While there is already adequate research on the correlation between positive emotion and general health benefits, little has been done to discover the link between the cognitive qualities of optimism and physiological reactivity to stress. It is widely recognized among researchers that dispositional optimists (those who expect that good events will be abundant in the future) appraise stressful situations differently and hold a multitude of coping schemas,[[1]](#footnote-1) granting them a diverse variety of functional molds to adopt effective coping strategies to a number of stressful situations. The attempt is thus to discover whether physiological reactivity to stress is affected by having an optimistic outlook and how the cognitive processes and constructs associated with optimism affect one's physiology.

The biopsychosocial model of health observes the individual as a system of biological genetic predispositions, cognitive beliefs, and sociocultural situations that cooperate to result in the health of the individual. With this in mind, the health risk of stress will be viewed in the context of one's cognitions and biology, specifically how the cognitive aspects of optimism affect the biological underpinnings of the stress response.

Humans, of all species, react to the widest range of stressors, being that we may, unlike other species, imagine them (*Killer Stress*). Physiologically and psychologically, people react the same to all kinds of stressors. The same biological symptoms of stress can occur when one fears they will fail a test, and if they actually do fail the test, for example. The sympathetic nervous system, necessary for automatic, non-conscious bodily functions, prepares the individual for the well-known "fight-or-flight" reaction regardless of whether the stressor is imagined or real. The brain arouses the individual, increases blood pressure, and releases stress hormones such as norepinephrine and cortisol to excite and invigorate the body for evasive actions.

While short-term, acute stress is beneficial to our survival (e.g. in the case of physically avoiding a life-threatening situation or becoming more alert for a task), chronic stressors are damaging. Robert Sapolsky, professor of biological sciences at Stanford University, explains that long-term or constant exposure to stress hormones is corrosive tothe body and also dampens immune system effectiveness. In this way, high levels of persistent stress harmfully influences health and makes diseases such as “type 2 diabetes, gastrointestinal disorders, impaired growth in children, failure to ovulate in females, and erectile dysfunction in males” (Sapolsky 96).

 Optimism, however, is a “significant predictor” of better health and less occurrences of diseases or illness (Rasmussen et al.), and has been said to be associated with longevity (“Optimistic”). In addition, optimists who are diagnosed with a disease or serious illness have high instances of physical recovery (Iwanaga et al. 1-2). When taking a pessimistic outlook, though, recovery was slow and illness developed more quickly. In patients with breast cancer, pessimism was couple with high levels of distress both before and months after surgery (Carver et al. 385-386). In another study by Reed et. al., Senior Project Officer for the World Health Organization, those who were HIV-positive who had more pessimistic expectations developed symptoms associated with the virus more rapidly and more commonly died of AIDS (360). Overall, a longitudinal study by Christopher Peterson, a Psychology professor at the University of Michigan, spanning 35 years found that pessimists at age 25 were unhealthier later in life than those who were optimists. “Pessimistic explanatory style predicted physical illness two and three decades later…even when initial physical health and initial emotional health [were] controlled” (Peterson et al. 26).

A clear, significant link can therefore be established between positive, optimistic thinking and immunology. For many patients dealing with a stressful disease, optimism seems to play a role in boosting the immune system in order to lessen the reactivity to the stressors accompanying the disease. Although not all ill health is derivative of an overload of stress, these findings certainly give heed to optimism being a strong contributing factor. Yet, this leads to the issue of what aspects of optimism lead to the improvement of health.

As optimism can be described as a life orientation, it essentially comes down to the explanatory styles and coping mechanisms used by optimists in regard to stressors. An explanatory style is the “cognitive personality variable that reflects how a person habitually explains the causes of bad events.” Optimists tend to attribute the causes of bad events as “external, unstable, and specific,” while pessimists would explain bad events as having “internal, stable, and global” causes (Peterson and Avila 128). This essentially equates to optimists viewing negative situations as the result of outside forces that can be controlled. And conversely, pessimists viewing negative situations as the result of internal forces that are uncontrollable. This method of thinking is most commonly associated with learned helplessness and may explain why health declined when a pessimist was faced with a terminal illness. Yet, those who used an optimistic explanatory style more frequently “engaged in health-promoting activities” (Peterson and Avila 1).

Furthermore, Kenneth Hart, psychology professor at University of Windsor, and James Hittner, professor at College of Charleston, explain that optimists cope by using more “potentially adaptive” strategies including problem-focused coping (attempts at reducing stress by attacking the source of the problem) and seeking social support, while avoiding less adaptive strategies like avoidance coping. The researchers continue by stating this phenomenon is also quite “robust” throughout most studies (835-836). Although one would generally expect confrontive coping strategies aimed at solving the problem causing distress would be most advantageous, coping strategies are largely dependent on the context in which they are utilized.

Edward Peacock and P. Wong, professors at the University of Toronto, Canada, observed that the coping strategies utilized for stressful events were dependent on cognitive appraisals of the situation and its controllability. According to their congruence model of effective coping, a certain appraisal of situational characteristics will activate a certain coping schema that matches the appraised characteristics. Further, the activated schema will then allow for the most effective selection of coping strategies. Peacock and Wong found that appraisals of controllability significantly affect the amount and type of coping used. Situations that were appraised as controllable were coped with problem-focused and confrontive coping far more often, for example.

Given the propensity for optimists to often view problems as controllable and employ problem-focused coping frequently, it makes sense that optimists would be more efficiently equipped with the necessities for reducing stress. It is likely to be the case that optimists, with their more plentiful coping schemas and explanatory styles, are likely to see more situations in a controllable light than a pessimist. Or, at the very least, be more likely to recognize a controllable situation when it presents itself. On the contrary, a pessimist is passive and has a greater propensity to ignore or avoid a controllable stressful situation and relinquish chances to cope in a confrontive manner. In this way, optimism is a very effective means of understanding and controlling a problem situation producing chronic stress.

I hypothesize that these cognitive aspects allow the optimist to analyze a stressful situation as it arises, and through efficient means of mental coping, actually reduces the level of stress the body would typically undergo if coping was unorganized, ineffective, or unmatched to the situation. Hart and Hittner, for example, explain that

…both theory and research have suggested that variability in anger-reactivity is associated with different degrees of hemodynamic and neuroendocrine responsivity. Thus, it is possible that optimism may be inversely related to illness because optimists show dampened emotional arousal and concomitant low levels of physiological and neuroendocrine reactivity when provoked by stressful circumstances. (828)

Essentially, blood flow and pressure, in addition to the interactions between the nervous system and hormonal secretions, are affected by the consistent thinking styles of optimism. When provoked by a stressful circumstance, an optimist is expected to show less emotional arousal and activity of stress hormones, allowing him/her to be less adversely affected by typical high stress levels. If the optimist is better equipped with the techniques to solve stressful problems quickly and as efficiently as possible *cognitively*, it in turn should confirm less effort *physiologically* to attempt to cope. And this in turn produces enhanced physical health.

 Evidence for this hypothesis is mixed, however, as Hart and Hittner even admit. ……..

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1. mental concept/model that organizes and interprets information from the world [↑](#footnote-ref-1)