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Invited essay

Swimming against the mainstream: the early years from chilly tributary to transformative mainstream[☆]

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Abstract

This article traces the transformative paradigm shift in the theory and practice of personal change. Within a decade, new conceptual models, analytic methodologies and modes of treatment were created. Treatments were altered in the content, locus, and agents of change. This enterprising period also witnessed a sweeping shift in the public acceptance of behaviorally oriented treatments. The present article also analyzes the evolving theorizing and applications of social cognitive theory rooted in modeling, self-regulatory, and self-efficacy mechanisms of psychosocial change. This model of change is implemented from an agentic perspective to promote personal, institutional, and society-wide changes that address some of the most urgent global problems.

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1. Introduction

Behaviorally oriented approaches evolved in an inhospitable climate. In the early 1950s, the field of personal change was dominated by the psychodynamic model of human behavior. There were several variants to this model but they shared three characteristics.

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The psychodynamicists emphasized psychic determinism as their causal model with benign neglect of environmental influences. The causes resided in the individual. Behavior was said to be regulated by an inner psychic life of animated impulses and complexes operating below the level of consciousness and disguised by defensive mental operations. Experimental efforts to test psychodynamic theory were like tilting at windmills. By invoking repression, displacement, reaction formation, and projection the same inner dynamics could produce any type of behavior, including opposite styles of responsivity. The proponents dismissed experimental studies because their core determinants, such as the oedipal complex, were not amenable to systematic variation by psychosocial means.

In the proponents' view, the theory could be tested only through clinical validation. In a letter to Freud, Rosensweig asked whether the interview content could be tainted by the therapists' influences. Freud replied that the therapist is a blank screen that does not contaminate the interview content. Conditional analyses of transactions in therapeutic sessions revealed that therapists were, in fact, shaping the content through their suggestive interpretations and selective positive and negative reactions to clients' behavior (Bandura, Lipsher, & Miller, 1960; Murray, 1956).

The second feature of the psychodynamic approach was the adoption of a quasi-disease model of deviant behavior. Behavior that diverges from prevailing social norms was viewed as a symptom of an underlying pathology. But the disease was psychic or metaphorical. Problems of living and unconventional forms of behavior got labeled as symptoms of a psychic pathology.

The third distinguishing characteristic was the heavy reliance on the interpretive interview as the vehicle of change. Through interpretive analysis, clients gain insight into their inner dynamics and develop better ways of behaving through their interactions with the therapist. Self-insight would promote change. In the early 1950s, Hullian theorists translated the psychoanalytic doctrine into learning terms to render it empirically testable. Dollard and Miller's (1950) publication, *Personality and Psychotherapy*, became the bible for the times. Most of us were imprinted on it.

The psychodynamic theories fared poorly when subjected to close empirical scrutiny. They lacked predictive power. Nor did they fare any better in therapeutic power. Outcome studies showed that it is difficult to change human behavior by talk alone. People gained all kinds of insights, but often exhibited little change in behavior. The various psychodynamic approaches had their own favored brand of insight. One could predict the types of insights and inner dynamics clients would find from knowledge of their therapists' theoretical orientation. One could also predict whether the clients would find an unconscious mind and what is in it. These interpretive therapies were essentially promoting belief conversions in the guise of self-discovery.

1.1. *Search for an alternative theory*

Following the adage that one should light a candle rather than curse the conceptual darkness, Dick Walters and I provided an alternative view of human behavior in the book *Social Learning and Personality Development* (Bandura & Walters, 1963). It underscored the influential role of modeling, self-regulation, and consequential outcomes in the acquisition of psychosocial patterns of behavior. Acquired behavior was motivated and regulated by the complex interplay of contextual, incentive, and self-regulatory influences.

During this period, I was teaching the psychotherapy courses at Stanford. I became intrigued by cases in which direct modification of problem behavior not only produced lasting improvements in people's lives, but fostered generalized benefits in nontreated areas of functioning. For example, once alcoholics were helped to gain sobriety, their lives changed dramatically for the better. I spent several months tracking down such treatments published in obscure journals housed in the musty catacombs of the Stanford library. I emerged bleary-eyed but inspired from the library catacombs to publish the article "Psychotherapy as a learning process" in the *Psychological Bulletin* (Bandura, 1961). It was organized around six basic principles of behavioral change.

The time was apparently ripe for a new direction in the conceptualization and treatment of behavior. I was flooded with reprint requests from home and abroad across specialties and disciplinary domains. Among the early pioneers in the movement who expressed interest in the article were Hans Eysenck, Joseph Wolpe, Stan Rachman, Albert Ellis, Cyril Franks, Victor Meyer, and Aubrey Yates; some were the early operant analysts, Israel Goldiamond and Ted Ayllon; others were leading psychopathologists, such as Thomas Szasz, Joseph Zubin, David Skakow, Michael Rutter, Richard Lazarus and Norman Garnezy; and still others held prominent positions at the National Institutes of Health, such as David Hamburg. Wolpe liked the article but took issue with one point. He writes:

I have read your paper in the current issue of the *Psychological Bulletin* with great interest and satisfaction. But there is one point on which I must take issue with you. You suggest that in psychotherapy based on learning theory there is, as with psychoanalysis, a tendency to form "schools". As far as I am concerned, this is not true in any doctrinaire sense for although there is always a tendency for a following to congregate around an individual, I am prepared to adopt *any* procedure that can bring about unlearning of undesirable reactions—even if such procedure has its origin in a Skinnerian laboratory!

Eysenck wondered whether the icy clinical waters in the United States would ever thaw:

In England, the winds of change are decidedly blowing in this direction at a greatly increased interest in behaviour therapy. I wonder if there is any likelihood of a similar change in the United States? Clinical psychology, of a semi-analytic kind, seems to be such a vast industry there, with such widely ramified, vested interests that it would probably take a good deal more effort there than here. Anyway, more power to the elbow of those who have seen the light!

Based on this article, Eysenck invited me to contribute a chapter to a volume he was editing, which was the first published volume on behavior therapy. The chapter kept enlarging until it outgrew the assignment. Instead, it turned into the volume, *Principles of Behavior Modification* (Bandura, 1969). It addressed the influential role of cognitive, vicarious, and self-regulatory mechanisms in human adaptation and personal and social change.

