Positive Illusions: How Ordinary People Become Extraordinary.

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Taylor, S. E. (2011). Positive illusions: How ordinary people become extraordinary. In M. A. Gernsbacher, R. W. Pew, L. M. Hough, and J. R. Pomerantz (Eds.), ***Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society*** **(pp. 224-228). New York: Worth Publishers.**

Our investigations of stress and health began in the 1970's when Judith Rodin invited me to participate in a cancer conference to address social psychology's contribution to understanding psychological responses to breast cancer. My first reaction was that we had little to say, but I soon realized that there were many bases for hypotheses, especially in the social cognition literature. Accordingly, in 1980, Rosemary Lichtman, Joanne Wood, and I conducted an investigation with breast cancer patients in an attempt to understand what factors helped them to cope with the stress of their illness and get back to normal (Taylor, Lichtman, & Wood, 1984). Initially, we were operating with a homeostatic concept in mind. That is, our implicit thinking was that stress produces temporary disturbances in psychological functioning which is then restored by coping efforts that help people return to their previous psychological state.

We were quickly disabused of this naive idea. In account after account, we heard not how these women had gotten back to normal but how their lives had changed, often for the better. Many women told us that the experience had forced them to develop or draw on strengths they did not know they had (Taylor, 1983). Many of the women also told us that the experience had forced them to identify what was truly of value in their lives, and relationships, especially with children, were chief among those discoveries. Other women expressed the feeling that they had discovered what was meaningful in life and expressed regret that anyone would have to go through such a stressful experience to reach those insights.

But there was a disturbing component to these stories as well. In many cases, the women were exhibiting what we came to call *positive illusions*, namely, falsely positive beliefs about their abilities to stave off a recurrence of the illness or to combat an advancing metastatic condition. We asked a clinician whether these false beliefs were worrisome and were assured

that they were normal and not indicative of an underlying psychological problem. However, it was this aspect of coping with illness --positive illusions-- that captured our enduring interest.

These insights were first published in a 1983 paper on cognitive adaptation to illness (Taylor, 1983). I suggested that the ability to successfully cope with cancer depended heavily on restoring a sense or mastery, gaining a sense of meaning, and restoring self-enhancing self perceptions. All of these beliefs typically suffer during the acute illness experience, and so coping efforts seem to focus heavily around these three themes.

Subsequent to our work with breast cancer patients, Jonathon Brown and I investigated whether positive illusions could be identified in normal people not going through intensely threatening health experiences like cancer to see if they were similarly adaptive. Taylor and Brown (1988) documented the existence of very similar positive beliefs in normal samples. That is, we reported evidence that people hold self aggrandizing self perceptions, an illusion of control, and unrealistic optimism about the future. We maintained that far from being maladaptive, these positive illusions were associated with the criteria normally associated with mental health: the ability to be happy or contented, the ability to care for and about others, the capacity for creative and productive work, and the ability to meet setbacks, challenges, and stressors of everyday life with equanimity and adaptive coping efforts. This theoretical perspective generated many dozens of empirical investigations, and the article proved to be highly influential with more than 1,800 citations to date.

The significance of positive illusions and their beneficial effects stems in part from the challenges they pose to traditional models of mental health. Until this time scientists and clinicians had largely regarded departures from rationality primarily as errors to be corrected. We

showed that certain forms of irrationality have their functions and can be adaptive, leading to better outcomes than more realistic perceptions would afford.

The work on positive illusions prompted several lines of empirical work. We identified the conditions under which positive illusions are most likely to exist and how they exert beneficial effects on motivation and performance (e.g., Armor & Taylor, 2003; Aspinwall & Taylor, 1992; Taylor & Gollwitzer, 1995). We uncovered how social comparison activities under threat are motivated to maximize both their informational value and their ability to restore or maintain positive self perceptions (Taylor & Lobel, 1989). Armor and Taylor (1998) showed not only how unrealistic optimism is associated with positive outcomes but how it can be reconciled with the need to monitor reality effectively.

Critiques of Positive Illusions

Nonetheless, the concept of positive illusions came under considerable fire (e.g., Colvin & Block, 1994). Some of the criticisms stemmed from misinterpretations. For example, the idea that more illusion is better is not a part of the positive illusions perspective. We argue that positive illusions typically stay within quite modest bounds largely because the feedback of the world is corrective. Illusions that are too extreme will be corrected into more modest proportions by feedback from the environment.

A particularly surprising paper by Shedler, Mayman and Manis (1993) reported evidence that people who have overly positive views of the self can be considered maladjusted when clinical interviews are the adjustment criteria. The Shedler et al. findings also suggested that "illusory mental health" (that is, people who claim psychological health that is contradicted by clinical evidence) is tied to stronger biological responses to stress, suggesting potential health risks of positive illusions. This evidence was surprising because our pilot data from the cancer

investigation suggested that people who held positive illusions about their ability to keep the cancer from coming back, in fact, live longer, controlling for initial prognosis (although these data remained unpublished due to a small sample size).

