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Psychology

THE STRESS PARADOX : RECONCEPTUALISING STRESS

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ABSTRACT

These days, society and the workplace put an unparalleled level of pressure on people. We thrive on performance, competition, and perfection, which leads to an insidious increase in stress. Most studies look at stress, its causes stress and often have a bias or assumption that stress is bad and should be avoided. It is true that stress as in distress should not be appraised for anything other than what they are: unacceptable and damaging to learning. However, focusing only on distress may be limiting as it curtails recognition of the positive benefits of stress.

Various scales to measure levels of stress have been developed, but these quantify stress without considering the difference between positive and negative effects. Therefore, it is important that research looks at both distress and eustress to open the possibility of identifying and quantitatively framing stress in a positive manner.

To understand the stress in a positive light, the researcher analysed the omnipotent signs of eustress, it's impact in all social spheres was examined and evaluated using case studies and the Perceived Stress Scale as a basis for survey. In the paper, the researcher decodes both ends of the 'stress' spectrum to bust the negative connation's around the word stress. The researcher aims to redefine 'stress' as we know it and reconceptualize stress as a healthy human defence mechanism and a positive emotion.

KEYWORDS :

INTRODUCTION

Stress

n.

1. the physiological or psychological response to internal or external stressors. Stress involves changes affecting nearly every system of the body, influencing how people feel and behave.

Stress is your body's response to anything that requires attention or action. It can be defined as any type of change that causes physical, emotional, or psychological strain. Stress can be short-term or long-term. Both can lead to a variety of symptoms, but chronic stress can take a serious toll on the body over time and have long-lasting health effects.

Stress

Originally, the terms "stress" and "distress" were seen as two different concepts. The term "stress" was initially used in the contexts of metallurgy, physics, and mathematics, or as a verb meaning "to give particular emphasis". The term "distress" was associated more with biological manifestations such as respiratory and cardiac distress or digestive disorders. The concept of individuals being in distress, as opposed to biological systems, became evident in the 1950s with reference to people in distress, the distress of schoolchildren.

Today, the words "stress" and "distress" are used interchangeably. The presence of stress tends to be portrayed as a hindrance to learning and existence in general. In modern world, stress is mostly considered to be a sickness and the term "stress" is frequently equated with an adverse outcome of an experience but not all types of stress are harmful or even negative.

There is much evidence that stress does not equal distress. Hans Selye (1974) proposed four variations of stress. On one axis he located good stress (eustress) and bad stress (distress). On the other was over-stress (hyperstress) and understress (hypostress). Selye advocated balancing these: the goal would be to balance hyperstress and hypostress perfectly and have as much eustress as possible.

Eustress: Meaning and Origin

Originating from the Greek root eu- which means "good" (as in "euphoria"), Eustress is a beneficial or healthy response to a stress, associated with positive feelings. It is described as "an optimal amount of stress" with positive outcomes. Eustress is defined by how one perceives the stressor (e.g., a negative threat versus a positive challenge) and the positive response to the stressor which can depend on one's current feelings of control, desirability, location, and timing of the stressor. Potential indicators of eustress may include responding to a stressor with a sense of meaning, hope, or vigour.

Eustress can fuel physiological thriving by positively influencing the underlying biological processes implicated in physical recovery and immunity. Eustress has also been positively correlated with life satisfaction and well-being.

When an individual appraises a situation as stressful, they add the label for distress or eustress to the issue at hand. There are several factors that may increase or decrease one's chances of experiencing Eustress. Mindset is the most significant factor in determining distress versus eustress. Optimistic people and those with high self-esteem contribute to eustress experiences. The positive mindset increases the chances of eustress and a positive response to stressors. If a person enjoys experiencing new things and believes they have importance in the world, they are more likely to experience Eustress. Stress is influenced by hereditary predispositions and expectations of society. Thus, a person could already be at a certain advantage or disadvantage toward experiencing eustress.

The theory of stress as a **stimulus** was introduced in the 1960s and viewed stress as a significant life event or change that demands response, adjustment, or adaptation. Holmes and Rahe (1967) created the Social Readjustment Rating Scale (SRRS) consisting of 42 life events scored according to the estimated degree of adjustment they would each demand of the person experiencing them (e.g., marriage, divorce, relocation, change or loss of job, loss of loved one). Holmes and Rahe theorized that stress was an independent variable in the health-stress-coping equation — the cause of an experience rather than the experience itself. While some correlations emerged between SRRS scores and illness (Rahe, Mahan, & Arthur, 1970; Johnson & Sarason, 1979), there were problems with the stress as stimulus theory. The stress as stimulus theory assumes:

1. Change is inherently stressful.
2. Life events demand the same levels of adjustment across the population.
3. There is a common threshold of adjustment beyond which illness will result.

Rahe and Holmes initially viewed the human subject as a passive recipient of stress, one who played no role in determining the degree, intensity, or valence of the stressor. Later, Rahe introduced the concept of interpretation into his research (Rahe & Arthur, 1978), suggesting that a change or life event could be interpreted as a positive or negative

experience based on cognitive and emotional factors. However, the stress as stimulus model still ignored important variables such as prior learning, environment, support networks, personality, and life experience.

Eustress in Childhood and Adolescence

Stressful events are inevitable, and built-in as part of development. Not all stressful events are negative. Without them, there is no growth, only stasis. Recent research suggests that those who undergo, and successfully resolve, identity crises have a greater sense of personal well-being than those who do not.

Causes of Eustress

Given that the consequences of stress can involve both positive and negative outcomes, actively (re)-framing what one perceives stressors may be key in facilitating adaptive responses to stress as causes of Eustress. Two important factors play an important role in inducing Eustress:

1. Events

Eustress happens when we confront a situation, we believe we can manage or control.