While working on these projects, I was invited to join a panel at the National Institute of Mental Health that reviewed research grant proposals. Applications on behavior therapy were routinely rejected on the grounds that they were simply removing symptoms rather than treating the root causes. I negotiated an understanding with my colleagues on the panel that the quality

of a research proposal should be judged by the theory on which it is founded not by the causal models favored by theoretical rivals. I became the primary reviewer for grant proposals addressing issues in behaviorally-oriented treatments. My first reviews and site visit reports were the programs of research conducted by Bijou and Baer at the University of Washington, and Ivar Lovaas' autism project at UCLA. Both were approved and funded. Behaviorally oriented studies were now receiving a fair hearing based on the conceptual, methodological, and social merits of the proposals.

There were other paths of involvement in the growing network of proponents of behavioral approaches. Wolpe (1958) submitted his manuscript on *Psychotherapy by Reciprocal Inhibition* to the Stanford Press. The Press sent it to me for advisory evaluation. In my supportive review, I predicted that it will have modest sales at the outset but continue to garner significant sales in years to come in the evolving field of behavior therapy. I invited Arnold Lazarus to Stanford during my sabbatical leave. This greased his relocation from South Africa. When Stunkard became chair of the Stanford Psychiatry Department, I urged him to add a distinguished research-oriented psychiatrist to his staff. We lured Stewart Agras to Stanford.

1.2. *Transformative changes*

The 1960's ushered in remarkable transformative changes in the explanation and modification of human functioning and change. *Causal analysis* shifted from unconscious psychic dynamics to transactional psychosocial dynamics. Human functioning was construed as the product of the dynamic interplay between personal, behavioral, and environmental influences. *Troublesome behavior* was viewed as divergent rather than diseased behavior. *Functional analysis* of human behavior replaced diagnostic labeling that categorized people into psychopathologic types with stigmatizing consequences. *Laboratory and controlled field studies* of the determinants of human behavior and the mechanisms through which they operate replaced content analyses of interviews. *Action oriented treatments* replaced interpretive interviews. The *modes of treatment* were altered in the content, locus, and agents of change.

With regard to content, therapeutic efforts were directed at modifying the actual problems for which people sought help rather than conversing about the problems and their psychodynamic origins. Guided mastery experiences were used to equip people with the competencies, enabling beliefs, and social resources needed to improve the quality of their lives. Efforts were directed not only at enhancing personal capabilities, but also at changing social practices that contribute to behavior problems.

With regard to the locus of change, treatments were typically carried out in the natural settings in which the problems arise so as to enhance the development, generalization, and maintenance of new modes of behavior. Some of the treatments were conducted in homes, schools, workplaces, or in the larger community. Many human problems are social not just individual. The benefits of a natural locus of change figure even more importantly in the modification of adverse practices of social systems. A major issue for a science and practice of human change is whether we confine our efforts to treating the casualties of adverse social practices or also alter the practices producing the casualties.

With regard to the agents of change, behavioral approaches did not view professionals as the exclusive dispensers of treatments. By drawing on the vast resources of talented people to

implement change programs under professional guidance, our impact was greatly expanded in scope. For example, training teachers how to promote students' positive development and reduce problem behavior yielded a continuing, multiplicative impact on students' sociocognitive development enrolled in future classes as well. Agoraphobics who have conquered their own phobia served as superb field therapists who implement structured treatments empathically and inspire and enable phobic clients through their modeled guidance and support (Bandura, Adams, Hardy, & Howells, 1980).

Treatments should be judged not only in terms of their power to effect change, but also by their social utility. Even if the psychodynamic approaches had proven highly effective, they would be of little social utility. To have to spend years in interpretive conversations would be but a tiny ripple in the vast sea of human problems requiring remedy.

The 1950 era was a time of extraordinarily, rapid change. Within a decade, the field was transformed by a major paradigm shift. New conceptual models, investigating designs, and analytic methodologies were created. New sets of periodicals were launched for the rising stream of interest. New organizations were formed for the advancement of behavioral approaches. New professional conventions and workshops spread the faith.

1.3. *Reactions to innovation*

The transformative changes followed the predictable sequence of all fruitful innovations. Outright rejection was the first reaction. Behavior therapy was regarded not only as superficial symptom removal but dangerous. It would spawn harmful symptom substitution. Psychodynamicists floated apocryphal cases to kill it off. A behavior therapist allegedly got a husband to quit grinding his teeth while sleeping, only to murder his wife the next week! This turned out to be a conceptual homicide rather than a corporal one. My repeated inquiries never produced evidence of a spousal body.

Studies showed that beneficial behavior change often had positive generalized effects. The next social reaction was qualified acceptance. It is fine for superficial problems, like bedwetting but not for serious "ego-laden" human problems.

When we developed the powerful guided mastery treatment at Stanford (Bandura, Blanchard, & Ritter, 1969), I was invited to present our program of research at the Langley Porter Clinic in San Francisco, a stronghold of psychodynamic adherents. The session began with a disparaging introduction to the effect that this young upstart will tell us seasoned analysts how to cure phobias! I explained that my host's "generous" introduction reminded me of a football contest between Iowa and Notre Dame in South Bend. Iowa scored a touchdown, which tied the score. As the player ran on the field to kick the extra point, coach Evashevski turned to his assistant coach and remarked, "*Now there goes a brave soul, a Protestant attempting a conversion before 50,000 Catholics!*"

As evidence accumulated that cognitive behavior therapy can successfully treat the full range of dysfunctional psychosocial patterns, the third phase was acceptance by conceptual reinterpretation in accord with one's cherished theory. Thus, what began as bucking the mainstream in chilly waters, within a few decades, triumphed as the thermal mainstream.

Not all the behavioral folks worshipped at the same theoretical alter. Some went the operant route as providing the best glimpse of the promised land. Others took the sociocognitive route

founded on an agentic perspective of human self-development, adaptation, and change. Conceptions of human nature have changed markedly over time. In the early theological conceptions, human nature was the manifestation of original divine design. Evolutionism shifted the conception to the shaping of human nature by selective environmental pressures acting on random mutations devoid of deliberate plans or purposes. The evolution of cognition supplanted aimless environmental selection with proactive agency. To be a sentient agent is to influence intentionally one's functioning and environmental conditions.

