ENABLING THE SOMATIZING PATIENT TO EXIT THE SOMATIC CLOSET: A HIGH-RISK MODEL

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Problems in establishing a therapeutic alliance make somatizing patients poor candidates for psychotherapy. A logical analysis is presented of the conspiracy of silence between the somatizing patient, the medical doctor, and the health insurance industry regarding the psychosocial factors contributing to somatization. Alternatives are sought to repeated biomedical tests and therapies that are clinically unproductive and iatrogenic. Two psychophysiological pathways are proposed that are promising to reduce the distance between the medical doctors' and the psychologists' procedures. The new profile of illness has produced a paradigm shift with implications for an expansion of the definition of the word "physician".

The major obstacle to the use of psychotherapy with the somatizer is the impossibility of establishing a working or therapeutic alliance (Greenson, 1967; Zettel, 1956) with persons who really believe that they have walked into the wrong office. Patients believe (Giannetti, 1987) that they should be taking their cars (bodies) to a mechanic (a physician) and not a monk (a psychotherapist).

The basic problem is that psychological diagnostic tests and interventions have zero face validity (Anastasi, 1961) for the somatizer, who is committed to a biomedical definition of the physical symptoms. The patient will not come to or remain in the psychotherapist's office unless the monk rather quickly begins to talk, dress, and act like a mechanic, at least until the therapeutic alliance is established. This article describes two procedures, the High Risk Model (Wickramasekara, 1979, 1983, 1984, 1986, 1987, 1988) and the Trojan Horse Procedure (Wickramasekara, 1979, 1983, 1988, in press) that appear to increase the face validity of psychological tests and therapies for somatic symptoms. This increased face validity is accomplished by reducing the perceived discontinuity between the physician's and the psychologist's procedures.

Somatizers are people who transduce psychosocial conflicts into somatic complaints like chronic headaches, irritable bowel and chronic low back pain. These symptoms are among the most common physical complaints seen by primary care physicians in the U.S. The patients present chronic and recurrent physical complaints in the absence of serious or identifiable pathophysiology (Barsky and Klerman, 1983; Lowy, 1975; Houpt et al., 1980) or obvious psychopathology (Jencks, 1985). It has been estimated that over 50% of patients seen by primary care physicians in the U.S. today are somatizers (Barsky & Klerman, 1983; Brown et al., 1971; Garfield et al., 1976; Jencks, 1985).

Clearly complex psychosocial changes related to family, marriage, and work, plus intrapsychic conflicts are contributing to the rate of somatization today. There is evidence that this large subset of somatizing patients significantly overutilizes medical services (Cummings, 1977; Mumford et al., 1984; VandenBos & DeLeon, 1988; Yates, 1984) contributing through repeated hospitalizations, diagnostic tests, and medications to the rapidly escalating cost of health care. Health care is today almost 11% of the gross national product (Cohen, 1985). Primary care physicians typically palliate these patients' chronic symptoms with

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pain pills, tranquilizers, and sleeping pills and seldom treat the underlying psychosocial etiology of their somatic complaints. The patients often become a continuing, inappropriate, and massive drain on the expensive and precious medical resources of this country. Chronic medical palliation (Orleans et al., 1985) can and often does develop new problems of chemical and polysurgical addiction and other negative physiological and psychological side effects (Arnonoff, 1985; Cummings, 1979).

Today we distinguish psychophysiological or functional somatic disorders from physically based disorders almost entirely by excluding physical explanations of the patient's somatic complaints. One reason this process of diagnosis by exclusion is practiced is because there has been little systematic effort (Sternebach, 1966) devoted to the identification of specific experimentally testable positive psychological/psychophysiological findings that can account for physical symptoms independent of physical findings. The identification of such high-risk psychophysiological variables (Wickramasekera, 1979, 1983, 1984, 1986, 1987, 1988) would have profound implications for diagnostic practice as well as for therapy and for primary prevention (Friedman & Booth-Kewley, 1987). For example, the presence of positive psychological findings in a patient can help the physician to inhibit a tendency to submit the patient to extensive physical investigations that could increase the probability of identifying and then treating a false positive physical etiology and producing an iatrogenic condition. An example of this would be unnecessary back surgery for benign and self-limiting back pain (Fordyce, 1980).

Basing the diagnosis of psychophysiological disorders mainly on the exclusion of physical findings is not a rational procedure because it is possible that the appropriate physical investigation was not done (Hall, 1980). In fact, this approach implies that patients with physical complaints who lack positive and independent psychophysiological findings should receive the most complete and careful physical investigations. Some physical complaints (e.g., headaches, backaches) can be accounted for either by positive physical findings (e.g., a brain tumor or a herniated disc) or, alternatively, by positive psychophysiological findings such as functionally based high levels of muscle tension (Flor, Turk & Birbaumer, 1985) and/or neuroticism (Costa & McCrae, 1985).

Why do somatizing patients remain doctor shopping in the medical/health care system when in fact they are treated ineffectively, expensively, and often receive iatrogenic injury from tests, therapies, and hospitalizations (Arnonoff, 1985; Benson, 1979)? Because there is often a tacit conspiracy of silence between the patient, the physician, and the health insurance industry regarding the psychosocial factors that can cause or amplify their somatic disorders and diseases.