Here's an example: A child is coasting down a hill on a bike with just one hand on the handlebars. When she sees a pothole up ahead, she feels stress and instinctively puts her other hand on the bars. In less than a second, her brain goes into survival mode. It tells her heart to pump blood to her legs, her vision gets a little better because her pupils open to take in more light, and she's ready for evasive action. She guides herself around the hole and continues safely down the slope. In this case, she quickly handled the danger without a problem. It was good stress that helped her meet the challenge, because she believed she could do it. The brain loves success and will store the memory of this event. The next time this child faces such a dangerous situation, this positive memory will help her deal with it. Good stress makes us stronger, ready to take on new challenges. Soon, she's faced with a new danger. It suddenly starts raining hard, and big puddles form on the bike path. She grips the handlebars tightly. This time she's feeling a greater level of stress because the danger has increased and is lasting longer. Still, she believes she'll make it home safely. Why is that? She's been in situations like this before and succeeded. She knows she has the skill to do it again, and that gives her confidence. She's experiencing tolerable stress. And the next time she faces such a challenge, it's more likely she'll be ready for it. But now, the situation changes again—for the worse. The rain is coming down harder now. Lightning is flashing, she's having trouble seeing, and she takes a wrong turn. She's never ridden in such terrible conditions, so she's never had the experience of getting through them. She doesn't feel capable, and she doesn't feel safe. In fact, she's overwhelmed by fear. This is bad stress—and it's toxic. It happens when we're in a threatening situation that goes on and on, and we don't feel like we're able to get through it. Bad stress erodes confidence and makes us question our ability. At this point, the girl lets the bike drop in the mud and she runs, as fast as she can, toward her home.

2. Environment

A useful introduction on the subject is a Ted Talk by Kelly McGonigal (2013), who explains how in her career as a health psychologist, her biggest mistake was to tell people that stress was awful, and "something that makes you sick." While this came from a personal goal to make people happier and healthier, she realized that she was instead doing "more harm than good." This realization also coincided with the publication of a study for which 30,000 interviews were conducted in the United States, over five years, asking informants the following question: *do you believe that stress is harmful to your health?* The results were astounding. Those who had replied "yes" (nearly 186 million U.S adults), exhibited worse health and mental health outcomes than those who had answered "no".

This relates to earlier points around the perception of stress: believing that stress is harmful can impair people's overall mental and physical well-being. Belief influences health outcomes, and in this context, the ways people experience stress. McGonigal became an unconditional advocate of eustress, advising people to accept a given stress response, and rethink it as helpful, as opposed to detrimental. This approach, she argues, works best. Over time, they can develop a mindset equipped to deal with challenges rather than fear them. This acceptance builds resilience. Resilience benefits people and empowers them to feel that they can pursue what creates meaning in their lives, while trusting their strength to handle potential stressors. This is a tremendously empowering asset. In McGonigal's words, "*you create the biology of courage*" when you interpret the physical symptoms of stress – such as a pounding heart – as a "call for action," as opposed to a call for dread.

Preparing for Eustress

In a world where everyone is focused on the negative aspects of stress, psychologist Oddgeir Friborg, an associate professor of psychology at the University of Tromsø, takes an opposite view. He believes that stress is healthy, especially for children. Friborg believes that everyone needs to experience stress because this is how we learn to solve challenges, build knowledge and acquire new skills. He emphasizes on the following as preparing children and adolescents:

1. Kids and teens need a little push

If, for example, children are shy or timid and don't want to join other children at play, they need to be pushed in a supportive, but authoritative way, according to Friborg. There is the notion that children who do not like to speak in front of their peers should be allowed to avoid it, but is that right? Friborg says it is correct to push them because they must learn to cope with it. This will build the child's coping skills, and they will be better equipped to meet the challenges that come later in life. "If children never learn to cope with stress and conflict, how will they manage to handle stress and conflict as adults?" asks Friborg.

2. Must recognize boundaries

Friborg mentions "The person who is pushing must be aware of limits. The focus should be on developing the children's psychological strength, not destroying it". You must know where the boundary is. Parents must establish an environment where their children can learn to master the situation − and this is very important. He thinks children are supposed to be reinforced in their efforts to grow. This is best achieved by showing that you understand the child's feelings and by providing concrete and supportive advice. He also says that individuals who can handle stress are healthier, from a subjective standpoint, and have a more optimistic outlook on life. Being able to cope with stress liberates many positive emotions. The desire to learn increases. People who can cope with stress find it easier to forget negative and painful things, and they find it easier going through life. "Those who can cope with stress in everyday life have less aches and pains. Stressed people focus more attention on everything that is wrong, and that is of course quite natural, explains Friborg.

3. Family support and friendships protect us

One must develop personal skills and resources that provide a sense of control and purpose. Social skills are very important. "People who feel more proficient in social situations cope with stress better, probably because they find it easier to talk to others about their problems. If you have social skills, you are more prepared to handle your stress," says Friborg. Family support is the other factor that is protective. "Family unity is important. If a family has lots of conflicts and is not united, this contributes to an individual handling stress poorly," says Friborg. Other types of social resources will be extra important in this situation, such as friends or members of an extended family. "One should cultivate good friendships. You don't have to have many friends, but it is important to have some friends who you can lean on during life crises."

4. Genetics has a part to play

Diathesis is a person's predisposition or vulnerability to a medical condition, which can be a psychological or physical disorder. The terminology was first used in psychiatry in the study of schizophrenia, and later depression. A diathesis can be a biological genetic inheritance (hereditary), a vulnerability created by environmental stressors early in life (environmental)[1], or a vulnerability created by the *interaction* between hereditary and environmental factors (hereditary-environmental). The Diathesis Stress Model describes how the interaction of predisposition and environmental stress can result in a disorder. Some stressors, such as early life stresses, are risk factors. They can lower an individual's threshold of developing mental disorders, and allow subsequent stressors to trigger the disorders more easily.

- Early stress exerts a *formative influence* on children increasing their underlying vulnerability to psychological disorders.
- Later stress exerts a *precipitating or triggering influence* by activating the actual onset of the disorders.

This model helps to explain why some children are considered more resilient than others. When we feel that children are not being resilient, we need to remember that the apparent lack of resilience is the combined effects of genetic factors, environment or community. It is

not because our children are weak or stubborn. Second, the Diathesis Stress theory adds to the mounting evidence proving that tough love parenting, which focuses on creating unnecessary stress for children, does not work. Not only does tough love not work the way parent wants, i.e., toughen up their child, but it may also cause harm by catalysing the development of psychopathology.