Social cognitive theory (Bandura, 1999, 2001) identifies four core features of human agency: intentionality, forethought, self-reactiveness, and self-reflectiveness. People form intentions that include action plans and strategies for realizing them. The temporal extension of agency involves more than future directed plans. Through forethought people set themselves goals, and anticipate likely outcomes of prospective actions to guide and motivate their efforts. Agents are not only planners and forethinkers. They are self-regulators as well. They adopt personal standards and monitor and regulate their actions by self-reactive influence. They do things that give them satisfaction and a sense of self-worth, and refrain from actions that bring self-censure. People are not only agents of actions. They are self-examiners of their own functioning. They reflect on their efficacy, the soundness of their thoughts and actions, the meaning of their pursuits, and make adjustments if necessary. The agentic capacity enables people to take a hand, individually and collectively, in shaping the character of their lives and social systems.

Vigorous battles were fought over cognitive determinants and their scientific legitimacy. Scientific advances are promoted by two kinds of theories (Nagel, 1961). One form seeks relations between directly observable events but shies away from the mechanisms subserving the observable relations. The second form focuses on the mechanisms that explain the functional relations between observable events. The self-system is not merely a conduit for environmental influences. By exercising self-influence people operate generatively and proactively, not just reactively. Operant analysts took the view that the only legitimate scientific enterprise is one that directly links observable environmental events to observable behavioral events. They contended that cognitive factors can be bypassed because they make no independent contribution to behavior.

In commenting on the issue of observability in scientific inquiry, Nagel (1961) explains that some of the most powerful theories of the natural sciences are not about factors that are "observable". Physicists, for example, have done remarkably well with atomic theory even though atoms are not given to public view.

The fight over cognitive determinants was not about the legitimacy of inner causes, but about the types of inner determinants that are favored (Bandura, 1995, 1996). For example, operant analysts increasingly place the explanatory burden on determinants inside the organism, namely the implanted history of reinforcement. The implanted history is an inferred inner cause not a directly observable one. The dispute over internal determinants is not exclusively between behaviorists and cognitivists. There is a growing rift among operant analysts about the shift of emphasis within their own conceptual framework from models of environment-based control to organism-based control (Machado, 1993).

While behaviorally oriented approaches were gaining widespread acceptance professionally through their demonstrated effectiveness, socially they were stirring up a blustery storm. The popular media were deluging the public with repugnant imagery of brainwashing and frightful

scenarios of *1984* and *Brave New World* dominated by social engineers wielding powerful methods of behavioral control. The hit movie, *A Clockwork Orange*, graphically portrayed the fiendish nature of behavior modifiers shocking people into submission. Skinner's (1971) publication, *Beyond Freedom and Dignity* alarmed the public that the application of these new psychological methods will strip people of their dignity and deprive them of their freedom. The unbomber targeted Jim McConnell at the University of Michigan as his first victim with a tirade about the evils of behavior modification. Lyndon La Rouche, who became a perennial candidate for the US presidency, branded the practitioners of behavioral approaches as "Rockerfeller Nazis", formally tried some of the leading figures through his tribunal for crimes against humanity, stormed classes at the University of New York at Stony Brook, and issued threats requiring police surveillance of the AABT convention in Chicago. As in any professional practice, there were some appalling applications of behavioral principles, especially in coercive institutional systems, that affirmed and fueled the public's fears.

At the height of this media frenzy, I began my term as president of the American Psychological Association. A responsible social science must concern itself not only with the advancement of knowledge, but with the social effects of its applications. In keeping with this dual commitment, we formed an interdisciplinary task force to examine the way in which knowledge about how to influence human behavior was used both at the individual and institutional level. The members included leading figures in the field of behavior modification (Sidney Bijou, James Holland, Leonard Krasner, Terrence Wilson), a distinguished psychiatrist representing a non-behavioral viewpoint (Jerome Frank), a philosopher who provided a broad perspective on the ethical issues involved in the application of behavior modification (Hugh Lacey), an attorney and director of the Mental Health Law Project in Washington to provide legal expertise (Paul Friedman), a law professor from the University of Arizona who wrote a major legal analysis on the use of token economies with psychiatric patients (David Wexler), and a psychologist from the National Institute of Mental Health (Stephanie Stolz) who was involved in various activities at the Institute related to the standards and ethics of psychological interventions.

Their wide-ranging analysis, which was published in the volume, *Ethical Issues in Behavior Modification* (Stolz, 1978), provided a thoughtful evaluation of existing applications and a set of standards for ethical practice that helped to dispel the frightful misconceptions propagated by the mass media. Growing applications of our knowledge for personal and social betterment not only won public acceptance, but cognitive behavior treatments were being cited as the method of choice for diverse aspects of the human condition. This fascinating Odessey involved dual transformative changes—a paradigm shift in theory and practice as well as a sweeping change in public acceptance.

2. Evolving applicability of social cognitive theory

This is but a brief glimpse of the some early events in the evolvment of cognitive behavior therapy. I now turn to the evolving applications of social cognitive theory for personal and social change. This theory of human adaptation and change drew heavily on modeling, cognitive, self-regulatory, and self-efficacy mechanisms.

2.1. *Guided mastery vehicle of change*

The initial application of social modeling was to the treatment of phobic disorders. It was further developed with the creative contribution of Ed Blanchard and Bruni Ritter, into a powerful guided mastery treatment for phobic disorders (Bandura et al., 1969). This mode of treatment relied on mastery experiences as the principle vehicle of personal change. When people avoid what they dread, they lose touch with the reality they shun. Guided mastery quickly restores reality testing in two ways. It provides disconfirming tests of phobic beliefs by convincing demonstrations that what the phobics dread are safe. Even more important, it provides confirmatory tests that phobics can exercise control over what they fear.

Intractable phobics, of course, are not about to do what they dread. Therapists must, therefore, create environmental conditions that enable phobics to succeed despite themselves. This is achieved by enlisting a variety of performance mastery aids. Threatening activities are repeatedly modeled to demonstrate coping strategies and to disconfirm people's worst fears. Intimidating tasks are reduced to graduated subtasks of easily mastered steps. Treatment is conducted in this stepwise fashion until the most intimidating activities are mastered. Joint performance with the therapist enables frightened people to do things they would refuse to do on their own. Another method for overcoming resistance is to have phobics perform the feared activity for only a short time. As they become bolder the length of engagement is extended. Protective conditions can also be introduced to weaken resistances that retard change.

