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## People Create Health: Effective Health Promotion is a Creative Process

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### Abstract

Effective health promotion involves the creative cultivation of physical, mental, social, and spiritual well-being. Efforts at health promotion produce weak and inconsistent benefits when it does not engage people to express their own goals and values. Likewise, health promotion has been ineffective when it relies only on instruction about facts regarding a healthy lifestyle, or focuses on reduction of disease rather than the cultivation of well-being. Meta-analysis of longitudinal studies and experimental interventions shows that improvements in subjective well-being lead to short-term and long-term reductions in medical morbidity and mortality, as well as to healthier functioning and longevity. However, these effects are inconsistent and weak (correlations of about 0.15). The most consistent and strong predictor of both subjective well-being and objective health status in longitudinal studies is a creative personality profile characterized by being highly self-directed, cooperative, and self-transcendent. There is a synergy among these personality traits that enhances all aspects of the health and happiness of people. Experimental interventions to cultivate this natural creative potential of people are now just beginning, but available exploratory research has shown that creativity can be enhanced and the changes are associated with widespread and profound benefits, including greater physical, mental, social, and spiritual well-being. In addition to benefits mediated by choice of diet, physical activity, and health care utilization, the effect of a creative personality on health may be partly mediated by effects on the regulation of heart rate variability. Creativity promotes autonomic balance with parasympathetic dominance leading to a calm alert state that promotes an awakening of plasticities and intelligences that stress inhibits. We suggest that health, happiness, and meaning can be cultivated by a complex adaptive process that enhances healthy functioning, plasticity and self-transcendent values. Health promotion is likely to have only weak and consistent benefits unless it is person-centered and thereby helps people to learn to live more creatively.

### Keywords

Treatment; health promotion; creativity; well-being; happiness; psychological resilience; personality; person-centered medicine; human development

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## The Indispensable Components of Health Promotion

Prior efforts have helped us to identify four indispensable pathways to effective health promotion. Each of these pathways emphasizes one aspect of person-centered health care. As described by Juan Mezzich, effective health promotion needs to be “for the person, with the person, by the person, and of the person” [1].

First, college educated adults are often healthier than others [2], but the association is not consistent, suggesting that the protective effect of education is heterogeneous and depends mostly on deprived childhood experiences that reduce the probability of graduating from college [3]. The benefits of health education interventions are largely mediated by individual differences in social-cognitive variables, particularly self-efficacy (i.e., the conviction that a person will be successful in changing to a healthier lifestyle), descriptive social norms (i.e., what others do), and injunctive norms (i.e., what important people tell us we should do) [4–6]. It has long been recognized that knowledge of healthy practices and good intentions are rarely adequate to result in health change [6]. People often make resolutions to change unhealthy lifestyle practices but seldom maintain their commitment if they don't engage in more comprehensive multi-modal interventions [7]. Education to increase awareness of what is healthy is a necessary component of the care and promotion of the health “*of the person*”, but alone it is a weak and inconsistent way to promote health.

Second, when experts or authorities attempt to regulate the lives of others or tell them what to do, they often provoke resistance or dependencies that are counterproductive, as occurred with public health efforts to prohibit use of alcohol, cigarettes, and illicit drugs [8, 9]. Rather, health care and promotion is more effective when it involves respectful co-active communication “*with the person*” [10, 11]. Such coactive communication provides the opportunity to teach skills for self-regulation, thereby enhancing self-efficacy and instilling values for healthy living [8].

Third, efforts to promote health are likely to be ineffective if they ignore what a person values, which influences the appraisal of the risk-benefit ratio for different treatments or lifestyle practices [12, 13]. Personal values must be considered along with factual evidence of treatment efficacy in order to facilitate health promotion “*by the person*”. The effectiveness of health care is enhanced by joint consideration of facts and values in decision aids for patients, but even then effects remain moderate and inconsistent [14].

Fourth, efforts to promote health are ineffective when they focus only on the reduction of the symptoms of disease and neglect ways to facilitate growth in well-being. Consequently, public health programs have begun to recognize the need for measuring physical, mental, and social aspects of well-being in order to promote health effectively [15]. Fear of disease is often insufficient to motivate change in lifestyle. Health promotion needs to point the way toward the satisfactions of positive health in order to cultivate well-being “*for the person*.”