Benefits of Eustress

Numerous theories and research has established the benefits of moderated Eustress in childhood and adolescence. Some of the benefits are:

1. Build interpersonal relationships

Social connection is one of the most protective factors against physical and mental health problems. When people feel loved and understood by another person, they feel less alone and isolated. Support groups, for example, are a great place for people to talk about their stresses with others, which builds compassion and, in turn, positive hormones. By opening up to one another, people feel better because they can relate to each other's struggles and validate their feelings, creating positivity out of a negative experience.

Erik Erikson's theory describes the impact of social experience across the whole lifespan. Erikson shows how social interaction and relationships plays a role in the development and growth of human beings. In his theory, Erikson presents the argument that stress can be viewed in a positive light. It can be our fuel instead of our brake. Success at psychosocial Stage 5:Identity Vs Confusion and Stage 6:Intimacy Vs Isolation acts as a trigger for positive stress for young adolescents. For example, the fear of emotional instability drives people to take risks in their relationships to satisfy their social and esteem needs. Thus taking on a safe amount of stress to develop a sense of strong personal identity.

2. Personal Growth

Stress-related growth is not an inevitable outcome when one deals with stressful events. However, in stressful events, negative experiences co-occur with positive ones, thus leading to personal growth. Several researches show that negative events such as cancer, heart attack, divorce, death of a significant other, can lead to positive outcomes like improved self-concept, self-awareness, coping and social skills. Schaefer and Moos (1992) outline three major types of stress-related positive outcomes:

- Enhanced social resources (improvement in the relationship with friends, extension of one's social network, etc.);
- Enhanced personal resources (improvement in the self-concept)
- New or improved coping skills (better problem-solving abilities, focus on active coping strategies, etc.). These improvements often are interrelated, as enhanced personal resources can lead to a decrease in social discomfort and consecutively a greater openness to social interaction, thus widening one's social network and triggering improvement in coping skills.

Factors such as: intrinsic religiousness, social support satisfaction, stressfulness of the negative events, positive reinterpretation and acceptance coping strategies, number of recent positive life events, were shown to be significant predictors of stress-related growth. Other individual factors associated to stress-related growth include: dispositional optimism, positive and negative affectivity, individual social network and social support, self-esteem, mastery and self-leadership. There are also environmental factors associated to stress-related growth such as: event type, stressfulness, time since event occurrence.

Present findings suggest that a very stressful event can produce personal growth only if it is coupled with several positive events. The negative and positive events might co-occur or at least occur successively in a certain time interval. Also, growth does not necessarily depend on abatement of distress or the resolution of the crisis.

3. Self-Esteem and Self-Efficacy

Greater professional experience means higher exposure to traumatic events in the case of the rescuers which may favour either enhanced coping strategies or enhanced abilities to distance from traumatic events, either from a cognitive perspective or an emotional one. It would be of great interest for us to measure individuals' growth potential at the beginning of their career as professional rescuers and to compare those levels with measurements taken at certain time intervals in order to assess if people with high growth potential are more prone to engage in professional rescue activities or, rather, they develop a better growth potential due to intense and frequent exposure to stressful events. Higher stress-related growth levels are associated to higher levels of self-esteem and perceived self-efficacy. People who show stress-related growth also show enhanced personal and social skills which can lead to an increase in self-esteem, improvements in problem solving skills, more satisfactory interpersonal relationships and focus on active coping strategies. On the other hand, people with high self-esteem do not tend to be easily discouraged when faced with stressful events, thus being able to focus more on the solving process and less on the emotional discomfort, leading to more efficient use of problem-solving abilities.

However, stress-related growth does not necessarily mean solving the stressful event, but a tendency to focus more on interrogations such as "what can I do?" or "how can I do it?" rather than "why did it happened?" or "who's to blame for?" Identifying a certain meaning in each stressful event leads to a more rational approach. At interpersonal level, focusing on problem solving and active coping can trigger positive behavioral and emotional responses from the others, strengthening personal relationship, widening one's social network. Enhanced social abilities can bring more opportunities to collaborate and cooperate with others, thus providing numerous and diverse solutions to problems, which can lead, after all, to a higher self-esteem and higher perceived self-efficacy. Therefore, the influences between stress-related growth, self-esteem and perceived self-efficacy are bilateral and strongly interrelated.

4. Great Motivator

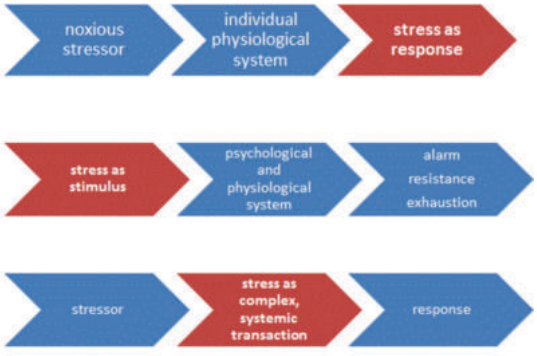
While heightened stress can feel overwhelming and decrease motivation, a little bit can go a long way when it comes to kickstarting your work. Medium levels of stress can enhance our motivation. For example, the stress of a deadline can help people focus and pay more attention because time is running out. We have all had the experience saying, 'oh I've got to get such and such done' but not being able to find the motivation to do it until we are stressed because it is due the next day and all of a sudden, the motivation is there. That fight or flight response can kick us into gear sometimes. Even though stress can feel overwhelming, it also forces people to problem-solve, ultimately building confidence and skills that are important for future experiences. With increased resiliency and confidence, people tend to feel less threatened and more in control of their situations. Allison Berwald, a licensed clinical social worker in New York City, says that using stress to face your fears or challenges can also help you work through experiences instead of avoiding them. After facing a fear, you will feel more equipped to handle it in the future, since you have already experienced it, she says.

Eustress: A Process for Learning

Stressors and stress are parts of a learning journey. There are several models which explain Stress as a dynamic process with stress, stressors and outcome as the players.