Initially, therapists use whatever mastery aids are needed to restore coping behavior. As treatment progresses, supportive aids and protective controls are faded until clients manage the most intimidating activities on their own. After bold functioning is fully restored, self-directed mastery activities are arranged in which clients manage increasing challenges of the threat on their own under varying conditions. For example, those who fear bridges drive across Golden Gate bridge to Sausalito and call from a designated public pay phone number that they get there. Height phobics take the scary outdoor glass elevator to the bar atop the Fairmont hotel perched Nob Hill, and call from the public pay phone at from the bar. They can load up on the sauce for the trip down. Self-directed mastery affirms and generalizes participants' coping capabilities and builds resilience to adverse experiences.

This is a powerful treatment. It instills a robust sense of coping efficacy. It transforms attitudes toward the phobic objects from abhorrence to liking. It wipes out anxiety, biological stress reactions, and phobic behavior. The changes endure. Phobics who achieve only partial improvement with alternative modes of treatment achieve full recovery with the benefit of the guided mastery treatment regardless of the severity of their phobic dysfunctions (Bandura et al., 1969; Biran & Wilson, 1981; Thase & Moss, 1976).

The phobics were plagued by recurrent nightmares for 20 or 30 years. Guided mastery transforms dream activity and wipes out chronic nightmares. As one woman gained mastery over her snake phobia, she dreamt that the boa constrictor befriended her and was helping her to wash the dishes. Reptiles soon faded from her dreams. This was an especially striking finding given the fanciful theorizing about unconscious psychic maneuverings in which penis anxiety is allegedly repressed, displaced, and projected outward in the guise of a snake phobia (Fenichel, 1945).

Powerful treatments are typically multifaceted. The next analytic task was to evaluate the contribution of the various components to the therapeutic outcomes. In experiments with Bob

Jeffery, we demonstrated that mastery aids accelerated the rate of therapeutic change and the self-directed mastery component enhanced the generality and durability of the change (Bandura, Jeffery, & Gajdos, 1975; Bandura, Jeffery, & Wright, 1974).

The next phase in this program of research was to test the generalized utility of this mode of treatment. In an extended series of studies, Lloyd Williams (1990, 1992) showed that guided mastery worked equally well with the most incapacitating anxiety disorders, namely, agoraphobia. Guided mastery proved more powerful than exposure treatment, in which phobics repeatedly confront threatening situations without the benefit of mastery aids (Williams, Dooseman, & Kleifield, 1984; Williams & Zane, 1989).

2.2. *Unearthing of self-efficacy*

In the development of the guided mastery treatment, we focused on three fundamental processes: the power of the treatment to promote psychosocial changes; the generality or scope of the effected changes and their durability or maintenance. Having demonstrated the power of this mode of treatment on each of these evaluative dimensions, I explored a possible additional function—the power of a treatment to build resilience to adverse experiences. The process of resiliency enhancement was based on the following rationale. The capacity of an aversive experience to reinstate dysfunctions depends, in large part, on the pattern of experiences in which it is embedded rather than solely on its properties alone. A lot of neutral or positive experiences can neutralize the negative impact of an aversive event and curtail the spread of negative effects (Hoffman, 1969). For example, if after treatment, a dog phobic has no contact with dogs, an aversive encounter will quickly reinstate the phobia. But if the phobic had many neutral and positive experiences with different varieties of dogs, an aversive encounter is likely to have a circumscribed effect—avoidance of the threatening animal without phobic generalization to the other canine types.

To test this notion, after functioning was fully restored, former snake phobics did or did not have the benefit of self-directed mastery experience with different types of snakes. In follow-up assessments, the participants who received the resiliency enhancement not only maintained their therapeutic gains, but they improved in domains of functioning unrelated to the treated dysfunction. For example, after mastering their snake phobia, participants reduced their social timidity, became bolder in public speaking, expanded their competencies in different spheres of their lives, and boosted their venturesomeness.

To overcome, within a few hours of treatment, a phobic dread that had constricted and tormented their lives for 20 or 30 years, was a transformational change in their beliefs in their efficacy to exercise control over their lives. They were acting on their self-efficacy beliefs and enjoying their successes, much to their surprise.

I redirected my research efforts to gain a deeper understanding of personal efficacy. To guide this new mission, the theory addressed the key aspects of comprehensive theory of self-efficacy (Bandura, 1997). These include the origins of efficacy beliefs; their structure and function; their diverse effects; the 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.

As noted earlier, social cognitive theory is rooted in an agentic perspective (Bandura, 2001). The efficacy belief system is the foundation of human agency. Unless people believe they can

produce desired effects by their actions they have little incentive to act or to persevere in the face of difficulties. Whatever other factors serve as motivators, they are rooted in the core belief that one has the power to effect changes by one's actions.

A central question in any theory of cognitive regulation of motivation, affect, and behavior concerns the issue of causality. Do efficacy beliefs operate as causal factors in human functioning? This issue was examined by diverse experimental strategies. In each approach, self-efficacy is raised to differential levels by non-performance means. Thus, no performance information is provided for judging one's efficacy. In other strategies, the independent contribution of efficacy beliefs is evaluated after controlling for prior performance and a host of other potential contributors. Converging evidence from diverse methodologies verified that self-efficacy beliefs contribute independently to motivation and performance accomplishments (Bandura, 1977; Bandura & Locke, 2003). Perceived self-efficacy was shown to be the common pathway through which different modes of influence promote change in different spheres of functioning.

Nine large-scale meta-analyses have been conducted on findings from studies with diverse experimental and analytic methodologies applied across diverse spheres of functioning in diverse milieus with diverse populations (Boyer et al., 2000; Gully, Incalcaterra, Joshi, & Beaubien, 2002; Holden, 1991; Holden, Moncher, Schinke, & Barker, 1990; Moritz, Feltz, Fahrback, & Mack, 2000; Multon, Brown, & Lent, 1991; Sadri & Robertson, 1993; Stajkovic & Lee, 2001; Stajkovic & Luthans, 1998). The evidence from these varied lines of research verify the explanatory and predictive generality of the theory.

I reviewed the large bodies of knowledge on self-efficacy in the book: *Self Efficacy: The Exercise of Control*. It documents the centrality of efficacy beliefs in people's lives; the structure, dynamics, and functional properties of this belief system; and its diverse applications for personal and social change. These include applications to education, health, clinical dysfunctions (i.e. anxiety, phobias, depression, eating disorders, substance abuse), athletic attainments, organizational functioning, and people's collective efficacy to make social and political systems work for them to improve their lives.

