. Cahill and his colleagues appear blissfully unaware that prior instruction in a hypothesis to be tested is an unpardonable scientific violation. That people who believe in their efficacy are willing to undertake potentially aversive activities is not a "hypothesis." As shown by the large body of evidence reviewed earlier, which Cahill et al. do not cite, it is a common occurrence in everyday life. Even simple self-reflection would reveal that one often performs activities that are stressful and taxing as long as one believes one can surmount the difficulties.

The discussion continues with expansive conclusions that the “immediate implications” of the data not only call into question the self-efficacy analysis of fear-based behavior, but their theoretical analysis and “careful instructions” have general implications for self-efficacy analysis of “drug/tobacco/alcohol abstinence, condom use, weight loss, exercise” (p. 207). The rationale for the “logical extension” of this program of research is founded on the trivialized conception of ability in these domains of self-regulation. Coaching in the hypothesis to be tested under the cloak of a “disambiguating” rating procedure is not “careful instructions.” It is a scientific prohibition. However, the major points at issue are not only the seriously flawed experimentation, but the simplistic view of self-efficacy that misrepresents the construct.

## REFERENCES

- Annis, H. M., & Davis, C. S. (1989). Relapse prevention. In R. K. Hester & W. R. Miller (Eds.), *Handbook of alcoholism treatment approaches: Effective alternatives* (pp. 170–182). New York: Pergamon Press.
- Arch, E. (1992a). Affective control efficacy as a factor in willingness to participate in a public performance situation. *Psychology Reports, 71*, 1247–1250.
- Arch, E. (1992b). Sex differences in the effect of self-efficacy on willingness to participate in a performance situation. *Psychological Reports, 70*, 3–9.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122–147.
- Bandura, A. (1990). Reflections on nonability determinants of competence. In R. J. Sternberg & J. Kolligian, Jr. (Eds.), *Competence considered* (pp. 315–362). New Haven, CT: Yale University Press.
- Bandura, A. (1991). Self-regulation of motivation through anticipatory and self-reactive mechanisms. In R.A. Dienstbier (Ed.), *Perspectives on motivation: Nebraska symposium on motivation* (Vol. 38, pp. 69–164). Lincoln, NE: University of Nebraska Press.
- Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. In R. DiClemente and J. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 25–59). New York: Plenum.
- Bandura, A. (1997). *Self-Efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (1999). A sociocognitive analysis of substance abuse: An agentic perspective. *Psychological Science, 10*, 214–217.
- Bandura, A. (2004). Health promotion by social cognitive means. *Health Education & Behavior, 31*, 143–164.
- Bandura, A. (2005). The evolution of social cognitive theory. In K. G. Smith & M. A. Hitt (Eds.) *Great minds in management* (pp. 9–35). Oxford: Oxford University Press.
- Bandura, A. (2006). Guide to the construction of self-efficacy scales. In F. Pajares & T. Urdan (Eds.) *Self-efficacy beliefs of adolescents*, (Vol. 5., pp. 307–337). Greenwich, CT: Information Age Publishing.
- Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive Therapy and Research, 1*, 287–308.