The Patient

There are several plausible reasons for the tacit conspiracy of silence on the patient’s part. The patient prefers to have a medical diagnosis rather than a psychiatric or psychological diagnosis. A medical diagnosis avoids the stigma of mental illness and the consequent negative social and vocational consequences. A medical diagnosis often reduces the cost (the deductible) to the patient of tests and treatments. Medical diagnoses, unlike psychiatric diagnoses, are more readily and richly reimbursable. Hence, the presentation of psychosocial conflicts as physical symptoms is reinforced by potent personal, social, vocational, and financial consequences. The somatic packaging of psychosocial conflicts increases their reimbursability and social acceptance.

The Physician

There are several complex and plausible reasons for the tacit conspiracy of silence on the part of the primary care physician. First, since these patients represent approximately 50% of a primary care physician's practice, one cannot reasonably expect to refer 50% of patients and reduce a gross income by approximately 50%.

Second, in spite of repeated negative medical tests and potent therapies the patient still continues to have somatic complaints like headache, chest pain, GI distress, backache and so on. Medical reassurance fails to durably reduce the intensity and frequency of the somatizing patient's physical complaints. In this frustrating situation the conscientious physician may question his own medical competence and feel that he has "missed" some moderate or serious pathophysiology because his patient's physical symptoms persist. This concern about "missing something" may be reinforced by the physician's fear of a malpractice lawsuit that could ruin him (D'Leon and Borreliz, 1978). The physician's fear of "missing something," malpractice lawsuits, and the patient's insistence on a medical definition and solution to his somatic
complaints are potent incentives to order a new series of tests, more specialist consultations, more hospitalizations, and new medical treatments. It is also known that approximately 30% of patients with psychiatric or psychological problems may have diagnosable pathophysiology (Hall, 1980).

Third, the average primary care physician's training and confidence in his psychosocial skills is not extensive (Houpt et al., 1980; Jencks, 1985; Orleans et al., 1985). In fact, psychiatric training is often the smallest, weakest, and least popular component of a physician's medical education (Light, 1980; Nielson & Eaton, 1981). As a previous editor of the New England Journal of Medicine has said (Ingelfinger, 1978), a physician's education and practice should stress the diagnosis and therapy of acute serious life threatening conditions. Psychosocial factors are regarded as trivial and transient in the biomedical model (Engel, 1977). Psychosocial and behavioral factors contribute mainly to chronic disease, and these factors are, in fact, regarded as epiphenomena in the biomedical model of acute disease in which physicians are primarily educated (Engel, 1977). Because of conceptual bias, lack of interest, and poor psychosocial investigative skills (Jencks, 1985; Orleans et al., 1985) the primary care physician is very likely to ignore or to "miss" important psychosocial risk factors that can cause or amplify chronic somatic complaints.

A fourth reason is the current lack of empirically well-validated psychosocial risk factors that can independently account for somatic complaints in the absence of pathophysiology. In fact, if such documented psychosocial risk factors existed they would a) substantially reduce the conscientious physician's legal vulnerability when he or she refers a somatizing patient to a clinical psychologist. Such psychosocial risk factors could also b) significantly increase the physician's personal confidence that the puzzling patient is embarked on a rational course of psychosocial investigation and specific therapy. I have proposed such a comprehensive set of psychosocial risk factors called the High Risk Model (Wickramasekera, 1979, 1983, 1986, 1988).

The Health Insurance Company

Why is the health insurance company likely to agree to this tacit conspiracy of silence regarding the psychosocial factors in somatization? There are several reasons. First, medical doctors, unlike psychologists, are well represented on the policy-making boards of health insurance companies. It is unlikely that questions concerning the psychosocial component of the somatizing patient's problem will be raised by physicians because of the constraints of their education and because such questions could jeopardize 50% of their income from a frustrating but reliably lucrative patient source. Second, in recent years there has been a proliferation of heterogeneous mental health providers and they are all clamoring for insurance reimbursement. This proliferation of mental health service providers causes the health insurance companies confusion about the qualifications of legitimate providers and economic distress over the increasing number of providers to be "fed" from the shrinking mental health dollar.

Hence, there are clearly powerful financial, social, legal, and personal-psychological reasons for the patient, the physician, and the health insurance industry to maintain a tacit psychological silence regarding the psychosocial factors that contribute to somatization.

The Need to Explore Alternatives to Further Biomedical Investigations

Because of the ineffectiveness, high costs, and health risks associated with some repeated medical investigations (Frazier & Hiatt, 1978; Relman, 1980; Tancredi & Barondess, 1978) and therapies of the somatizer (Barsky & Klerman, 1983) there is a real need for a credible and face-saving rationale for the physician and the patient to call a halt to more medical investigations. Such a rationale will at least have to include the following components: 1) There is a need to establish that some serious undiagnosed pathophysiology is very unlikely in a specific case. A careful history, physical, and appropriate medical tests plus specialist consultations can establish this conviction. And even if there are positive or borderline physical findings the physician knows that positive physical findings alone cannot account for clinical symptoms. For example, degenerative diseases of the spine are considered to be a primary cause of chronic back pain (Flor & Turk, 1984). Specific postulated degenerative mechanisms include disc hernia, spondylosis, osteoarthritis, transitional vertebrae, and so on. Schmorl & Junghanns (1932) in their classic autopsy studies of 4,353 spines found that by age 50, 50% of the population have degenerative changes in the spine. 70% of the population show degenerative changes by age 60, and 90% by age 70. X-ray studies of the general population confirm
the above figures (Hult, 1954). Fifty percent of the population at age 50 do not complain of chronic low back pain. In fact, Magora & Schwartz (1980) found that single-disc degeneration occurs more frequently in people who have never complained of back pain than in those who have complained of it. Nor does empirical evidence support other postulated pain mechanisms (e.g., inflammatory, structural, traumatic, muscular, etc.) as either essential or sufficient conditions for the complaint of chronic low back pain (Flor & Turk, 1984). These data suggest that pathophysiology may be neither an essential nor sufficient condition to present the complaint of chronic back pain.