There is evidence that each of these four components of health promotion are beneficial when used in synergy, even though their benefits are weak and inconsistent when employed individually [16]. First, instruction of people who are not motivated to change is ineffective

if they are not engaged from an outlook of unity as a respected person. Extensive research has been carried out with the stages of change model that distinguishes between pre-contemplation, contemplation, preparation, and commitment to change [17]. Even when people are not initially even contemplating actions to become healthier, they can be engaged and encouraged to become more aware and motivated to take effective action [17, 18]. There are multiple stages along the personal journey to change of the person, and each stage is most effectively approached as a respectful negotiation with the person with an understanding of their goals and values [19]. These findings illustrate activation of awareness, preparation for action, and commitment *of the person*.

Second, the effectiveness of health promotion is increased by a therapeutic alliance involving co-active communication *with the person*. Person-centered communication involves mutual respect, empathy, and authenticity, rather than one person dominating the other, so that health is promoted by fostering self-directedness and cooperation [11, 20, 21]. Such common factors of the therapeutic alliance are important in health care regardless of technical skill and knowledge, but are not sufficient for strong and consistent improvement in health [22, 23].

Third, health promotion is enhanced when both facts and values are integrated in health care decisions *by the person* [12, 14]. Extensive experimental work has shown that people can learn to accept unpleasant facts and commit to action toward goals that they personally value, as is done in Acceptance and Commitment Therapy (ACT) [24, 25]. Encouraging commitment to valued action and letting go of defensiveness (i.e., fighting or avoidance) leads to improvements in a wide range of disorders, including anxiety [26], depression [27, 28], psychosis [29, 30], and chronic pain in primary care [31]. Acceptance can be facilitated by relaxation exercises, providing a foundation for mindfulness and contemplation [32–34]. Values-based medicine (VBM) is an important component of effective care and promotion of health when integrated with the other necessary components [12, 35].

Fourth, health promotion is more effective when efforts to reduce disease are integrated with efforts to enhance positive health, including improved physical fitness and vitality, subjective well-being (life satisfaction and positive emotionality), and an enduring sense of meaning [15, 34, 36, 37]. Experimental work shows that people can learn to self-regulate their breathing and improve their physical, mental, and social well-being through natural methods that optimize heart rate variability, which is a strong predictor of overall health and longevity [38, 39]. People can learn to become more resilient by broadening their outlook to be more optimistic and tolerant of themselves and others [40, 41].

Essentially, health promotion of the person increases knowledge and awareness of how to live and function well. Health promotion with the person helps a person to identify and accept valued goals. It teaches self-regulatory skills that enhance self-efficacy in functioning. Health promotion by the person supports the integration of this factual knowledge and personal values to support a commitment to change that cultivates plasticity. Health promotion for the person assures that values are directed toward enhanced personal and collective well-being. Values that are optimally healthy and prosocial are self-transcendent and virtuous because social inequality and personal vices are unhealthy for

individuals and the social groups in which they live [42]. Thus person-centered health promotion works by activation of synergy among healthy functioning, plasticity, and virtue [20, 43].

## **Why are the Individual Components of Health Promotion Only Weakly Effective?**

Self-transcendent values (i.e., virtue) guide a person to function in ways that promote both individual and collective well-being [20]. In turn, healthy functioning promotes a person's plasticity, which allows him or her to be resilient, flexible, and free in the choice of valued actions to which they commit. Plasticity allows the flourishing of the "good life" that is healthy, happy, and virtuous. Thus person-centered medicine promotes healthy functioning, plasticity, and virtue, which are synergistic in their promotion of well-being with strong and consistent effects [16]. If any one of these crucial components of health care promotion is blocked, a person's health is vulnerable, does not flourish and begins to deteriorate in the face of daily life challenges [16]. When health promotion efforts address only individual components of well-being, then the other indispensable components may be unhealthy, resulting in interventions and treatments that are weak and inconsistent in their efficacy. Treatments and interventions may work weakly or sometimes in those people in whom the other neglected components already happen to be healthy.

Effective health promotion requires growth in the complete health of the whole person [44]. A whole person is an inseparable component of a much larger psychosocial context, including the person's community, planet, and ultimately the universe as a whole [32]. In practice, the assessment of the healthy functioning of a person is most thoroughly based on a comprehensive description of their personality, as can be done with the Temperament and Character Inventory [20, 34, 45]. It is also possible to describe the state of their functioning using measures of subjective well-being [46–49], but all such subjective measures are largely expressions of how happy or satisfied a person is and do not describe the components of the developmental processes leading to health and happiness [50, 51].