- Bandura, A., Adams, N. E., & Beyer, J. (1977). Cognitive processes mediating behavioral change. *Journal of Personality and Social Psychology*, *35*, 125–139.
- Bandura, A., Adams, N. E., Hardy, A. B., & Howells, G. N. (1980). Tests of the generality of self-efficacy theory. *Cognitive Therapy and Research*, *4*, 39–66.
- Barber, J., Cooper, B. & Heather, N. (1991). The situational confidence questionnaire (Heroin). *International Journal of Addiction*, *26*, 565–75.
- Barrios, F. X., & Niehaus, J. C. (1985). The influence of smoker status, smoking history, sex, and situational variables on smokers' self-efficacy. *Addictive Behaviors*, *10*, 425–430.
- Basen-Engquist, K., & Parcel, G.S. (1992). Attitudes, norms and self-efficacy: A model of adolescents' HIV-related sexual risk behavior. *Health Education Quarterly*, *19*, 263–277.
- Brafford, L. J., & Beck, K. H. (1991). Development and validation of a condom self-efficacy scale for college students. *Journal of American College Health*, *39*, 219–225.
- Cahill, S. P., (2006, May 23). Personal Communication.
- Cahill, S.P., Gallo, L.A., Lisman, S.A., & Weinstein, A. (2006). Willing or Able? The Meanings of Self-Efficacy. *Journal of Social and Clinical Psychology*, *25*, 196–209.
- Davey, G.C.L., Jubb, M., & Cameron, C. (1996). Catastrophic worrying as a function of changes in problem-solving confidence. *Cognitive Therapy and Research*, *20*, 333–344.
- DiClemente, C. C., Fairhurst, S. K., & Piotrowski, N. A. (1995). Self-efficacy and addictive behaviors. In J. E. Maddux (Ed.), *Self-Efficacy, adaptation, and adjustment: Theory, research and application* (pp. 109–141). New York: Plenum.
- DiClemente, C. C., & Hughes, S. O. (1990). Stages of change profiles in outpatient alcoholism treatment. *Journal of Substance Abuse*, *2*, 217–235.
- Gilchrist, L. D., & Schinke, S. P. (1983). Coping with contraception: Cognitive and behavioral methods with adolescents. *Cognitive Therapy and Research*, *7*, 379–388.
- Gwaltney, C., Shiffman, S., Paty, J., Liu, K., Kassel, J., Gnys, M., & Hickox, M. (2002). Using self-efficacy judgments to predict characteristics of lapses to smoking. *Journal of Consulting and Clinical Psychology*, *70*, 1140–1149.
- Heinrich, L. B. (1993). Contraceptive self-efficacy in college women. *Journal of Adolescent Health*, *14*, 269–276.
- Jemmott, J. B., III, Jemmott, L. S., & Fong, G. T. (1992). Reductions in HIV risk-associated sexual behaviors among black male adolescents: Effects of an AIDS prevention intervention. *American Journal of Public Health*, *82*, 372–377.
- Jemmott, J. B., III, Jemmott, L. S., Spears, H., Hewitt, N., & Cruz-Collins, M. (1992). Self-efficacy, hedonistic expectancies, and condom-use intentions among inner-city black adolescent women: A social cognitive approach to AIDS risk behavior. *Journal of Adolescent Health*, *13*, 512–519.
- Kasen, S., Vaughan, R.D., & Walter, H.J. (1992). Self-efficacy for AIDS preventive behaviors among tenth grade students. *Health Education Quarterly*, *19*, 187–202.
- Kirsch, I. (1982). Efficacy expectations as response predictors: The meaning of efficacy ratings as a function of task characteristics. *Journal of Personality and Social Psychology*, *42*, 132–136.
- Kok, G., deVries, H., Mudde, A. N., & Strecher, V. J. (1991). Planned health education and the role of self-efficacy: Dutch research. *Health Education Research*, *6*, 231–238.
- Long, C.G., Hollin, C.R., & Williams, M.J. (1998). Self-efficacy, outcome, expectations, and fantasies as predictors of alcoholics' posttreatment drinking. *Substance Use & Misuse*, *33*, 2383–2402.
- Maddux, J. (Ed.) (1995). *Self-efficacy, adaptation, and adjustment: Theory, research and application*. New York: Plenum.
- Marlatt, G. A., Baer, J. S., & Quigley, L. A. (1995). Self-efficacy and addictive behavior. In A