There are four major ways of developing a strong sense of efficacy. The most effective one is through *mastery experiences*. Successes build a robust belief in one's efficacy. Failures undermine it. If people have only easy successes they are readily discouraged by failure. Development of a resilient sense of efficacy requires experience in overcoming obstacles through perseverant effort. Resilience is also cultivated by learning how to manage failure so it is informative rather than demoralizing.

The second way of creating and strengthening beliefs of personal efficacy is through *social modeling*. If people see others like themselves succeed by sustained effort they come to believe that they, too, have the capacity to do so. Competent models also build efficacy by conveying knowledge and skills for managing environmental demands.

Social persuasion is the third way of strengthening people's beliefs in their efficacy. If people are persuaded that they have what it takes to succeed, they exert more effort than if they harbor self-doubts and dwell on personal deficiencies when problems arise. But effective social persuaders do more than convey faith in people's capabilities. They arrange things for others in ways that bring success and avoid placing them prematurely in situations where they are likely to fail.

People also rely on their *physical and emotional states* to judge their capabilities. They read their tension, anxiety, and depression as signs of personal deficiency. In activities that require strength and stamina, they interpret fatigue and pain as indicators of low physical efficacy.

Efficacy beliefs regulate human functioning through four major processes (Bandura, 1997). They include cognitive, motivational, emotional, and choice processes. Much human behavior is regulated by forethought. Efficacy beliefs affect whether individuals think pessimistically or optimistically, self-enhancingly or self-debilitatingly. Efficacy beliefs play a central role in the self-regulation of motivation. Most human motivation is cognitively generated by goal aspirations and the material, social, and self-evaluative outcomes anticipated for difficult courses of action. People of high perceived self-efficacy set motivating goals for themselves, maintain commitment to them, expect their efforts to produce favorable results, view obstacles as surmountable and figure out ways to overcome them.

People's beliefs in their coping efficacy also affect their emotional life and how much stress, anxiety and depression they experience in threatening or disheartening situations. Those who believe they can manage threats and adversities view them as less inimical and act in ways that reduce their aversiveness or change them for the better. People have to live with a psychic environment that is largely of their own making. Many human distresses result from failures of control over perturbing thoughts. Beliefs of coping efficacy facilitate the exercise of control over perturbing and dejecting rumination. Efficacy beliefs play a key role in shaping the courses lives take by influencing the types of activities and environments people choose to get into. Advantageous destinies are shaped by selection of environments known to cultivate valued potentialities and lifestyles.

Self-efficacy is a key determinant because it affects behavior both directly and by its influence on these other determinants. As already noted, efficacy beliefs determine goals and aspirations; they shape the outcomes people expect their efforts to produce; and determine how environmental facilitators and impediments are viewed. People of low self-efficacy are easily convinced of the futility of effort in the face of impediments. Those of high self-efficacy view impediments as surmountable through perseverant effort and improvement of self-management skills.

2.3. *Sociocognitive applications founded on self-regulatory mechanisms*

People are producers of their life circumstances not just products of them. By developing self-regulatory functions people can motivate and guide their efforts in personal and social change. Another line of research that I pursued was designed to advance understanding of self-regulatory mechanisms (Bandura, 1986).

We are currently using our knowledge of self-regulation and self-efficacy mechanisms to devise self-management models with high social utility. Applications to health promotion and disease prevention is but one example. The field of health is changing from a disease model to a health model. The quality of health is heavily influenced by lifestyle habits. This enables people to exercise some control over their health. By managing their health habits, people can live longer, healthier, and retard the process of aging. To stay healthy, they must exercise, reduce dietary fat, refrain from smoking, keep blood pressure down, and develop effective ways of managing stressors. Self-management is good medicine. If the huge health benefits of the few habits were put into a pill, it would be declared a scientific milestone in the field of medicine.

Health habits are not changed by an act of will. It requires motivational and self-regulatory skills. Self-management operates through a set of psychological subfunctions. People have to learn to monitor their health behavior and the circumstances under which it occurs, and how to use proximal goals to motivate themselves and guide their behavior. They also need to learn how to create incentives for themselves, and to enlist social supports to sustain their efforts.

In collaboration with Robert DeBusk at the Stanford Medical School, we developed a self-management model combining self-regulatory principles with computer-assisted implementation (DeBusk et al., 1994). People are taught how to monitor their health behavior and to use proximal goals to motivate themselves and guide their efforts. They report the changes they are making. The computer mails personalized reports that include feedback of progress toward subgoals. The feedback also provides guides on how to manage troublesome situations. Self-efficacy ratings identify areas in which self-regulatory skills must be developed and strengthened if beneficial changes are to be achieved and maintained. A single implementer, assisted with a computerized coordinating and mailing system, provides intensive individualized training in self-management to large numbers of people.

In tests of the preventive utility of this system, employees in the workplace lowered elevated cholesterol by altering eating habits high in saturated fats (Bandura, 2002a). They achieved even larger reductions if their spouses took part in the program. The more room for dietary change, the larger the reduction in plasma cholesterol. A single nutritionist implemented the entire program at minimal cost for large numbers of employees.

Haskell used this self-management system to promote lifestyle changes in patients suffering from coronary artery disease, which places them at high risk of heart attacks (Haskell et al., 1994). At the end of four years, those receiving medical care by their physicians showed no change or they got worse. In contrast, those aided in self-management by nurse implementers achieved big reductions in risk factors. They lowered their intake of saturated fat, lost weight, lowered their bad cholesterol and raised their good cholesterol, exercised more, and increased their cardiovascular capacity. The program also altered the physical progression of the disease. Those receiving the self-management program had 47% less plaque on artery walls. They also had fewer coronary events, fewer hospitalizations, and fewer deaths.

The self-management system is well received because it is individually tailored to people's needs. It provides continuing personalized guidance that enables people to exercise control over their own change. It is a home-based program that does not require any special facilities, equipment, or group meetings plagued with high drop-out rates. It can serve large numbers of people simultaneously under the guidance of a single implementer. It is not constrained by time and place. It combines the high individualization of the clinical approach with the large-scale applicability of the public health approach. It provides valuable health-promotion services at low cost.

To enhance our contribution to human betterment, we must broaden our perspective beyond the individual level. This calls for a more ambitious, socially oriented agenda of research and practice. We can further amplify our impact by making creative use of evolving interactive technologies that expand the scope and impact of our efforts. For example, by linking the interactive aspects of our self-management model to the Internet, we can vastly expand its availability to people wherever they may live at whatever time they may choose to use it.