Physical, mental, and social aspects of well-being are all strongly dependent on the TCI character traits of Self-directedness, Cooperativeness, and Self-transcendence [36, 52]. The development of these personality traits over the life course is a complex adaptive process that allows a person to adapt one's outlook, goals, and values to social norms and individual life experiences in a meaningful and satisfying way [32, 50].

Personality provides a reliable way to assess the quality of a person's functioning in the general population as well as with psychiatric and other medical patients with physical disorders [45, 53]. In order to promote physical, mental, and social well-being, it is necessary to promote the healthy personality development that underlies healthy living. Perhaps the inadequacies of past efforts at health promotion can be explained by the need to more fully accept the fact that the well-being depends on the development and maintenance of a healthy personality, not just knowledge, external support, and encouragement although those things represent part of the necessary resources. So we need to know what is a healthy personality?

## What is a Healthy Personality?

Three key practices have consistently been shown to lead to the development of well-being: (1) letting go, (2) working in the service of others, and (3) growing in awareness [32, 33]. Letting go involves acceptance of who you really are so that you can develop realistically and calmly without fighting or worry. Acceptance and letting go are expressions of hope, rather than giving in to excessive or insatiable desires. Working in the service of others is expressed as genuine acts of kindness, which are satisfying even when it involves personal sacrifice. Serving others is an expression of love, rather than giving into fear and selfishness. Growing in awareness is the result of using our intelligences to listen to all aspects of our being. Through reflection, meditation, and contemplation a person can discover more about one's self and the mysteries of one's inseparable relations to others and the world as a whole. Awareness is the actualization of the benefits of faith. Such faith is based on the insight and conviction that comes from intuitive understanding, rather than blind acceptance of dogmatic assertions by external authorities.

Each of the practices that lead to well-being are functional expressions of the character traits of Self-directedness, Cooperativeness, and Self-transcendence. Self-directedness (i.e., being resourceful, purposeful, self-accepting, responsible, and foresighted) leads to confidence about one's ability to accomplish valued goals, and such self-confidence is a way of describing hopefulness. Consequently people who are highly self-directed are accept who they are really and can admit to faults and weaknesses, whereas others are too proud or ashamed to admit their faults [32].

Cooperativeness (i.e. being tolerant, helpful, empathic, principled, and compassionate) is an indicator of a person's disposition toward kindness and compassion for one's fellow human beings. Such loving kindness and compassion motivates a person to work in the service of others, rather than for personal gain [32]. Acts of kindness are satisfying and enhance physical, mental, and social aspects of well-being [54–56]. Acts of kindness make people happy [55], and happy people experience less pain [54], have improved cardiovascular health and resilience [56], fewer accidents and suicides, and live longer [57].

Self-transcendence (i.e., being intuitive, imaginative, easily absorbed and engaged in what is valued, and spiritually accepting) indicates capacity for insight from meditation and contemplation. Such contemplation leads to enhanced awareness, self-knowledge, and peak experiences of the inseparability of all things [32]. Mindful meditation has been shown experimentally to reduce stress and enhance objective indicators of well-being [58, 59].

Meta-analysis of longitudinal studies and experimental interventions show that increases in subjective well-being are predictive of reduced morbidity and mortality and of improved objective health and longevity [58, 59]. The effect size of the correlation between changes in subjective well-being with changes in objective physical health is weak ( $r = 0.14$  to  $0.16$ ) in both longitudinal studies and in experimental interventions [59]. An effect size of  $0.15$  corresponds to an odds ratio around  $1.3$  for improvement, which indicates that most people are not substantially improved in objective measures of physical health from changes in subjective well-being [60]. Medical morbidity and mortality in 7-year follow-up is more

strongly predicted by the absence of positive well-being than by the presence of negative well-being, but the effects are still weak and inconsistent [61].

Personality traits are predictive of later health status and mortality in longitudinal studies using the personality questionnaires measuring three and five factor models [62, 63]. High Neuroticism and low Conscientiousness are often predictive of higher mortality, but the results have been weak and inconsistent [63, 64]. More consistent predictors of health outcomes can be identified using Ryff's measures of psychological well-being (such as autonomy and self-control) [65, 66] and the character measures from the TCI previously described here [36, 52, 67]. The TCI was the strongest predictor of clinical health outcomes among all 14 multidimensional personality inventories tested in a longitudinal study in the USA [68]. The average of the TCI's multiple correlation with six clinical indicators of psychopathology was  $r = 0.53$  compared to the averages for other personality tests ( $r = 0.27$  to  $0.45$ ). Hence the linear prediction of mental health outcomes by antecedent personality traits is moderate in strength.