- Bandura (Ed.), *Self-Efficacy in changing societies* (pp. 289–315). New York: Cambridge University Press.
- Marlatt, A., & Gordon, J.R. (1985). *Relapse prevention: Maintenance strategies in the treatment of addictive behaviors*. New York: Guilford Press.
- McAuley, E. (1985). Modeling and self-efficacy: A test of Bandura's model. *Journal of Sport Psychology*, 7, 283–295.
- McKusick, L., Horstman, W., & Coates, T.J. (1985). AIDS and sexual behavior reported by gay men in San Francisco. *American Journal of Public Health*, 75, 493–496.
- Meece, J. L., Wigfield, A., & Eccles, J. S. (1990). Predictors of math anxiety and its influence on young adolescents' course enrollment intentions and performance in mathematics. *Journal of Educational Psychology*, 82, 60–70.
- Nisbett, R., & Ross, L. (1980). *Human inference: Strategies and shortcomings of social personality dynamics*. New York: Ronald Press.
- O'Leary, A., Goodhart, F., Jemmott, L. S., & Boccher-Lattimore, D. (1992). Predictors of safer sexual behavior on the college campus: A social cognitive theory analysis. *Journal of American College Health*, 40, 254–263.
- Ozer, E. M., & Bandura, A. (1990). Mechanisms governing empowerment effects: A self-efficacy analysis. *Journal of Personality and Social Psychology*, 58, 472–486.
- Pajares, F., & Dixon, D. (1996, April). *Role of self-efficacy beliefs in the mathematical problem-solving of mainstreamed and self-contained students with mild disabilities*. Paper presented at the meeting of the American Educational Research Association, New York.
- Pajares, F., & Johnson, M. J. (1994). Confidence and competence in writing: The role of self-efficacy, outcome expectancy, and apprehension. *Research in the Teaching of English*, 28, 316–331.
- Pajares, F., & Miller, M. D. (1994). Role of self-efficacy and self-concept beliefs in mathematical problem solving: A path analysis. *Journal of Educational Psychology*, 86, 193–203.
- Pajares, F., & Urdan, T. (Eds.) (2006). *Self-efficacy beliefs of adolescents*, (Vol. 5.) Greenwich, CT: Information Age Publishing.
- Rehm, L. P. (1981). A self-control therapy program for treatment of depression. In J. F. Clarkin & H. Glazer (Eds.), *Depression: Behavioral and directive treatment strategies* (pp. 68–110). New York: Garland Press.
- Rist, F., & Watzl, H. (1983). Self assessment of relapse risk and assertiveness in relation to treatment outcome of female alcoholics. *Addictive Behaviors*, 8, 121–127.
- Rosenthal, D., Moore, S., & Flynn, I. (1991). Adolescent self-efficacy, self-esteem, and sexual risk-taking. *Journal of Community & Applied Social Psychology*, 1, 77–88.
- Rosenthal, R. (2006). Applying psychological research on interpersonal expectations and covert communications in classrooms, clinics, corporations, and courtrooms. In S. Donaldson, D. Berger, & K. Pezdek (Eds.), *Applied psychology: New frontiers and rewarding careers* (pp. 107–118). Mahwah, NJ: Lawrence Erlbaum.
- Rychtarik, R. G., Prue, D. M., Rapp, S. R., & King, A. C. (1992). Self-efficacy, aftercare and relapse in a treatment program for alcoholics. *Journal of Studies on Alcohol*, 53, 435–440.
- Sandhal, C., Lindberg, S., Rönnerberg, S. (1990). Efficacy expectations among alcohol-dependent parents—a Swedish version of the situational confidence questionnaire. *Alcohol and Alcoholism*, 25, 67–73.
- Schimmel, G. T. (1986). Prediction of premature termination from inpatient alcoholism treatment: An application of multidimensional measurement concepts and self-efficacy ratings (Doctoral dissertation, University of Delaware, 1985). *Dissertation Abstracts International*, 46, 4028B.