2) But because the patient’s somatic symptoms persist, there is a need to empirically document the fact that an alternative set of psychosocial factors can account for this patient’s somatic symptoms in the absence of any pathophysiology. And that alteration of these psychosocial factors is reliably associated with the remission of somatic symptoms. Positive psychosocial test findings can provide the physician with credible independent confirmation of his original judgment (based on history, physical, and negative laboratory tests) that not only has he “missed” serious pathophysiology but that there is, in fact, psychosocial test evidence that confirms his clinical intuition. Sir William Osler’s statement, “Sometimes it is more important to know what kind of patient has a disease, than what kind of disease the patient has.,” (Straus, 1968, p. 3) is relevant to this point. The High Risk Model operationalizes Osler’s intuition in a model that is both logical and has some empirical support.

The High Risk Model

The High Risk Model has three components called predisposers, triggers, and buffers. The three predisposing personality variables are a) very high or very low hypnotic ability, b) catastrophizing cognitive habits (Ellis, 1962), and c) negative affectivity (Costa & McCrae, 1985; Watson & Clark, 1984; Watson & Tellegen, 1985) or neuroticism (Eysenck, 1968). The two triggering situational variables are major life change (Holmes & Rahe, 1967) and/or an accumulation of minor hassles (Kanner, Coyne, Schaefer & Lazarus, 1981). The two buffering variables are the availability and use of support systems (Cohen and Wills, 1985; Sarason et al., 1983) and coping skills (Argyle, 1981; Rosenbaum, 1980). The buffering variables reduce the probability that an increase in the triggering variables will be associated with the onset of somatic or psychological symptoms. The predisposing variables increase the probability that the triggering variables can be associated with the onset of somatic or psychological symptoms. A combination of these three predisposing, triggering, and buffering variables can account for the bulk of the variance in predicting the onset and stability of clinical symptoms (see Fig. 1).

Hypnotic Ability

The first predisposing variable is hypnotic ability (Barber, 1969; Hilgard, 1965). People of high hypnotic ability are hypersensitive and demonstrate superior acquisition in the operant and respondent learning situations (Das, 1958a, b; King & McDonald, 1976; Webb, 1962; Weiss et al., 1960; Wickramasekera, 1970) and sometimes they may inadvertently acquire maladaptive psychophysiological responses (e.g., pain, anxiety, and phobic behaviors).

People of high hypnotic ability can voluntarily induce hallucinatory perceptions in all (pain, touch, taste, smell, vision, etc.) sensory modalities (Barber, 1969; Hilgard, 1965) and these false perceptions may be sustained inadvertently by primary or secondary reinforcement mechanisms.

Even people of moderate or low hypnotic ability, under conditions (e.g., the very low (e.g., hypnagogic or hypnopompic) or very high physiological arousal induced by auto or industrial accidents, military and sexual trauma) that temporarily increase suggestibility (Banyai & Hilgard, 1976; Edmonston, 1981; Engstrom, 1976; Gur, 1974; Wickramasekera, 1971, 1977) may become more vulnerable to maladaptive unconscious cognitive learning (Kihlstrom, 1987) that can have negative autonomic nervous system consequences (Wickramasekera, 1987, 1988). Un-
Factors That Will Attenuate Relationship Between Stress And Symptoms

- 1. High Social Support
   2. High Satisfaction With Social Support
   3. High Coping Skills

Density Of
1) Major Life Changes -----> Mental or Physical Symptoms or
2) Minor Hassles (Micro-stressors)

Factors That Will Potentiate Relationship Between Stress And Symptoms

+ 1. High or Low Hypnotic Ability.
   2. High Catastrophizing
   3. High Neuroticism

Figure 1.

conscious cognitive learning which can occur both in and out of hypnosis is often associated with source amnesia (Kihlstrom, 1987) that can be the basis of numerous common psychophysiological symptoms (muscular and vascular headaches, chronic low back pain, whiplash, cervical pain, peptic ulcers, cardiac neurosis, etc.) Distortions that can occur in the perception of time, person, and place during trauma may enhance the probability of state-specific maladaptive autonomic learning (Wickramasekera, 1987, 1988) that is resistant to extinction in the normal states of consciousness in which psychotherapy typically occurs.

People who are very low on hypnotic ability tend to be hyposensitive to learned signals of psychological or physiological distress and tend to deny the role of psychological variables in physical distress (Frankel et al., 1977; Wickramasekera, 1979, 1986). Hence they delay investigating their symptoms and limit the investigation to medical procedures. Consequently lows are more likely to present serious pathophysiology. People who are high on hypnotic ability are predicted under stress to develop both somatic and psychological symptoms and they will present these symptoms in both medical and psychiatric therapy settings. But people who are low in hypnotic ability are predicted to develop primarily or exclusively somatic symptoms and they will present them only in medical settings. Hypnotic ability is today measured with tests of known validity and reliability (Barber, 1969; Hilgard, 1965; Kihlstrom, 1985)
and has been found to be a stable behavioral variable (Perry, 1977) that appears to be partly genetically based (Morgan, 1973; Morgan et al., 1970).