Multidimensional personality profiles are the most consistent predictors of well-being because they specify synergistic non-linear interactions. Specifically, the combination of all three TCI character dimensions (i.e., high Self-directedness, Cooperativeness, and Self-transcendence) predicts greater physical, mental, and social well-being than any other profile or individual trait [36]. The profiles are more informative than the average (linear) effects of the same traits for both mental health and physical health outcomes [36, 67].

The synergistic quality of all three character dimensions is called creativity and the healthy personality configuration is called the creative character profile [20]. Creativity can be defined as the *original, adaptive, and beneficial innovation* that emerges from the combination of high self-directedness (i.e., resourceful, realistic, and self-accepting), cooperativeness (i.e., tolerant, helpful, and empathic), and self-transcendent (i.e., intuitive, imaginative, and spiritual). Creativity depends on all three of these components of character because it must be (1) *original* (i.e., using imagination or innovative ideas to solve problems or to invent new and better solutions to traditional approaches, as is characteristic of highly self-transcendent people), (2) *adaptive* (i.e., a realistic way to use available resources to make something suitable for a new use or purpose, as is characteristic of highly self-directed people), and (3) *beneficial* (i.e., being favorable, helpful, or advantageous for others so that it becomes adopted by the culture or social group, as is characteristic of highly cooperative people). There is no consensus about a single definition or test for measuring creativity despite much study of the topic, but there is agreement that creative processes are original, adaptive, and beneficial for one's self or others [69–71]. Sometimes the word “adaptive” is taken broadly to imply both realistic and beneficial. In any case, the importance of creative products being socially valued and benefiting others has been well-documented in studies of creative achievement [72–74]. Creativity has been shown to be strongly related to three facets of individual differences: differences in (1) intellectual abilities (e.g., divergent thinking, imagination, aesthetic sensibility), (2) personality traits (e.g., tolerance of ambiguity, desire to grow, desire to work for recognition, willingness to take risks and try to overcome obstacles), and (3) character style or style of mental self-government (e.g., a progressive legislative style, which finds enjoyment in creating one's own rules and ways of

doing things, looking for new things to do and for new ways to do old things), and [70, 75, 76].

Overall, creativity is a process that occurs within creative people in particular states of mind in a particular psychosocial context [32, 72]. Specifically, the creative character profile (i.e., the combination of being highly self-directed, cooperative, and self-transcendent) facilitates a person getting in a creative state of mind (i.e., calm alertness with a flowing intuitive awareness that awakens automatic intelligences), thereby helping a person to discover original solutions that are adaptive for one's self and others.

Each of the three TCI character traits contributes to positive affect and life satisfaction regardless of the level of the other two traits, and the combination of all three has a stronger correlation with subjective well-being than expected from the sum of the three individual contributions [36]. In other words, the dynamic non-linear interaction among these dimensions has a synergistic effect to enhance physical, mental, and social aspects of well-being.

The creative process emerging from the healthy character configuration has concrete and practical benefits. People with high Self-transcendence have a vivid imagination, and this leads to creativity when combined with realistic thinking typical of high Self-directedness and with schizotypal or magical thinking when combined with low Self-directedness [77]. In contrast, people who are high in Self-directedness and Self-transcendence, but low in Cooperativeness, are generally regarded as “fanatics” and often act with hostility or in ways that are destructive for themselves and others, so they are not regarded as creative despite their ingenuity. People who are “organized” (i.e., high in Self-directedness and Cooperativeness, but low in Self-transcendence) have often been considered to have healthy personalities, but they are still vulnerable to being self-centered, materialistic, and conventional unless they are also high in Self-transcendence [78]. Creative processes require a freedom of will and thought that is not constrained by past conditioning and traditional beliefs [79, 80].

Creativity must not be regarded as a rare capacity of exceptional individuals. Existential and phenomenological approaches to medicine recognize that each moment in life is a creative process in which all people are transforming their past experiences and future hopes into the more-or-less adaptive actualization of the present moment. Illness provides the opportunity for creative development by increased awareness of our all three aspects of our being (i.e., body, thoughts, and soul), but only if we allow ourselves to accept reality and to grow in its understanding [81]. Our pains and fears force us to enlarge our consciousness if we are to adapt adequately. From this adaptive perspective, health is adequate creativity and an illness is inadequate adaptation [82]. From this person-centered perspective, Victor von Weizsaecker, observed that illnesses revealed meaningful information about reciprocal psychosomatic interactions that create health. From his clinical observations in psychosomatic medicine and his experimental observations about the phenomenology of perception, thought, and movement, he suggested that we become sick when we are not in a creative dynamic state:

“The health of a human being is not just capital to be consumed; rather health is actually present only when it is created in each moment of life. If health is not being created, then a person is already sick [83].”