Psychosocial programs for health promotion will be increasingly implemented via interactive, Internet-based systems. People at risk for health problems, typically ignore preventive or remedial health services. For example, young women at risk of eating disorders resist seeking help. But they will use Internet-delivered guidance because it is readily accessible, convenient and provides a feeling of anonymity. Studies by Barr Taylor and his colleagues attest to its promise (Taylor, Winzelberg, & Celio, 2001). By this means, young women reduce dissatisfaction with their weight and body shape, alter dysfunctional attitudes, and rid themselves of disordered eating behavior.

The interactive capabilities of electronic technologies are beginning to be creatively enlisted for health promotion. A company in Silicon Valley is developing interactive video games that raise children's perceived self-efficacy and enable them to manage chronic health conditions (Lieberman & Brown, 1995).

In a video role-playing game for diabetic children, they win points depending on how well they understand the diabetic condition and regulate the diet, insulin, and blood sugar levels of two wacky diabetic pachyderms, *Packy* and *Marlon*. They set out to retrieve the food and diabetes supplies snatched by pesky enemy critters in a diabetes summer camp. To succeed, children have to boost the elephants' health by managing their diabetes as they fight off the pesky critters using their trunks as water cannons and peanut launchers. The better the children manage the meals, blood glucose, and insulin dosage to stay in the safe zone of the duo pachyderms, the more points the children win.

Children love the video game. They quickly become experts in how to manage diabetes. In assessments conducted 6 months later (Brown et al., 1977), the interactive role-playing raises the children's self-care efficacy. They talk more freely about their diabetes and their feelings about it. They adopt dietary and insulin practices to keep their blood sugar level under control. They reduce urgent doctor visits for diabetes emergencies by 77%. Control children who performed a video game unrelated to health decreased their self-care, and increased emergency doctor visits by 7%.

Asthmatic children learn how to manage their condition by helping an asthmatic dinosaur, named *Bronchiasaurus* stay strong and healthy while on a risky mission in an environment riddled with allergens. In the interactive game, children learn how to avoid asthma triggers, keep the air free of reparatory irritants, track peak flow and take medication. The video game improves knowledge about asthma, enhances perceived self-efficacy to avoid things that trigger asthma attacks, and improves use of emergency medications (Lieberman, 1997).

The weight of disease is shifting from acute to chronic maladies. The self-management of chronic diseases is another example of the use of self-regulatory and self-efficacy theory to develop cost-effective models with high social utility. Biomedical approaches are ill-suited for chronic diseases because they are devised mainly for acute illness. The treatment of chronic disease must focus on self-management of physical conditions over time.

Holman and Lorig (1992) devised a generic self-management program in which patients are taught pain control techniques, self-relaxation, and proximal goal setting combined with self-incentives as motivators to increase level of activity. Participants are also taught problem-solving self-diagnostic skills and how to take greater initiative for their health care in dealings with health personnel. These skills are developed through modeling of self-management skills, guided mastery practices, and informative feedback.

In the self-management of arthritis, the program is implemented in groups in community settings by leaders who lead active lives despite their arthritis. A 4-year follow-up with arthritic patients reveals that it retards the biological progression of the disease, raises perceived self-efficacy, reduces pain, markedly decreases the use of medical services by 43%, and improves the quality of life. Both the baseline self-efficacy beliefs and the self-efficacy beliefs instilled by the self-management program predict the health benefits four years later.

2.4. *Macrosocial applications*

Social cognitive theory is also being applied worldwide to address some of the most urgent global problems (Bandura, 2002a). They include soaring population growth that is wreaking ecological havoc, pandemic transmissions of AIDS, and gender inequalities that diminish the quality of life and impede national development. Social modeling is not only an important component in most modes of change but an essential one. It shortcuts the tortuous process of competency development. The revolutionary advances in the communications technologies have vastly expanded the power of symbolic modeling. In modern day life, the electronic media, feeding off the communications satellites, are shaping lifestyles worldwide, transforming institutional practices, and serving as a major vehicle of sociopolitical change (Bandura, 2002b; Braithwaite, 1994).

Symbolic modeling is readily applicable to macrosocial applications through creative use of the electronic media. Achieving large-scale change requires three complementary component models. The first component is a sound *theoretical model*. It specifies the determinants of psychosocial change and the mechanisms through which they produce their effects. This knowledge provides the guiding principles. The second component is a *translational and implementational model*. It converts theoretical principles into an innovative operational model that specifies the content, strategies of change, and their mode of implementation. We profit little from our successes in psychology because we lack effective diffusion models. The third component is a *social diffusion model* on how to promote adoption of psychosocial programs in diverse cultural milieus. We construct theories and clarify how they work. But we do not profit from our successes because we fail to develop effective translational and social diffusion models.

In my earlier life, I conducted research on the power of social modeling. Sabido (1981, 2002), a distinguished dramatist, creatively translated the modeling principles from the Bobo doll experiments into engrossing serial dramas to foster society-wide changes. The studies of aggressive modeling were conducted over 40 years ago. But the Bobo doll continues to follow me wherever I go. The photographs are published in every introductory psychology text and virtually every undergraduate enrolls in introductory psychology. I recently checked into a Washington hotel only to have the clerk at the registration desk asked, “*Did you do the Bobo doll experiment?*” I explained that “*I am afraid that will be my legacy.*” He replied, “*Hell, that deserves an upgrade. I will put you in a suite in the quiet part of the hotel.*” So there are some benefits to the wide exposure.

Social cognitive theory provided the theoretical model for the global applications. Sabido created the translational and implementation model based on the sociocognitive modeling principles. Culturally admired television models exhibit the beneficial styles of behavior. Social attraction increases the impact of modeling influences. Characters representing different seg-

ments of the viewing population are shown adopting the beneficial attitudes and behavior patterns. Seeing people similar to oneself succeed enhances the power of modeling. The episodes include positive models exhibiting beneficial lifestyles, negative models exhibiting detrimental lifestyles, and transitional models changing from detrimental to beneficial styles of behavior. Contrasting modeling highlights the personal and social effects of different lifestyles. Viewers draw inspiration from seeing others change their lives for the better. Vicarious motivators, in the form of the benefits of favorable practices and the costs of detrimental ones, are vividly depicted. Depicted benefits provide incentives for change. Melodramatic and other emotional devices are used to sustain high attentional involvement in the dramatic presentations. It is of limited value to motivate people for change if they do not have the needed resources and environmental supports to realize those changes. Environmental guides and supports are therefore provided to expand and sustain the changes promoted by the media. Epilogues provide contact information to relevant community services and support groups.