Catastrophizing

The second predisposing variable that predisposes to symptoms like anxiety and pain is learned catastrophizing (Brown, 1979; Chaves & Brown, 1978; Ellis, 1962; Spanos et al., 1981). It is probably acquired on the basis of observational learning (Bandura, 1969). Catastrophizing can be defined as an overlearned tendency to become cognitively absorbed in automatic negative anticipations and negative self-statements (“I can’t stand this.” “This is horrible.” etc.) that keep attentional focus on the aversive aspects of symptoms, their consequences, and antecedents. Catastrophizing cognitively over-amplifies the aversive properties of even minimally aversive sensory cues of conditioned or unconditioned stimuli causing an upward spiral of panic, sympathetic nervous system hyperactivity, muscle contraction (Osterweiss et al., 1987), and amplified pain.

Neuroticism/Negative Affectivity

The third predisposing personality variable is high or very low neuroticism or negative affectivity (NA). This is a self-report dimension of personality that is found in people who are more likely to report negative emotions and distress across time, cultures and situations independent of objective stress (Watson & Tellegen, 1985). It has been shown to be systematically related to the number of somatic complaints people present independent of age (Costa & McCrae, 1985). A subset of people who are very low on neuroticism but who also score high on the need for social approval are also at greater risk for somatization (Linden et al., 1986). The low neuroticism but high social approval subset are at risk for somatization because they overuse repression and denial mechanisms. Unlike catastrophizing, neuroticism is believed to be partly genetically based (Shields, 1962) on the lability of the sympathetic division of the autonomic nervous system (Eysenck, 1983). Elevated physiological baselines and measures of delay in returning to baseline after stressful stimulation are promising physiological correlates of high neuroticism scores (Eysenck, 1983).

Life Change and Hassles

The two triggering variables are a large number of major life changes over one year (deaths, divorce, loss of job, etc.) and/or a large number of minor hassles (micro-stressors). Several reviews have shown that only about 10% of the variance in predicting symptoms is accounted for by major life change (Rabkin & Struening, 1976). More recently an accumulation of minor daily hassles (e.g., noise, running out of gas, etc.) has been shown to be strongly related to somatic symptoms even after the effects of major life changes were statistically removed (DeLongis et al., 1982; Zar ski, 1984). As a patient recently said to me, “For some people it is not the mountain in front of you but that grain of sand in your shoe that brings you down.” There are still several methodological problems that remain to be resolved in the measurement of both major life change and hassles (Cohen, 1986; Dohrenwend et al., 1985; Lazarus et al., 1985).

Social Support and Coping Skills

The two buffering variables are number and degree of satisfaction with social support (Cohen & Wills, 1985; House et al., 1988) and coping skills (Rosenbaum, 1980; Wrubel et al., 1981). Numerous studies have shown that social support is associated with less physical and mental illness. “People with spouses, friends, and family members who provide psychological and material resources are in better health than those with fewer supportive social contacts,” (Cohen & Wills, 1985).

There is a good agreement on the importance of individual differences in coping skills and health outcomes (Lazarus & Folkman, 1984) and there have been several efforts to construct scales to measure coping skills (Kobasa et al., 1982; McCrae, 1984; Stone & Neale, 1984; Wiebe & McCallum, 1986).

The High Risk Model illustrates powerful psychological, social, psychophysiological and situational factors that can predispose, buffer, and trigger somatization reactions. Positive test findings on the High Risk Model can provide the frustrated physician with a rational explanation of the patient’s persisting somatic complaints independent of identifiable pathophysiology. Hence, the physician can feel both medically and legally justified in referring the patient for psychophysiological therapy for somatic complaints (Wickramasekera, 1988).

Such consideration could reassure the conscientious physician that he or she is making a rational referral and that the somatizing patient is launched on a rational and conservative course of therapy.
with some prospect of palliation of symptoms. If not specific therapy for the specific etiology (e.g., psychosocial conflicts) of the patient's somatic complaints. A conservative therapy that, unlike chronic use of pain and tranquilizing medications or surgery, will not cause new negative psychological and physical problems.

The Somatizer and the Psychological Referral

The physician knows that the somatizer is very unlikely to accept and complete a conventional psychological or psychiatric evaluation. The typical psychological evaluation has zero face validity for chronic low back pain or for a patient with headache pain associated with extra and intracranial vasoconstriction, nausea and vomiting. The somatizing patient remains committed to a medical definition and resolution of the somatic complaint and any referral to a "shrink" is seen as an insult or challenge to the authenticity of his or her obvious somatic symptoms. In spite of the physician's suspicions to the contrary, the patient may be a) unaware that there are any psychosocial conflicts, b) unaware that psychosocial conflicts can trigger muscle spasms and vascular contractions, and/or c) unaware that physiologically he or she is chronically in a "fight or flight" stress mode (Wickramasekera, 1976, 1988).