Essentially, when we are not growing creatively, we are consuming what health we have until we become ill, unhappy, and empty. When we are healthy, we are energetic, happy, and fulfilled because we are living creatively in each moment.

## The Range of the Benefits from Creative Living

### Mental Well-being

It is well established that a creative way of living (measured by a creative TCI character profile) is linked with greater subjective well-being, including greater life satisfaction (cognitive aspect of subjective well-being) and a more positive balance between positive and negative affect (the emotional aspect of subjective well-being) [36, 52]. However, higher self-transcendence can also lead to increases in negative emotions, particularly in secular societies where self-transcendent attitudes are in disfavor, but even then positive affect is greater than negative effect in adults [52]. During adolescence, the roles of self-directedness, cooperativeness, and persistence appear to be more important than self-transcendence [84, 85]. The role of self-transcendence becomes clear only when individuals must cope with ultimate situations, like suffering, personal death, or mass extinction, which may occur at any age but only are recognized fully in older adults [50, 51, 78, 86].

### Physical Well-Being

Both personality profiles and heart rate variability are predictive of physical morbidity and mortality [87, 88]. The impact of personality is not fully explained by people's choice of healthy lifestyles, such as habits about diet, physical exercise, and health care utilization [89]. In order to explore the physiological pathways by which personality influences physical health, we have studied relations between personality profiles and heart rate variability, which is sensitive to a variety of emotional and physiological stressors. We found that creativity, measured as the product of the three character scores in the TCI, was significantly correlated ( $r = -0.3$ ) with healthy autonomic balance with predominance of parasympathetic activity, as measured by the ratio of high frequency (sympathetic) activity to low frequency (parasympathetic activity) [89]. In contrast, other character profiles (in which any one of the character dimensions was low) were not significantly correlated with healthy autonomic balance [89]. Agreeability is associated with greater parasympathetic activity but does not reduce sympathetic activity, whereas forgiveness reduces sympathetic activity but does not increase parasympathetic activity [89].

Greater parasympathetic balance is characterized by a state of calm alertness; it is facilitated by slow, deep breathing and is disrupted by stress or defensiveness. Defensiveness (i.e., fight or flight responses, including both aggression or avoidance) is characterized by sympathetic hyperactivity. All three TCI character traits are correlated with greater parasympathetic activity individually, and the product of the three together was greater than their individual association, indicating that there is synergy among these traits that leads to autonomic balance. Experimental interventions show that psychophysiological training with



slow, deep breathing and cultivation of positive affect can enhance heart rate variability and thereby promote healthier outcomes [38, 90].

Dean Ornish has developed multi-modal training programs including diet, emotional self-regulation, and meditation to prevent or reverse coronary heart disease. Ornish has found in longitudinal studies that they lead to improved well-being, including longer telomeres (a predictor of longevity) compared to others who do not change their lifestyle [91–93]. Nevertheless, personality has not been measured with the TCI in Dean Ornish's program of lifestyle change, and the directions of influence among the several changing processes involved in comprehensive lifestyle change remain uncertain. The interactions among the multifactorial processes will need to be considered as components of a complex adaptive system [16].

### **Social Well-Being**

Creativity is associated with perception of warm and satisfying social relationships [36]. The processes underlying the prosocial benefits of creativity have been studied in detail in negotiation and conflict resolution [94, 95]. Stable and satisfying social relationships depend on emotional communication that combines assertiveness with mutual respect, thereby leading to innovative and non-violent resolution of disagreements. Non-violent communication must begin with establishing a context of mutual respect and shared goals. In order to be authentic, there must be the opportunity to express and assert what each person feels and thinks candidly. Yet to avoid violence and resistance, there must be a freedom and openness to change that involves innovative solutions emerging from respectful dialogue. The same principles of non-violent communication can be applied to negotiation generally. Again in social aspects of health we can recognize a complex adaptive system involving multiple reciprocal feedback systems, in which trust stimulates openness, which in turn reinforces change with increases in trust. Similar mechanisms are involved in the formation and maintenance of a helping therapeutic alliance [96, 97].