The dramatic serials are not just fanciful stories. Rather, they are portrayals of the people's own daily lives. The serials dramatize the everyday problems people struggle with, model solutions to them, and provide people with incentives and strategies for bettering their lives. Because of the authenticity of the portrayals, the characters are ones that viewers relate to and strongly identify with. The storylines model family planning, women's equality, environmental conservation, AIDS prevention, and a variety of life skills. The productions inform, enable, motivate, and guide viewers for personal and social change. They help viewers to see a better life and enable them to take steps to achieve it. Hundreds of episodes get people deeply involved in the lifestyle changes being modeled.

Population Communications International serves as the diffusion system. It tailors the media productions to fit different cultural circumstances, provides enabling guidance and the technical and financial resources needed to achieve success. Worldwide applications of this creative format in Africa, Asia, and Latin America are enhancing people's efficacy to exercise better control over their lives enhancing the status of women, and lowering the rates of childbearing (Bandura, 2002a; Brown & Cody, 1991; Singhal & Rogers, 1989; Vaughan, Rogers, & Swalehe, 1995). A controlled study in Tanzania compared changes in family planning and contraception use in half the country that received a radio dramatic series with the rest of the country that did not. The radio series significantly increased perceived efficacy to exercise control over family size. Families in the broadcast area adopted family planning and contraceptive methods at a higher rate, which was accompanied by greater fertility decline without any change in socioeconomic conditions (Vaughan, 2004).

Some of the story lines centered on safer sexual practices to prevent the spread of AIDS, where infection rates are high among long-distance truckers and prostitutes at truck stops. The National AIDS Control Program distributed considerably more condoms in the control region than in the broadcast region. Those in the broadcast area also reduced the number of sexual partners. The greater the exposure to the modeled patterns, the stronger the effects on perceived efficacy to control family size and risky sexual practices. These effects were replicated when the dramatic serial was later broadcast in the control region.

Social systems and their practices are created by human activity and are, therefore, modifiable by collective action. The serial drama in China was aimed at altering discriminatory gender norms and practices in the society. The dramatizations graphically portray the tragedy and

injustice of social practices that force women into arranged marriages they do not want and bearing baby girls who are culturally devalued. Viewers are inspired and strengthened by the determination and courage of female characters who challenge the subordinate status of women, and who strive to change the detrimental cultural practices. The gender inequity themes seek to raise the valuation of women and expand enabling opportunities for them to become active participants in the social and economic life of their society.

3. Concluding remarks

The present article traces the evolution of cognitive behavior therapy from a chilly tributary to the thermal mainstream. It also recounts the evolving broadening and extension of social cognitive theory and practice. The value of a psychological theory is judged by three criteria. It must have explanatory power, predictive power, and, in the final analysis, it must demonstrate operative power to improve the human condition. Well-founded theory provides solutions to human problems. This brief retrospective report addresses some of the facets of an agentic sociocognitive approach to human understanding and betterment, and documents some of the applications of this theory at both individual and macrosocial levels.

I owe much to my creative collaborators in this Odyssey for my being here today for this *Lifetime Achievement Award*. It is a memorable road we have traveled together. Among the voyagers in this venture who lightened my labors and enriched my work are Nancy Adams, Ed Blanchard, Jerry Davison, Donna Gelfand, Bob Jeffrey, Mike Mahoney, Bruni Ritter, Ted Rosenthal, Dick Suinn, Lloyd Williams, and Toni Zeis. Terry Wilson, a second generation fellow traveler, was also very much a part of this supporting cast. They have been honored for their achievements in their own right.

This occasion affords me the opportunity to acknowledge my indebtedness to them and to thank them for the gift of their friendship. In the eloquent words of Yeats:

Ask where my glory most begins and ends
And say my glory was I had such friends.

As you all go on to shape the future of this ever transforming Odyssey, may the efficacy force be with you.

References

- Bandura, A. (1961). Psychotherapy as a learning process. *Psychological Bulletin*, 58, 143–159.
- Bandura, A. (1969). *Principles of behavior modification*. New York: Holt, Rinehart & Winston.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1995). Comments on the crusade against the causal efficacy of human thought. *Journal of Behavior Therapy and Experimental Psychiatry*, 26, 179–190.
- Bandura, A. (1996). Ontological and epistemological terrains revisited. *Journal of Behavior Therapy and Experimental Psychiatry*, 27, 323–345.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: Freeman.