It is precisely for the above reasons that even unsystematic and adjunctive therapies like biofeedback and stress management, which directly and obviously use and monitor physiological functions, have higher face validity for the somatizing patients than a conventional psychological interview. Psychological referrals are unacceptable to the somatizing patient who a) keeps mind and body in separate compartments, b) who does not believe that mental-emotional changes can alter physiological functions, and c) who may not feel muscularly braced or "stressed." Hence, in order to engage such a patient productively and efficiently in psychophysiological therapy certain minimal changes need to occur in the patient's perception of his or her clinical situation. First, the patient needs to see and experience personally and repeatedly how his or her mind can alter his or her biological functions. Second, the patient may also need to recognize that his or her body is chronically on "red alert." For example, that parts of his or her body are chronically vasoconstricted (e.g., cold or wet hands and feet) or muscularly braced.

Third, the patient may also need to recognize that he or she is subjectively unaware of this chronic "red alert" status which may be contributing to his or her somatic complaints.

Psychophysiological Therapy and the Referral

Psychophysiological therapy can be defined as the use of psychological and physiological monitoring and measuring devices to potentiate complex cognitive and emotional learning about adaptive mind–body relationships through procedures that identify, amplify, and track the conscious and unconscious physiological antecedents and consequences of complex cognitive and emotional events (Wickramasekera, 1976, 1988).

At this point the central problem confronting the primary care physician is to find a bridge that can carry the somatizing patient out of his or her office and into the office of the psychotherapist. The somatizer typically perceives the psychological distance between the primary care physician's office and a psychologist's office as several light years. If the somatizer risks entering the psychologist's office, the psychotherapist's immediate problem is to find a method to engage such a somatizing patient in psychotherapy in a way that has high face validity for the patient's somatic symptoms.

The Trojan Horse Procedure

The Trojan Horse Procedure is the biological packaging of a psychological intervention that reduces both the psychological and physical distance between the primary care physician's office and the psychologist's office. The Trojan Horse Procedure provides a psychophysiological bridge from the biomedical model in which the patient is a passive recipient of services to the biopsychosocial model (Engel, 1977) in which the patient is an active participant. The latter model is more nearly an educational one in which the doctor is really a teacher (as the word "doctor" originally implied) and the patient is a student.

The Trojan Horse Procedure reduces the physical distance between the physician's office and the clinical health psychologist's office by relocating the psychologist's office inside the physician's office or right next door. From this location the psychologist can function as a peer and expert consultant on issues of mind–body interaction. He does not duplicate the physician's training but has a unique set of psychosocial investigative skills that can protect the physician from potential mal-
practice lawsuits.

The psychological distance is also reduced by the Trojan Horse Procedure. The goal of the Trojan Horse Procedure is to disengage the psychological defenses of denial and skepticism in regard to mind-body interaction. This is done by experimentally demonstrating on the patient's own body that mind and body are closely connected. A personal experience is often worth many verbal explanations for the skeptical patient. Many of these patients believe in nothing they are told and less than half of what they can be shown. The Trojan Horse Procedure is facilitated by physiological (EMG, EKG, GSR, etc.) and psychological (Harvard, Barber Hypnotic Scales, Eysenck Scale, etc.) monitoring and measurement instruments. The Trojan Horse Procedure is in essence a psychophysiological role induction that has at least four features. First, it can provide (from the results of the hypnotic and/or psychophysiological stress test) a face-saving and plausible rationale for the somatic symptoms (e.g., cognitive amplification/creation of symptoms and/or muscular bracing, as indicated by high- and sustained-baseline EMG levels and delayed recovery from mental arithmetic stress).

Second, there is an explicit and very specific focus on the patient's presenting somatic complaint. For example, there is initially a detailed history taken of somatic complaints with demonstrated empathy for the patient's frustration in securing help. The "organ recital" is not only invited, it is welcomed. The patient is immediately put to work collecting data on the intensity, duration, course, antecedents, and consequences of the somatic symptoms. During the initial session the therapist is very active, limiting his questions to objective, physical, and quantitative factors (prior medications, exercise, the weather, sleep, etc.) that could contribute to understanding changes in the somatic complaints. Questions are asked about prior medical tests and therapies and the patient's impressions about their relative value. The therapist will reach for and comment empathically on the patient's sense of suffering, frustration and disappointment from the failure to get durable somatic relief.

This initial empathic but objective approach, in which physiological questions are often asked that are even more detailed than his primary care

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2 The psychophysiological therapist needs to be familiar with medical knowledge on the etiology, diagnosis, tests, and therapies of the limited number of disorders he treats.

Physiological Demonstrations

This empathic but quantitative approach can be reinforced by one or more psychophysiological demonstrations based on information collected from the patient's High Risk Test Profile (Wickramasekera, 1986, 1988). After the initial interview the patient is informed that candidacy for psychophysiological therapy requires completing the High Risk Test battery. The rationale for the test battery is explained and anxiety about the tests is reduced. The psychophysiological demonstrations are selected and planned based on information collected from the High Risk Profile. The aim of the demonstrations is to confront the patient with ocular proof that a) mental events can alter biological functions, and that b) one's body is an accurate mirror of cognitive and emotional threat. Patients are encouraged to struggle with the implications for their symptoms of these psychophysiological demonstrations and findings until ready to make a firm commitment to psychophysiological therapy.

The patient who scores high (Harvard 12–9) on hypnotic ability is shown through suggestion (with patient permission) how he or she can experience numbness, tingling, anesthetic sensations, or catalepsy in some self-selected part of his or her body. A part of his or her body is selected that is distant from and unrelated to the somatic complaint. This personal experience of sensory alteration may be surprising and confirm the prior counter-expectational experience on the Harvard Test of "involuntariness" ("locked" fingers, "immobilized" arms, etc.).