Accordingly, we replicated the Shedler et al. procedures and doubled the sample size. Contrary to their findings, we showed that self enhancers were evaluated as well-adjusted and well-liked by clinicians, peer judges, and friends (Taylor, Lerner, Sherman, Sage, & McDowell, 2003b) and that self enhancing cognitions were associated with healthier biological responses to stress as well (Taylor, Lerner, Sherman, Sage, & McDowell, 2003a; see also Creswell, Welch, Taylor, Sherman, Gruenewald, & Mann, 2005).

The realization that self enhancement, feelings of mastery, and unrealistic optimism not only have psychological effects on well-being but actually influence biological processes to affect health makes you realize how truly meaningful the act of psychological construal is and how important the psychological and biological effects of beliefs can be.

Origins of Positive Illusions

In recent years, we have explored the origins of positive illusions, that is, the factors that lead people to see themselves, the world, and the future in a positive, optimistic manner[1]. It appears that at least some of the variance in positive beliefs is accounted for by genetic factors, although the specific genes implicated have not yet been identified. This is an area of our current work. The origins of positive beliefs also lie in early family environment (Taylor & Stanton, 2007). Early nurturant experience helps to shape children's responses to stress, conferring the ability to respond to stress with positive beliefs and low biological reactivity. Correspondingly, a conflict ridden, neglectful, or harsh family environment in childhood has been linked to a high rate of mental and physical health disorders in adulthood (Repetti, Taylor, & Seeman, 2002).

To examine these interacting processes, in a series of studies, we assessed socioeconomic status (a contributor to chronic stress during childhood) as an input to family environment processes; assessed family environment through questionnaires and interviews; and examined psychosocial resources/distress, and alterations in biological stress regulatory systems as mediators of the impact of a nurturant family environment on mental and physical health. Our work to date has shown that this model has predictive power for explaining health outcomes. Specifically, we find that high SES and a positive family environment lead to the development of positive resources, such as optimism and social support, which are, in turn, tied to lower autonomic and neuroendocrine stress responses (Taylor, Lerner, Sage, Lehman, & Seeman, 2004), lower risk for metabolic syndrome (which is a risk factor for heart disease and diabetes, among other conditions) (Lehman, Taylor, Kiefe, & Seeman, 2005), and lower levels of C reactive protein (which is prognostic for heart diseases and depression, among other conditions) (Taylor, Lehman, Kiefe, & Seeman, 2006).

Current Directions

Our current work explores the genetic, early environmental, and neurocognitive origins of these resources in conjunction with their beneficial consequences. Specifically, we examine genes related to the serotonin and dopamine neurotransmitter systems; childhood socioeconomic status and early family environment as indicators of childhood environment; and neural mechanisms (ACC, amygdala, hypothalamus, prefrontal cortex) that link socioemotional resources to low psychological and biological stress responses (cardiovascular, HPA axis, and pro-inflammatory cytokines). As such, our current work integrates perspectives from genetics, psychoneuroimmunology, health psychology, and social neuroscience.

We have also shown how early family environment can lead to dramatically different expressions of a common genotype, depending upon how nurturant the environment is. Specifically, people with the s/s form of the serotonin transporter gene (5-HTTLPR) who were in early or are in current environments that are intensely stressful experience an elevated risk for depressive symptoms; however, those with the s/s variant of the 5-HTTLPR who experienced early or current nurturant environments actually have a reduced risk for depressive symptoms as compared with those who have s/l or l/l variants of the 5-HTTLPR. Thus, the impact of the social environment can completely reverse the effects of a genetic risk factor (Taylor, Way, Welch, Hilmert, Lehman, & Eisenberger, 2006).

Implications

One of the charges for this volume was to identify the direct applications of our research to the lives of ordinary and extraordinary people. I would address that challenge by saying that our work helps scientists to understand how ordinary people become extraordinary. The most powerful aspect of our findings, at least to me, has been to see how people hold within themselves the abilities to construe circumstances which would seem to be inherently threatening, even traumatic, and not only adjust to them successfully but achieve a degree of heroism. We have used our research program of the past 25 years to try to identify the very best of human attributes and the power that those attributes have for achieving extraordinary human outcomes.

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Author's Notes

Preparation of this manuscript was supported by grants from the National Institute of Mental Health (MH056880) and the National Institute of Aging (AG30309).

Footnotes

[1] Our recent work has not focused as much on the "illusory" aspect of positive resources, but rather addresses the biological bases and health implications of the development of positive psychosocial resources more generally.