Transactional theory of Stress and Coping

In attempting to explain stress as more of a dynamic process, Richard Lazarus developed the transactional theory of stress and coping (TTSC) (Lazarus, 1966; Lazarus & Folkman, 1984), which presents *stress as a product of a transaction between a person (including multiple systems: cognitive, physiological, affective, psychological, neurological) and his or her complex environment*. Researchers introduced multiple variables to the stress-as-transaction model, expanding and categorizing various factors to account for the complex systems involved in experiencing a stressor. Different types of stressors emerged, such as event, situation, cue, and condition, which then fell into categories based on locus of control, predictability, tone, impact, and duration.

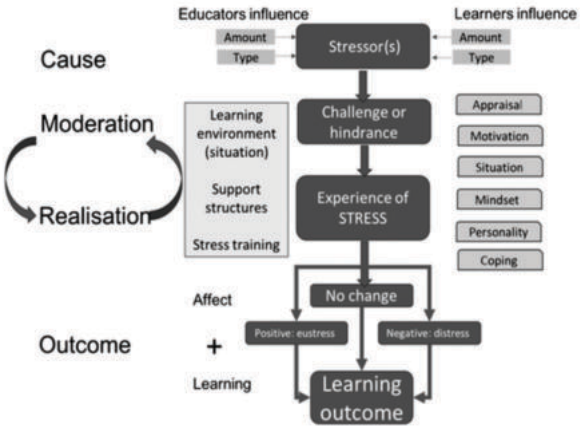


Theories of stress as a response, stimulus, and transaction

In his book *Psychological Stress and the Coping Process* (1966), Lazarus presented an elegant integration of previous research on stress, health, and coping that placed a person's appraisal of a stressor at the centre of the stress experience. How an individual appraises a stressor determines how he or she copes with or responds to the stressor. Whether or not a stressor is experienced as discomforting is influenced by a variety of personal and contextual factors including capacities, skills and abilities, constraints, resources, and norms (Mechanic, 1978). Lazarus and Folkman (1984) unpacked the concept of interpretation further in their model of stress appraisal, which includes primary, secondary, and reappraisal components. Primary appraisal involves determining whether the stressor poses a threat. Secondary appraisal involves the individual's evaluation of the resources or coping strategies at his or her disposal for addressing any perceived threats. The process of reappraisal is ongoing and involves continually reappraising both the nature of the stressor and the resources available for responding to the stressor.

Spector's Transactional Model of Stress

While studying effect of stress on learning, often one leans heavily on Spector's transactional model of stress, in which stress is a convergence between the environment and an individual. The model shows the pathways from the application of a learning stressor to its outcome.



The pathway from the application of a learning stressor to its outcome

The stressor(s): the cause of stress in learning

Learning starts with a stressor(s). A stressor is the force that is applied. It is represented as a challenge or learning expectation (e.g., learning how to perform a test in the lab, being questioned by a teacher, preparing for an assessment).

Constructivism and transformative learning theories align well with the concept of a stressor as a necessity for the subsequent development of learning. Constructive learning theory requires a learner to be actively involved in the process of constructing meaning or knowledge, whereas transformative learning results in a change in a person's viewpoint. Both theories require the learner to engage with potential internal dissonance (a stressor).

A stressor may not necessarily be determined by the "amount" of learning to be done but may refer to the "type" of learning expected. Challenge may come in different forms, such as in learning about a difficult topic, completing a skill or extracting important elements from a concept. Both the student and the educator may be able to influence the amount and type of stressor applied, although this is more influenced by the educator and the learning environment.

There are many examples the learning of a concept may not be a stressor for a student because the educator has been successful in explaining the concept well, but the first attempt to perform this procedure in a lab environment maybe a stressor.

A stressor cannot be considered as an isolated challenge. It may be combined and be additive. Many times, individual stressor may not elicit a negative response, but an accumulation of stressors may result in an intolerable level of stress. The accumulation of stressors may be greater than the sum of the individual stressors and turn the effect of the stressors from being challenging to hindering.

Moderation

The next step in the learning journey depends on how the learner moderates the stressor. How an individual interprets the influence of the stressor will influence the kind of stress he or she experiences, and whether learning takes place. Many individuals, consciously or unconsciously, start to modify their response to a stressor immediately. Whether an individual interprets stress as challenging or hindering will be influenced by several factors, most notably:

- Appraisal: response to a stressor is influenced by how the stressor is appraised or evaluated.
- Motivation of the learner: motive of a learner to learn is crucial in influencing whether learning will occur.
- Complexity of the situation: response to a stressor may be influenced by the situation, whether the environment is busy or quiet, and whether the context involves many people or a one.to.one situation.
- Mindset: A mindset or self.belief that being under stress is useful may have beneficial effects. Stress has been found to improve mental function, boost memory, and speed up brain processing. It has also been found that a stressor after learning "emotionally laden content" can enhance memory.
- Personality traits: a personality type that is predisposed to negative or positive responses to stressors, such as one that is perfectionist, subject to fear of failure or introverted, may influence a response to a stressor. Resilience, defined as the ability to "cope", is a personality trait that is particularly disposed to a positive response to stressors.
- Coping strategies: coping strategies allow the learner to modify the feeling of stress. Strategies where learners 'embrace' stress as opposed to 'cope' with stress are found to be more effective.
- It would be reasonable to summarize that a response to a stressor in the form of stress and the resultant outcome is totally within the ambit of the individual. However, educators have a role in supporting learners in interpreting stressors so that they result in eustress rather than distress. Educators may help the learner by altering the complexity of the situation or avoiding external stressors that threaten achievement of the task.

Realization

The moderation of the stressor by the learner may trigger a physical stress response. A physical stress response is an autonomic reaction to that stressor and is known as the first phase of "Generalized Adaptation Syndrome". The response may stimulate sympathetic nervous system activity and cortisol release; the heart rate may accelerate, and sweating may occur. This response was initially described as the "fight or flight response". It is an acute response to danger. However, it is unclear whether a fight or flight interpretation is applicable to learning because learning is seldom dangerous. Firstly, it may not be that all autonomic reactions to stressors lead to a fight or flight and secondly, fight or flee may not be the only possible reactions.