### **Spiritual Well-being**

Studies of the benefits of spirituality show that there are positive benefits from spiritual acceptance that there is a divine order like justice in the cosmos [30, 98] because this conviction is a basis for hope and other self-transcendent virtues that are characteristic of people who recover from physical and mental disorders [10]. Meta-analyses show that intrinsic motivations like love, hope, and faith led to positive psychological adjustments, whereas extrinsic motivation (doing outwardly pious acts to be seen by others) and avoidance of dealing with one's problems by withdrawing into religious activities led to negative mental and physical outcomes [99–103]. Religious struggles (like feeling God had abandoned you) has been associated with slightly increased mortality [103]. The effect of spiritual acceptance as a single variable to reduce mental distress or to improve health is weak in large-scale meta-analyses ( $r = 0.09$ ) [100, 101].

Intrinsic motivation is based in inner awareness of a connection with something, something beyond one's self, which inspires a sense of meaning and commitment to valued action [104]. Creativity is consistently characterized by intrinsic motivation and a sense of meaning

in life. Self-transcendence involves awareness of what gives meaning and purpose to a person beyond the selfish acquisition of pleasure, power, and possessions [86, 105]. The spiritual aspects of health are often discussed in secular cultures by reference to the strong human needs for engagement and meaning, as emphasized in Seligman's model of psychological health based on Positive Emotions (i.e., feeling good), Engagement (i.e., being completely absorbed in valued actions), Positive Relationships (i.e., being authentically connected to others), Meaning (i.e., feeling your existence has a significant purpose), and Accomplishments (i.e., feeling successful in what you have done) (PERMA) [37]. Engagement is one of the facets of TCI Self-transcendence; people frequently become so absorbed in doing something they value, that they lose track of time and place for a while, so it is labeled as "self-forgetfulness" in the TCI [32, 104]. When people are asked what has given them the most lasting satisfaction in their life, the feeling of accomplishment is one of the three most common experiences they report, along with satisfaction with warm social relations and discovery of what gives them meaning [15, 32]. All of these aspects of the good life arise from using intuition to grow in awareness of who you really are and what you truly value so that you can flourish (i.e., function with happiness, plasticity and virtue).

In psychoanalytic terms, healthy and wise people function using the mature defenses of sublimation (i.e., letting go of desire for personal pleasure to accomplish something meaningful or beautiful, like an artistic creation), altruism (i.e., serving others unselfishly), hopeful anticipation (i.e., anticipating and preparing for possible future adversity by living moderately) with a sense of humor and humility [106]. People with creative characters are the individuals who are most aware of their need for coherence and self-actualization, which leads them to work on the development of wisdom and integrity [32]. Hence the healthy life is good life, and the good life is also the happy life. Lives that are healthy, happy, and good all involve doing what you value with flexibility, integrity, and wisdom.

## Conclusion – People Create Health

Positive development of all three aspects of character are needed to promote healthy functioning, plasticity, and virtue [20, 78]. Unfortunately, most contemporary measures of well-being and resilience are largely explained by only Self-directedness and Cooperativeness; such measures fail to recognize the critical contribution of Self-transcendence [107–109].

Current research has clearly established that the components of health care and health promotion have only weak and inconsistent effects when experimental interventions apply them individually [58, 59]. More recently we have show that the combination of these components is strongly related to all aspects of health in cross-sectional and longitudinal studies [36, 67, 110]. Developmental studies have made clear that health-related variables like personality and emotionality develop as complex adaptive systems with non-linear dynamics and many reciprocal feedback relationships, so that the same antecedent variables can have multiple clinical outcomes (i.e., multifinality) and different antecedent variables can have the same outcome (i.e., equifinality) [111, 112].

Now it will be important to show that experimental interventions to change personality cause changes in health outcomes. Only when we can show strong and consistent improvements in health will we be justified in concluding that we have an well-informed understanding of the causes of health and the mechanisms of effective health promotion. Experimental trials of health promotion directed to cultivating creativity and well-being are underway under the auspices of the Anthropedia Foundation (see <http://anthropedia.org>).

All data that is currently available do suggest that the optimization of the efficacy of health promotion requires the cultivation of the creative character profile in one's self and in others. We cannot effectively encourage others to do what we neglect to do ourselves. As Gandhi is reputed to have said [113, 114], "Be the change you want to see in the world."

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