Since most people (90%) will score moderately or low (Harvard 0–8) on hypnotic ability they will require a nonhypnotic psychophysiological demonstration. The primary purpose of this demonstration is to show the skeptical patient that
when they are “rattled” mentally they will also a) become rattled and reactive physiologically and that they may be b) unaware of the fact that they are physiologically rattled and may also have a c) typical window of physiological reactivity or vulnerability (Engel, 1960; Krantz & Manuck, 1984; Lacey, 1967) that may match their presenting clinical symptom. The window of vulnerability is often the physiological response system (e.g., EMG, blood pressure, heart rate, conductance, peripheral skin temperature) that shows the highest elevation under the stress condition and/or is the response system that takes the longest time to return to baseline after a brief cognitive stressor (e.g., timed mental arithmetic problems). The sympathetic reactivity demonstration starts with a 15-minute baseline measurement of frontal EMG, skin conductance, heart rate, systolic and diastolic blood pressure, and peripheral skin temperature. At the end of the baseline period the subject is told “I will now give you a 60-second I.Q. test (stressor). Afterward a second 15-minute return-to-baseline period is run. At the end of the psychophysiological stress profile or sympathetic reactivity demonstration the patient is shown the raw physiological data from the strip chart.

The patient’s attention is drawn to the following events: a) The “window of vulnerability,” is demonstrated by the initial baseline elevation level, the magnitude of the physiological response, and/or the gradient of delay in returning to baseline after the math stress. b) The patient is told that it is probably in part the chronic intermittent triggering of the most reactive physiological system (keeping it on “red alert”) that explains the patient’s symptoms. c) Attention is drawn to the patient’s physiological reactivity to the math problems on the strip chart. The patient is asked if a trivial and isolated math problem can so profoundly alter physiology, what could be the physiological consequence of an important chronic or intermittent psychosocial conflict (for example, with a spouse, employer, siblings, or a problem adolescent or aging parent)? This includes people one can neither attack nor flee from, but with whom one is trapped in daily living relationships with both positive and negative feelings. Dealing with today’s “sabertoothed tiger” is more complicated because he is often family, friends, and authority figures.

The second psychophysiological demonstration is for the purpose of illustrating how unaware or disconnected the patient is from his own body. This second demonstration is for the purpose of illustrating, however crudely, the phenomenon of psychophysiological desynchrony (Lang, 1969). The patient stands in front of a blank EMG strip chart recorder scaled from 0–50 micro-ohms. 0 is subjectively anchored as “I am not aware of any muscular tension in my upper body” (above the waist). 50 is subjectively anchored as “I feel so much muscular tension in my body that I am very physically uncomfortable now.” With these two points (0–50 subjective units of distress) anchored, the patient is asked to mark with a pencil his or her present-felt level of subjective muscular tension from above the waist on this scale from 0–50 micro-ohms. Most patients generally mark around 15 or 20 units of subjective distress (SUDS). The strip chart and frontal EMG are next activated and run for a 15-minute baseline, first with “eyes open” and second with “eyes closed” followed by a 60-second stress and debriefing period and another 15 minutes of “relax” to return to baseline. Over 95% of patients with chronic stress related symptoms will significantly underestimate the level of frontal EMG on the strip chart. When they are confronted with the large discrepancy between verbal report and actual EMG measure the patient is invariably shocked and startled. It is then stated that this is a very gross test that nevertheless demonstrates how unaware or disconnected people can get from their own bodies as a function of habituation or desensitization to a high level of chronic muscular bracing. It is pointed out that these underestimates are very common in patients with stress disorders.

In general, the purpose of these psychophysiological demonstrations is to capture the patient’s attention, curiosity, and imagination. As engagement and curiosity occur the patient is asked since when, and why, has this suit of muscular armor been worn. Since when has the psychosocial environment seemed dangerous? Under what conditions, if ever, does the armor come off? The net effect of these questions and demonstrations is a spiral of escalating credibility that is like opening up a sun roof in the patient’s head. It also provides the patient with a face-saving biological rationale for his or her physical symptoms and for psychophysiological therapy. The psychophysiological demonstrations move the patient away from a biomedical model and towards a self-

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3 This procedure has to be used very cautiously with the highly susceptible (Harvard 12–8) patient since it may temporarily increase pain or other somatic complaints.
management and coping skills model of therapy. The demonstrations are step one in new learning about self. During self-monitoring of symptoms patients are not told to reduce their symptoms but to observe the conditions under which they fluctuate. Patients are told to observe and quantify (on a visual analogue pain rating scale of 0-50) their symptoms in terms of frequency and intensity in a detached, critical, and analytical way. This type of invitation to observe and record their pain starts a subtle shift in their perspective on their pain. It is now an external object of study. The reality of their pain is now taken for granted: it is not questioned but assumed. The patient's high ground is in a sense occupied and the patient will have to find a different battleground on which to combat the therapist.