Educators have an important role in managing or moderating the learning environment to optimize the likelihood that a stressor will result in learning. If an education institution offers support to learners, its learners will be more likely to experience stress positively. The value of support is well articulated through Dornan et al's work looking at experiential learning environments. The potential that greater learning may be achieved when the learner is stressed or stretched can be aligned with the educational concept of the zone of proximal development, which refers to the difference between what is easy enough for a person to do on his or her own, and harder tasks that the same individual can complete only with support. Support allows the learner to set harder and more demanding learning tasks or, in other words, to deal with greater stressors.

Actualization: the outcome

The endpoint, the actualization of the learning journey, is how the stressor, and the moderation and realization of stress facilitate learning. Learning needs to have taken place at the conclusion of a learning journey; otherwise, stress has no positive role in learning. Two distinct outcomes can be considered: one refers to how the learner feels about the learning experience (eustress or distress or nothing), and the other concerns whether learning has been achieved.

Although further research on the impact of eustress on learning is

required, educators may have a role in ensuring stressors and learning are aligned and that stressors promote eustress rather than distress.

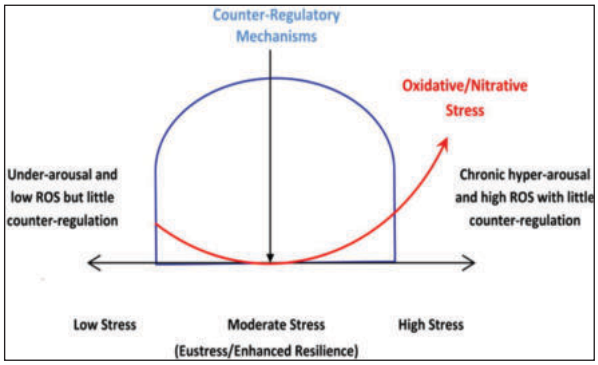
Eustress: Biological and Physiological Theories

Numerous research has been conducted to establish the relationship sources and response of Eustress to physical, biological, behavioural and psychological factors in humans.

Arousal Theory: Yerkes Dodson Law

Although the term "stress" carries a negative connotation, evidence suggests that under certain circumstances, stress exposures may have the potential to enhance an organism's performance and resilience. The first evidence that low-to-moderate doses of stress may have *beneficial* effects ("eustress") emerged over a century ago as an "inverted U" relationship between arousal and performance (Yerkes and Dodson, 1908).

The Yerkes–Dodson law proposes both a linear and an inverted U‑shaped relationship between arousal and rates of learning. It was developed through observations of mice subjected to various electric shocks as they attempted to return to a nesting box. The linear relationship related to rates of learning have generally been ignored, but the inverted U gained huge popularity. The inverted U proposes that learning increases with physiological stimulation (stress) to a point at which the stress becomes too great and performance decreases.



These U-shaped relationships suggest that greater perceived stress and anticipatory cortisol reactivity to an acute stress task will be associated with increased oxidative damage among chronically stressed caregivers. In contrast, among low-stress controls, these same factors either will not be significantly associated with oxidative damage, or will be associated with decreased oxidative damage, a manifestation of eustress and psychobiological resilience.

This psychological principle finds some support in the examples of inverted U relationships between glucocorticoid actions and various physiological targets. For example, cortisol bears an inverted U-shaped relationship with mitochondrial function, a key regulator of oxidative stress. In cell culture models, brief administration of high-dose cortisol resulted in improved mitochondrial function and neuroprotective effects, whereas long-term high-dose cortisol administration dramatically decreased mitochondrial function and promoted cell death. Moreover, at low concentrations, reactive oxygen and lipid species activate cytoprotective pathways that increase antioxidants. Corticosterone administered at the time of immune activation in doses that mimic a physiological stress response enhances the ensuing immune response, while pharmacological doses or chronic administration are immune-suppressive.

However, this law fails to apply to human learning because the shocking of mice performing simple physical tasks cannot be compared to complex human psychology and context‑related stress. There is little empirical evidence in human learning, such as attention, to support this law. The Yerkes‑Dodson law may fall short, if applied to human learning but it is popular and guards against over‑generalization or over-utilization.

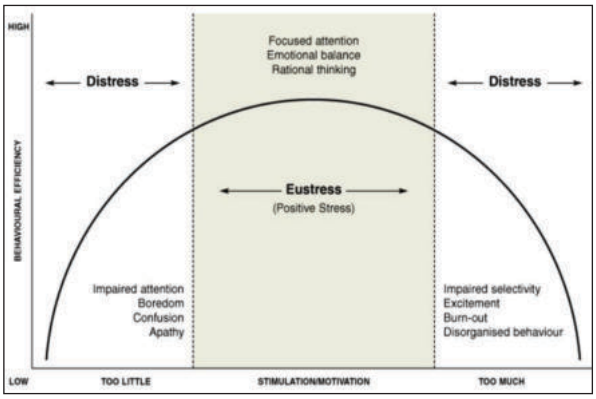
Flight-or-Flight Response

Essentially, stress is the outcome of the primal reaction known as *fight-or-flight*. During this reaction, certain hormones like adrenaline and cortisol are released. This speeds the heart rate, slows digestion, shunts blood flow to major muscle groups, and changes various other autonomic nervous functions, giving the body a burst of energy and strength.

The mechanisms of the fight-or-flight reaction are the following:

- A stressful event occurs, and an immediate response is triggered by the autonomic nervous system.
- The stress response activates the sympathetic nervous system, flooding the body with hormones such as cortisol and norepinephrine (McGonigal, 2008).
- These hormones heighten the senses, increase the heart rate, increase the blood pressure, and plunge the brain into a state of hyper-awareness.
- The part of the brain responsible for emotional calm and physical relaxation, the parasympathetic nervous system, is overwhelmed.
- A neurological cocktail of hormones and the overactivation of brain areas causes a burst of energy and focus, coupled with emotions such as anger, aggression, and anxiety.

Our fight-or-flight brain chemistry has remained as a basic feature of human psychological processes, even when we do not need it. In real danger, this reaction is very useful; it saves humans from dying. If we perceive a **stressful situation**, no matter how serious the threat, this reaction ensues. This means it is possible to experience intense physical symptoms at the mere thought of something stressful. Since the stressor is often only a perceived stressor, rather than a real one, changing the way the person relates to the stressor can influence the intensity of the experience.