- Bandura, A. (2001). Social cognitive theory: an agentic perspective. *Annual review of psychology*, Vol. 52. (pp. 1–26). Palo Alto: Annual Reviews, Inc.
- Bandura, A. (2002a). Environmental sustainability by sociocognitive deceleration of population growth. In Schmuck, & W. Schultz (Eds.), *The psychology of sustainable development* (pp. 209–238). Kluwer: Dordrecht, The Netherlands.
- Bandura, A. (2002b). Growing primacy of human agency in adaptation and change in the electronic era. *European Psychologist*, 7, 2–16.
- 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.
- Bandura, A., Blanchard, E. B., & Ritter, B. (1969). Relative efficacy of desensitization and modeling approaches for inducing behavioral, affective, and attitudinal changes. *Journal of Personality and Social Psychology*, 13, 173–199.
- Bandura, A., Jeffery, R. W., & Gajdos, E. (1975). Generalizing change through participant modeling with self-directed mastery. *Behaviour Research and Therapy*, 13, 141–152.
- Bandura, A., Jeffery, R. W., & Wright, C. L. (1974). Efficacy of participant modeling as a function of response induction aids. *Journal of Abnormal Psychology*, 83, 56–64.
- Bandura, A., Lipsher, D. H., & Miller, P. E. (1960). Psychotherapists' approach-avoidance reactions to patients' expression of hostility. *Journal of Consulting Psychology*, 24, 1–8.
- Bandura, A., & Locke, E. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, 88, 87–99.
- Bandura, A., & Walters, R. H. (1963). *Social learning and personality development*. New York: Holt, Rinehart & Winston.
- Biran, M., & Wilson, G. T. (1981). Treatment of phobic disorders using cognitive and exposure methods: a self-efficacy analysis. *Journal of Counseling and Clinical Psychology*, 49, 886–899.
- Boyer, D. A., Zollo, J. S., Thompson, C. M., Vancouver, J. B., Shewring, K., & Sims, E. (2000). *A quantitative review of the effects of manipulated self-efficacy on performance*. Poster session presented at the annual meeting of the American Psychological Society, Miami, FL.
- Braithwaite, J. (1994). A sociology of modeling and the politics of empowerment. *British Journal of Sociology*, 45, 445–479.
- Brown, W. J., & Cody, M. J. (1991). Effects of a prosocial television soap opera in promoting women's status. *Human Communication Research*, 18, 114–142.
- Brown, S. J., Lieberman, D. A., Gemeny, B. A., Fan, Y. C., Wilson, D. M., & Pasta, D. J. (1977). Educational video game for juvenile diabetes care: results of a controlled trial. *Medical Informatics*, 22, 77–89.
- DeBusk, R. F., Miller, N. H., Superko, H. R., Dennis, C. A., Thomas, R. J., Lew, H. T., Berger III, W. E., Heller, R. S., Rompf, J., Gee, D., Kraemer, H. C., Bandura, A., Ghandour, G., Clark, M., Shah, R. V., Fisher, L., & Taylor, C. B. (1994). A case-management system for coronary risk factor modification after acute myocardial infarction. *Annals of Internal Medicine*, 120, 721–729.
- Dollard, J., & Miller, N. E. (1950). *Personality and psychotherapy*. New York: McGraw-Hill.
- Fenichel, O. (1945). *The psychoanalytic theory of neurosis*. New York: Norton.
- Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology*, 87, 819–832.
- Haskell, W. L., Alderman, E. L., Fair, J. M., Maron, D. J., Mackey, S. F., Superko, H. R., Williams, P. T., Johnstone, I. M., Champagne, M. A., Krauss, R. M., & Farquhar, J. W. (1994). Effects of intensive multiple risk factor reduction on coronary atherosclerosis and clinical cardiac events in men and women with coronary artery disease. *Circulation*, 89, 975–990.
- Hoffman, H. S. (1969). Stimulus factors in conditioned suppression. In B. A. Campbell, & R. M. Church (Eds.), *Punishment and aversive behavior* (pp. 185–234). New York: Appleton-Century-Crofts.
- Holden, G. (1991). The relationship of self-efficacy appraisals to subsequent health related outcomes: a meta-analysis. *Social Work in Health Care*, 16, 53–93.
- Holden, G., Moncher, M. S., Schinke, S. P., & Barker, K. M. (1990). Self-efficacy of children and adolescents: a meta-analysis. *Psychological Reports*, 66, 1044–1046.

- Holman, H., & Lorig, K. (1992). Perceived self-efficacy in self-management of chronic disease. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action* (pp. 305–323). Washington, DC: Hemisphere.
- Lieberman, D. A. (1997). Interactive video games for health promotion: effects on knowledge, self-efficacy, social support, and health. In R. L. Street, W. R. Gold, & T. Manning (Eds.), *Health promotion and interactive technology: Theoretical applications and future directions* (pp. 103–120). Hillsdale, NJ: Lawrence Erlbaum.
- Lieberman, D. A., & Brown, S. J. (1995). Designing interactive video games for children's health education. In K. Morgan, R. M. Satava, H. B. Sieburg, R. Mattheus, & J. P. Christensen (Eds.), *Interactive technology and the new paradigm for healthcare* (pp. 201–210). Amsterdam: IOS Press and Ohmsha.
- Machado, A. (1993). Internal states: necessary but not sufficient. *Journal of Experimental Analysis of Behavior*, 60, 469–472.
- Moritz, S. E., Feltz, D. L., Fahrbach, K. R., & Mack, D. E. (2000). The relation of self-efficacy measures to sport performance: a meta-analytic review. *Research Quarterly for Exercise and Sport*, 71, 280–294.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: a meta-analytic investigation. *Journal of Counseling Psychology*, 38, 30–38.
- Murray, E. J. (1956). A content-analysis method for studying psychotherapy. *Psychological Monographs*, 70(13, Whole No. 420).
- Nagel, E. (1961). *The structure of science*. New York: Harcourt, Brace and World.
- Sabido, M. (1981). *Towards the social use of soap operas*. Mexico City, Mexico: Institute for Communication Research.
- Sabido, M. (2002). *El tono [The tone]* Mexico City: Universidad Nacional Autonoma de Mexico.
- Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behavior: a review and meta-analysis. *Applied Psychology: An International Review*, 42, 139–152.
- Singhal, A., & Rogers, E. M. (1989). Pro-social television for development in India. In R. E. Rice, & C. K. Atkin (Eds.), *Public communication campaigns* (2nd ed.) (pp. 331–350). Newbury Park, CA: Sage.
- Skinner, B. F. (1971). *Beyond freedom and dignity*. New York: Knopf.
- Stajkovic, A. D., & Lee, D. S. (2001). *A meta-analysis of the relationship between collective efficacy and group performance*. Paper presented at the National Academy of Management meeting, August, 2001, Washington, DC.
- Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: a meta-analysis. *Psychological Bulletin*, 124, 240–261.
- Stolz, S. B. (1978). *Ethical issues in behavior modification*. San Francisco: Jossey-Bass.
- Taylor, C. B., Winzelberg, A., & Celio, A. (2001). Use of interactive media to prevent eating disorders. In Striegel-Moor, & L. Smolak (Eds.), *Eating disorders: New direction for research and practice* (pp. 255–270). Washington, DC: American Psychological Association.
- Thase, M. E., & Moss, M. K. (1976). The relative efficacy of covert modeling procedures and guided participant modeling on the reduction of avoidance behavior. *Journal of Behavior Therapy and Experimental Psychiatry*, 7, 7–12.
- Vaughan, P. W., Rogers, E. M., & Swalehe, R. M. A. (1995). *The effects of "Twende Na Wakati," an entertainment-education radio soap opera for family planning and HIV/AIDS prevention in Tanzania*. Unpublished manuscript, University of New Mexico, Albuquerque.
- Vaughan, P. W. (2004) The onset of fertility transition in Tanzanis during the 1990's: the role of two entertainment-education radio dramas. Submitted for publication.
- 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., & Zane, G. (1989). Guided mastery and stimulus exposure treatments for severe performance anxiety in agoraphobics. *Behaviour Research Therapy*, 27, 238–245.
- Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition*. Stanford: Stanford University Press.