During the initial 3-session evaluation procedure (1. clinical interview, 2. High Risk Profile tests, 3. High Risk Profile feedback) I state explicitly that we are evaluating the patient's candidacy for admission to our psychophysiological therapy program. It is as if the patient was applying for admission to a graduate school. Only people who are positive on one or more of these High Risk factors are candidates for psychophysiological therapy, the rest may need further medical evaluation with more appropriate high-resolution medical tests. It is explained to the patient that positive findings on the High Risk Model will provide targets for therapy and also information on assets that can be mobilized (e.g., High neuroticism can indicate an openness to verbal self-exploration, etc.) to enhance self-investigation of the psychosocial antecedents and consequences of somatic symptoms. Any secondary gain the patient may get from their symptoms is reframed as ego-alien because it is in a sense running interference on yourself. The patient is shown the individual learning curve and how it is seldom smooth. It is most often erratic during skill acquisition. The process of psychophysiological skill acquisition and therapy is predicted to be hard, erratic and discouraging. These crucial operations and predictions of the Trojan Horse Procedure should be completed in the first three sessions. The patient's uncertainty in a new clinical situation can generate physiological arousal and the newness of the therapeutic relationship can create a "honeymoon effect." These factors can jointly create an opening in the patient's head into which the therapist can step. This opening is the optimal time and place to destabilize maladaptive belief systems (e.g., mind-body dichotomy) and to glimpse a more functional belief system (mind-body interaction).

Psychophysiological Therapy

The test data (High Risk Profile) and its implications for the specific symptoms are placed before the patient. The High Risk factors appear to have considerable face validity for patients, apart from any predictive or construct validity. The patient is invited to comment (based partly on the self-monitored baseline data, etc.) on the implications of the test data for the events that could have predisposed, triggered, and buffered his or her symptoms. The patient is encouraged to speculate on how fluctuations in the intensity, frequency and duration of symptoms may be related to specific risk factors like hypnotizability, catastrophizing, and so forth. Patients are encouraged to form mini-models that predict and post-dict how they felt or will feel in changing situations. Through patient self-monitoring of physical symptoms and enhanced curiosity about what factors control their onset and offset, collaborative theory formation occurs. Guided partly by the High Risk factors the patient hypothesis tests the efficacy of new and varied risk taking behavioral and verbal repertoires. Through collaborative hypothesis formation and real-life hypothesis testing (interventions) the patient is progressively drawn deeper into a working therapeutic alliance that is the pre-condition for all successful psychotherapy.

The psychosocial and situational antecedents and consequences of episodes of somatization are recorded daily by the patient and discussed with the therapist in weekly sessions. This tacit invitation to join the therapy team as an analytic semi-objective monitor of his or her own symptoms and feelings can increase the patient's curiosity and self-esteem. This invitation should be implicit in the initial clinical interview and increasingly explicit in subsequent sessions. Since the patient is now a co-investigator of somatic symptoms, motivation to report on covert intrapsychic, interpersonal, or environmental events is now enhanced. When the patient reliably makes spontaneous comments during therapy on psychosocial antecedents and consequences of somatic symptoms, the patient has graduated from studying headache to studying his or her own head. The Trojan Horse Procedure has enabled the patient to create the curiosity and generate the courage to study psychophysiological interactions. When this point is reached, the patient
A Case Example

C. M. went to her doctor complaining of shortness of breath during the night, frequent chest pains and insomnia. Twice she had gone to the emergency room, thinking that she was having a heart attack. Exhaustive tests by her physician and four specialists yielded nothing and she was referred to this clinic. Psychophysiological assessment revealed an abnormal respiratory pattern and labile heart rate during exposure to a standardized stressor (mental arithmetic). Hypnotic ability was high but all other risk factors were moderate. The next step was finding the unconscious, cognitive triggers for these physical symptoms.

During her initial interview C. M. had mentioned that she had dated the same boyfriend for four years. She wanted to get married and start a family, but each time she suggested this he offered a different excuse. He had kept her in a “holding pattern” for 4 years. C. M. made it clear that although this was not an arrangement she would choose, she denied that she was unhappy with it. Most of these somatizing patients are skeptical of psychological explanations and need to be shown, not told, what bothers them.

While her physiological reactions were being monitored, C. M. was asked to visualize and talk about her relationship with her boyfriend. Her physiological reactions during this procedure showed the previous abnormal respiratory pattern and elevated labile heart rate response. Patient was unaware of both physiological changes. It appeared that her high hypnotic ability was enabling her to keep this secret from herself. It became clear that this relationship was the major stressful stimulus acting upon her “window of vulnerability.”

When C. M. was told this she was at first incredulous. The next step was to show her on the screen and printed polygraph chart, the biological changes her thoughts and emotions produced and then to help her recognize and express her frustration and anger at her boyfriend. Soon her symptoms became in-

frequent and she was able to phase out all psychotropic and sleep medications. All cases are not this simple. Many patients are addicted to narcotic, sleep, or psychotropic medications or have had multiple unsuccessful surgeries. They are angry and bitter and continue to press for a strictly medical solution to their symptoms.

The electronic instruments that are used in our clinic track the biological correlates of unconscious psychological events, amplifying them so that they become recognizable by the patient. In this way the instruments operate like a lie detector, or more accurately like a “truth detector.” They mirror the mind.

**Limitations**

The practice of psychophysiological therapy requires clinical training that is first broad and later specialized. The candidate first requires broad training at least in short term dynamic psychotherapy and later more specialized training in biofeedback, behavior therapy, and hypnosis techniques. In addition, there should be training in the operation of psychophysiological instruments (polygraphs, etc.), hypnosis tests, and the basic concepts of clinical psychophysiology. The psychophysiological therapist also needs to have a general knowledge of the etiology, the medical tests, and therapy procedures that are commonly used to medically treat the physical symptoms (headaches, backaches, peptic ulcers, etc.) he or she might see in clinical practice, so that he or she can converse intelligently about the patient with the referring medical doctor. All the above concepts and skills can be acquired in a 1- or 2-year postdoctoral residency program preferably in a medical center. On-the-job training and supervision should start (Wickramasekera, in press) with the live observation of the clinical behaviors (diagnosis, therapy, etc.) of a role model or mentor.