If we do not want this fight-or-flight tendency to rule us, then it is crucial to recognize eustress. As the figure above indicates, eustress can lead to focused **attention**, emotional balance, and rational thoughts. Distress, on the other hand, can cause impaired attention, boredom, confusion, apathy, excitement, burn-out and disorganized behavior. Eustress, in its best form, can induce a state of **flow**. Like eustress, flow is a focused state often induced by a healthy dose of challenge.

General Adaptation Syndrome

The body responds to stress in many ways. Readjusting chemical levels is just one of them. This section includes some examples of adjustments and changes. To measure the body's response to stress, psychologists tend to use Hans Selye's general adaptation syndrome. This biological model, often referred toas the "classic stress response", revolves around the concept of homeostasis. General adaptive syndrome, according to this system, occurs in three stages:

1. The alarm reaction. This stage occurs when the stressor is first presented. The body begins to gather resources to deal with the stressor. The hypothalamic-pituitary-adrenal axis and sympathetic nervous system are activated, resulting in the release of hormones from the adrenal gland such as cortisol, adrenaline (epinephrine), and norepinephrine into the bloodstream to adjust bodily processes. These hormonal adjustments increase energy-levels, increase muscle tension, reduce sensitivity to pain, slow down the digestive system, and cause a rise in blood pressure. In addition, the locus coeruleus, a collection of norepinephrine-containing neurons in the pons of the brainstem whose axons project to various regions of the brain, is involved in releasing norepinephrine directly onto neurons. High levels of norepinephrine acting as a neurotransmitter on its receptors expressed on neurons in brain regions, such as the prefrontal cortex, are thought to be involved in the effects of stress on executive functions, such as impaired working memory.

2. The stage of resistance. The body continues building up resistance throughout the stage of resistance, either until the body's resources are depleted, leading to the exhaustion phase, or until the stressful stimulus

is removed. As the body uses up more and more of its resources, it becomes increasingly tired and susceptible to illness. At this stage psychosomatic disorders first begin to appear.

3. The stage of exhaustion. The body is completely drained of the hormones and resources it was depending on to manage the stressor. The person now begins to exhibit behaviors such as anxiety, irritability, avoidance of responsibilities and relationships, self-destructive behavior, and poor judgment. Someone experiencing these symptoms has a much greater chance of lashing out, damaging relationships, or avoiding social interaction at all.

The first step to controlling GAS is to understand what triggers stress. Different things trigger stress for different people. It is important for a person to identify what situations and events are particularly stressful for them. It may then be possible to make lifestyle changes to reduce exposure to these triggers. When it is not possible to avoid a stress trigger, it is important to find a way to reduce the impact it has on body and mind. These changes will occur in the body regardless of whether the perceived stressor is considered eustress (positive or pleasant) or distress (negative or unpleasant). Ultimately, this means that we need to take active steps in managing all of our stressors, as it can build up and potentially cause harm to our health otherwise.

Thus, stress might not always be the enemy. Research shows that positive stress can strengthen the immune system, enhance memory and learning, and improve decision-making skills. In some cases, short-term stress lasting as little as a few hours can impair brain-cell communication in areas associated with learning and memory, researchers have found.

https://www.edutopia.org/blog/can-stress-help-students-renee-jain#:~:text=Stress%20might%20not%20always%20be,and%20improve%20decision%2Dmaking%20skills

SURVEY

Aim

To assess the perceived Eustress among high school children in Mumbai.

METHODOLOGY

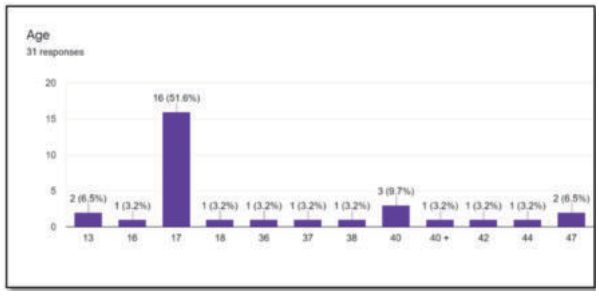
The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way; rather indicate the alternative that seems like a reasonable estimate.

A sample of 20 people was selected in Mumbai. The participants had to complete an anonymous online survey, which was made using Google forms. The questionnaire consisted of two parts. The first part consisted of personal details like age and gender. The second part consisted of 10 questions based on the Perceived Stress Scale - a classic stress assessment instrument. The tool, originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions on this scale ask about one's feelings and thoughts during the last month. In each case, the participant was asked to indicate how often they felt or thought a certain way. Although some of the questions are similar, there are differences between them and should be treated as separate questions.

For each question the participant had to choose from the following alternatives:

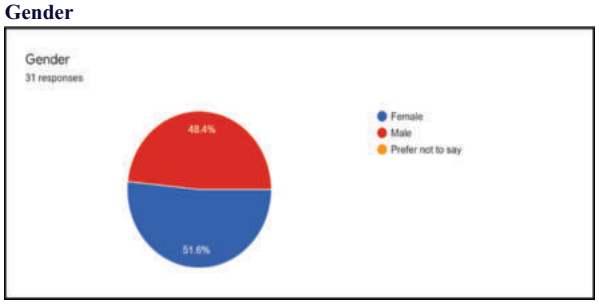
1-never
2-almost never
3-sometimes
4-fairly often
5-very often

Age



The survey was sent to participants from two different age groups in Mumbai. One group was to reflect the responses of participants in their adolescent years, teenagers whose age ranged from 13 to 18. The second group presented individuals ranging from 35 to 50. They reflected opinions of middle and late adulthood. The majority of participants were 17 years old (16 participants- 51.6%). There were 4 participants who were 40 years old (12.9%), and 2 participants who were 13 years old and 47 years old (6.5%). The age was recorded to make sure that the views of many participants are reflected in the study and age does not become a confounding variable, rather, another independent variable

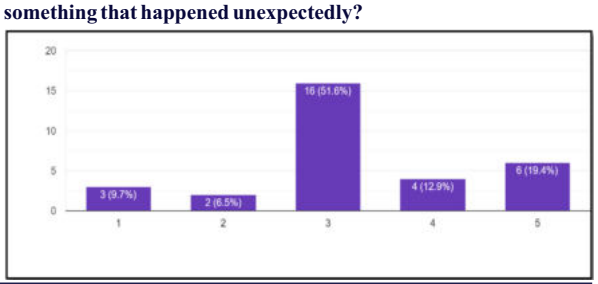
Gender



The participants were asked to indicate which gender they identify with. This was to determine whether gender was a confounding variable in the responses given because of the topic's biological basis. The majority participants were female (51.6%). The percentage of males was 48.4%. All participants chose to identify with these two options. The third option 'prefer not to say' and 'other' were not used.