- Schoenberger, N. E., Kirsch, I., & Rosengard, C. (1991). Cognitive theories of human fear: An empirically derived integration. *Anxiety Research, 4*, 1–13.
- Schwarzer, R. (Ed.) (1992). *Self-efficacy: Thought control of action*. Washington, DC: Hemisphere.
- Shiffman, S., Balabanis, M., Paty, J., Engberg, J., Gwaltney, C., Liu, K., Gnys, M., Hickcox, M., & Paton, S. (2000). Dynamic effects of self-efficacy on smoking lapse and relapse. *Health Psychology, 19*, 315–323.
- Siegel, R. G., Galassi, J. P., & Ware, W. B. (1985). A comparison of two models for predicting mathematics performance: Social learning versus math aptitude-anxiety. *Journal of Counseling Psychology, 32*, 531–538.
- Siegel, K., Mesagno, F.P., Chen, J., & Christ, G. (1989). Factors distinguishing homosexual males practicing risky and safer sex. *Social Science Medicine, 28*, 561–569.
- Sitharthan, T. (1989). The role of efficacy expectations in the treatment of drug and alcohol problems. In B. F. Grenyer & N. Solowij (Eds.), *National Drug and Alcohol Research Centre, Monograph 7* (37–45). Kensington, Australia: University of New South Wales.
- Sitharthan, T., & Kavanagh, D. J. (1990). Role of self-efficacy in predicting outcomes from a programme for controlled drinking. *Drug and Alcohol Dependence, 27*, 87–94.
- Solomon, K. E., & Annis, H. M. (1989). Development of a scale to measure outcome expectancy in alcoholics. *Cognitive Therapy and Research, 13*, 409–421.
- Solomon, K. E., & Annis, H. M. (1990). Outcome and efficacy expectancy in the prediction of post-treatment drinking behaviour. *British Journal of Addiction, 85*, 659–666.
- Tinetti, M.E., Mendes de Leon, C.F., Doucette, J.T., & Baker, D.I. (1994). Fear of falling and fall-related efficacy in relationship to functioning among community-level elders. *Journal of Gerontology: Medical Sciences, 49*, M140–M147.
- Williams, S. L. (1995). Self-efficacy, anxiety, and phobic disorders. In J. E. Maddux (Ed.), *Self-efficacy, adaptation, and adjustment: Theory, research and application* (pp. 69–107). New York: Plenum.
- Williams, S. L., Dooseman, G., & Kleifield, E. (1984). Comparative power of guided mastery and exposure treatments for intractable phobias. *Journal of Consulting and Clinical Psychology, 52*, 505–518.
- Williams, S. L., & Rappoport, A. (1983). Cognitive treatment in the natural environment for agoraphobics. *Behavior Therapy, 14*, 299–313.
- Williams, S. L., Turner, S. M., & Peer, D. F. (1985). Guided mastery and performance desensitization treatments for severe acrophobia. *Journal of Consulting and Clinical Psychology, 53*, 237–247.
- Williams, S. L., & Watson, N. (1985). Perceived danger and perceived self-efficacy as cognitive mediators of acrophobic behavior. *Behavior Therapy, 16*, 136–146.
- Williams, S. L., & Zane, G. (1989). Guided mastery and stimulus exposure treatments for severe performance anxiety in agoraphobics. *Behaviour Research Therapy, 27*, 238–245.
- Wolpe, J. (1974). *The Practice of Behavior Therapy*. New York: Pergamon.
- Young, R. M., Oei, T. P. S., & Crook, G. M. (1991). Development of a drinking self-efficacy questionnaire. *Journal of Psychopathology and Behavioral Assessment, 13*, 1–15.
- Zimmerman, B., & Cleary, T. (2006). Adolescents' development of personal agency: The role of self-efficacy beliefs and self-regulatory skill. In F. Pajares & T. Urdan (Eds.) *Self efficacy beliefs of adolescents* (pp. 45–69). Greenwich, CT: Information Age Publishing.
- Zimmerman, B., & Schunk, D. (Ed.) (1999). *Self-regulated learning and academic achievement: Theory, research, and practice*. New York: Springer-Verlag.

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