The exploration of intrapsychic conflicts is always complex. The psychologist can study the behavioral and physiological tracks left by these elusive cognitive-emotional events. He studies these tracks with objective-quantitative tools (polygraphs, computers, etc.) and careful patient self-monitored records of the intensity, frequency, and duration of the symptoms and their social-psychological antecedents and consequences. These patient self reports of symptom frequency and intensity are of course influenced by patient personality features (Watson & Pennebaker, in press). This enterprise seeks to study soft subjective phenomena (cognitions, feelings, beliefs, etc.) with hard methods. Soft phenomena like intrapsychic events studied with objective-quantitative tools may distort them but may capture at least a residue
that is objective, reliable and quantifiable. This methodology and the behavioral, quantitative nature of the physical symptoms that are the targets of therapy (vomiting, pain behaviors, amount of analgesics consumed, number of visits to the emergency room, days hospitalized, etc.) leaves less room for the therapist to delude himself or be deluded by the patient regarding the clinical efficacy of an intervention strategy (Wickramasekera, 1981). Hence, as in medical practice, the domain of clinical or health psychology is very vulnerable to falsification and open to the gradual accumulation of effective knowledge by corrective empirical feedback. The study of purely subjective symptoms with subjective methods is much more vulnerable to self-delusion and immune to falsification.

Several of these somatic symptoms, particularly those presented by patients with chronic pain, respond poorly to conventional methods (Osterweiss et al., 1987). The new psychophysiological methods, for example, have been shown to be very promising in a review of controlled chronic pain studies (Linton, 1986). Prior trials of multiple drugs, physical therapy, and multiple surgeries have failed to give durable pain relief to these chronic patients. The modest goals of the psychophysiological therapist includes phasing out these patients’ doctor-shopping behaviors (Keefe & Hoelscher, 1987; Osterweiss et al., 1987). In 1978, chronic back disorders were estimated to cost the U.S. 17.6 billion dollars (Ng & Bonica, 1979). The psychophysiological therapist simply aims, as Fordyce (1980) says, to reduce the intensity or frequency of the patient’s pain behaviors (not to abolish the pain) and to increase the number and variety of his healthy behaviors (e.g., playing with his grandchildren, going to church, eating out, walking around the block once a day, etc.). Hence, the psychophysiological therapist can help reduce the vast sums of money the somatizer typically spends ineffectively on medical expenses that are often iatrogenic.

**Conclusion and Implications**

There are major changes in what kills and cripples people today and psychological and behavioral factors have become major preventable risk factors for the new killers and cripplers in health care (Califano, 1979). Somatization is a major mechanism through which psychological factors can be transduced into physical symptoms. The High Risk Model examines the submechanisms in somatization. Not only are behavioral and psychophysiological factors involved as components in the etiology of modern physical diseases, but they are now also involved in the therapy of some common physical disorders (Hatch et al., 1987).

Psychological and psychophysiological treatment technologies like biofeedback, behavior therapy and hypnosis (Birk, 1973; Hatch et al., 1987; Wickramasekera, 1976, 1988) now offer promising and cost-effective alternatives to drugs and surgery in the treatment of both psychophysiological and physical disorders. For example, physical disorders like chronic muscular and vascular headaches, primary Raynaud’s disease, primary mild-moderate hypertension, fecal and urinary incontinence, and chronic pain (Blanchard, 1982; Hatch et al., 1987; Wickramasekera, 1988). Psychosocial factors through somatization mechanisms can become the final common pathway of exacerbation of strictly physical diseases. Several of the new psychophysiological technologies that substitute “skills for pills” in the therapy of physical diseases and disorders have already been cautiously but favorably reviewed in terms of cost effectiveness, lack of negative side effects, and so forth. in prestigious medical journals (Blanchard et al., 1983; Chesney & Agras, 1987; Cottier, Shapiro & Julius, 1984; Diamond & Montrose, 1984; Fabrion, 1977; Kristt & Engel, 1975). Today we are confronted with the paradox of having certain psychophysiological therapies developed and delivered by psychologists that are at least as effective as the standard drugs and surgery in the primary or adjunctive treatment of a growing number of physical diseases and disorders.

“Mind over matter” is no longer an issue for academic debate but is now a practical clinical reality in health care, deserving third-party reimbursement in terms of effective therapy alternatives for certain physical disorders. Hence, the growing integration of psychology (mind) and medicine (body) is manifest today not only in the expanding role of psychological and behavioral risk factors in the etiology of the new physical diseases but also in the availability of psychological technologies of documented effectiveness (Hatch et al., 1987; Wickramasekera, 1976, 1988) in treating certain strictly physical diseases or disorders. This quiet but profound change on the health care stage (unknown to many if not most psychologists) has been termed the “Behavioral Medicine revolution” (Wickramasekera, 1988). It is in fact a major paradigm shift that requires an expanded legal definition of the word “physician” to include clinical
health psychologists (Wickramasekera, 1984, 1988). The legal and economic implications of this revolution are profound for psychology today, and will be even more so tomorrow, when primary care physicians realize what has happened.

References