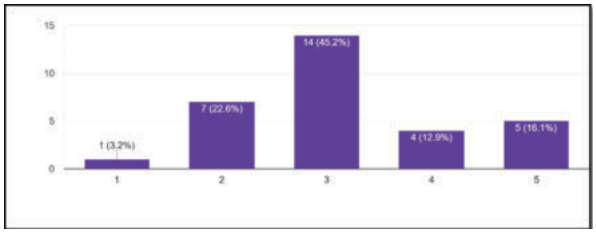
Data Analysis

Q1. In the last month, how often have you been upset because of something that happened unexpectedly?



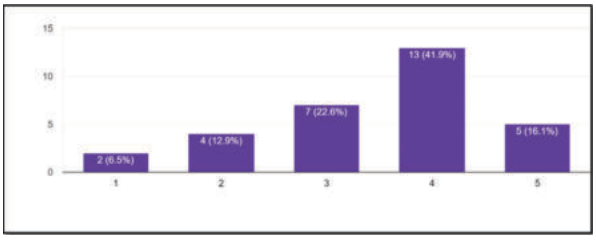
The majority of participants chose the option 'sometimes' indicated by number 3. They reported an ambivalent stance of getting upset because of something that had happened unexpectedly. 16 participants chose this option which amounted to 51.6%. The second greatest number of responses came for the value 5, which indicated participants were very often stressed in the last month about unexpected happenings (19.4%). Least number of participants chose the value 2, which indicated 'almost never' (6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (32.3%)

Q2. In the last month, how often have you felt that you are unable to control the important things in your life?



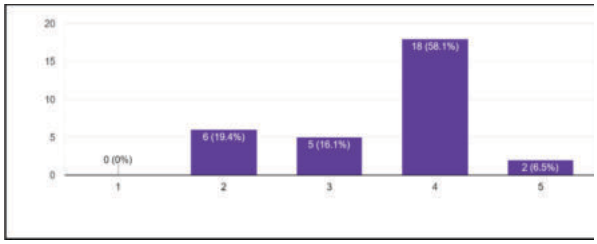
The majority of participants chose the option 'sometimes' indicated by number 3. They reported an ambivalent stance in being able to control the important things in their life. 14 participants chose this option which amounted to 45.2%. The second greatest number of responses came for the value 2, which indicated participants were almost never stressed in the last month about achieving control (22.6%). Least number of participants chose the value 1, which indicated 'never' (3.2%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (29%).

Q3. In the last month, how often have you felt nervous and stressed?



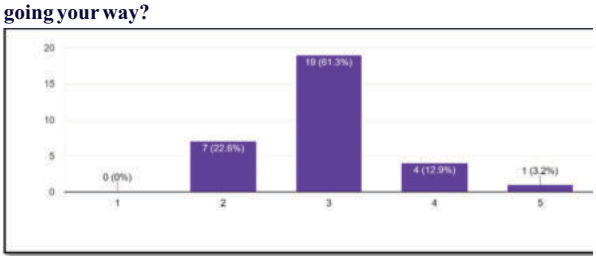
The majority of participants chose the option 'fairly often' indicated by number 4. They reported that in the previous month, they had felt nervous and stressed fairly frequently. 13 participants chose this option which amounted to 41.9%. The second greatest number of responses came for the value 3, which indicated participants were sometimes anxious in the last month (22.6%). Least number of participants chose the value 1, which indicated 'never'(6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (58%).

Q4. In the last month, how often have you felt confident about your ability to handle your personal problems?



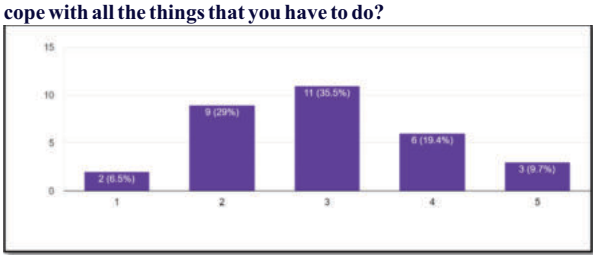
The majority of participants chose the option 'fairly often' indicated by number 4. They reported that in the previous month, they had confident about their ability to handle personal problems. 18 participants chose this option which amounted to 58.1%. The second greatest number of responses came for the value 2, which indicated participants were not extremely sure about their capacity to solve personal matters (22.6%). No participants chose the value 1, which indicated that they 'never' doubted their potential (6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (64.6%).

Q5. In the last month, how often have you felt that things were going your way?



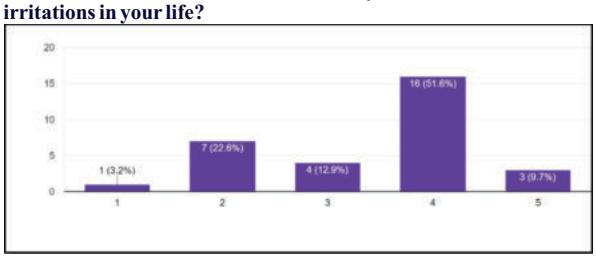
The majority of participants chose the option 'sometimes' indicated by number 3. They reported an ambivalent stance in feeling that things were going their way. 19 participants chose this option which amounted to 61.3%. The second greatest number of responses came for the value 2, which indicated participants were almost never worried about this situation presented (22.6%). No participants chose the value 1, which indicated that they 'never' felt that things were going their way. On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (16.1%).

Q6. In the last month, how often have you found that you could not cope with all the things that you have to do?



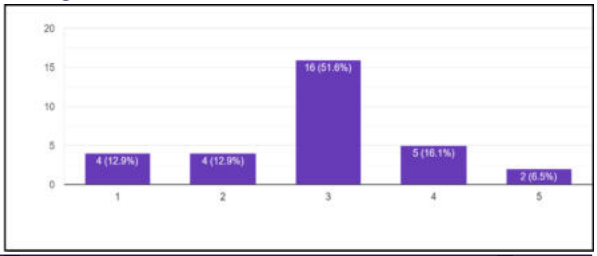
The majority of participants chose the option 'sometimes' indicated by number 3. They reported sometimes feeling that they could not cope with all the things they had to do. 11 participants chose this option which amounted to 35.5%. The second greatest number of responses came for the value 2, which indicated participants were almost never worried about this situation presented (29%). Least number of participants chose the value 1, which indicated 'never' (6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 1 and 2 compared to 4 and 5. (35.5%).

Q7. In the last month, how often have you been able to control irritations in your life?



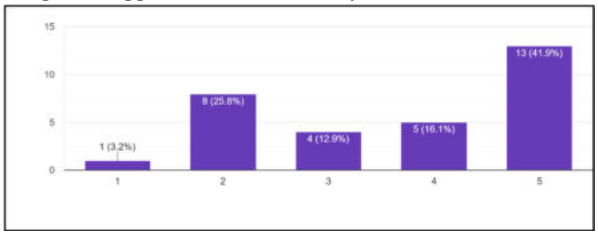
The majority of participants chose the option 'fairly often' indicated by number 4. They reported that in the previous month, they had effectively been able to control irritations in their life. 16 participants chose this option which amounted to 51.6%. The second greatest number of responses came for the value 2, which indicated participants were 'almost never' able to control these minor annoyances (22.6%). Least number of participants chose the value 1, which indicated that they 'never' (3.2%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (61.3%).

Q8. In the last month, how often have you felt that you were on top of things?



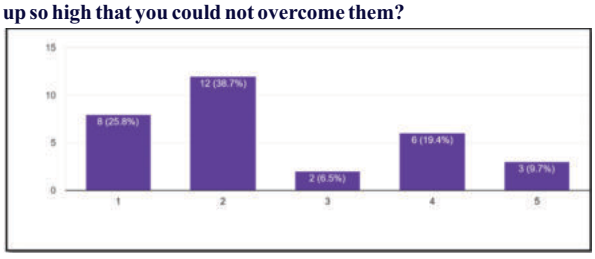
The majority of participants chose the option 'sometimes' indicated by number 3. They reported sometimes feeling that they were on top of things and their activities. 16 participants chose this option which amounted to 51.6%. The second greatest number of responses came for the value 4, which indicated participants were fairly confident with their to-do list (16.1%). There was a consensus between the values of 1 and 2, as an equal number of individuals felt that they were 'never' and 'almost never' on top of their things. Least number of participants chose the value 5, which indicated they 'very often' felt on top of things. (6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 1 and 2 compared to 4 and 5. (25.8%).

Q9. In the last month, how often have you been angered because of things that happened that were outside your control?



The majority of participants chose the option 'very often' indicated by number 5. They reported mostly feeling angered because of things that happened outside their control. 13 participants chose this option which amounted to 41.9%. The second greatest number of responses came for the value 2, which indicated participants were 'almost never' angered by uncontrollable outcomes (25.8%). Least number of participants chose the value 1, which indicated they 'never' frustrated. (3.2%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 4 and 5 compared to 1 and 2. (58%).

Q10. In the last month, how often have felt difficulties were piling up so high that you could not overcome them?



The majority of participants chose the option 'almost never' indicated by number 2. They reported very unlikely feeling that difficulties were piling up so high that they could not overcome them. 12 participants chose this option which amounted to 38.7%. The second greatest number of responses came for the value 1, which indicated participants were 'never' overwhelmed by these difficulties (25.8%). Least number of participants chose the value 3, which indicated 'sometimes' (6.5%). On comparing both the extremes of the scale we see that a larger number of responses were oriented between 1 and 2 compared to 4 and 5. (64.5%).

RESULTS AND DISCUSSIONS

Despite the potentially sensitive nature of the emotional aspects to the research, participants were happy to share their experiences, and led to the collection of rich data. The participant group was diverse in the stress levels and responses which led to accurate and intriguing analysis. The findings helped draw a distinction amongst the perceived severity of academic stressors, cultural stressors, social stressors, physical environmental stressors, life events, cognitive appraisal, and personality attributes.

Overall, majority of the younger demographic reported higher scores particularly in the academic and social stressors, while the comparatively older participants had higher scores in the life events and personality attributes. This difference of scores can be likely explained through the topics discussed in the paper – the maturation of primary and secondary appraisal of stress with age and knowledge about the distinction between eustress and distress.

Further, the older participants were more likely to identify and utilize eustress effectively, while the adolescents remained comparatively oblivious and reported higher levels of perceived stress. In conclusion, the methodology and participants analysed the stress paradox among adolescents through a variety of independent variables and reliable, valid techniques.

CONCLUSION

In conclusion, in today's society, we thrive on performance, competition and perfection, which leads to an insidious increase in stress and a clouded perception of this term. Stress causes damage that is often underestimated or overestimated, thus, it is a social phenomenon that should be closely examined and evaluated.

Stress touches all social groups and all age categories; no one can truly escape it. However, some people are more deeply affected by its consequences, depending on their personal, psychosocial, professional and health background. Why are we stressed? – it is the body's normal reaction to daily events.

The reason- there are several sources of stress and as many ways to react to it. Fundamentally, stress is a human defense mechanism, but it is important to not let it take over. It comes from various sources of a different nature, such as physical, psychological, emotional, social, etc. A stressful event can either be a happy one (wedding, birth, travel, etc.) or an upsetting one (getting fired, going through a divorce, the loss of a loved one, etc.). The stimulus can be either minor or very significant, and either temporary or chronic. We don't all react the same way to sources of stress, so it is important to identify what your stress triggers are to better face them.

Stress in certain levels can produce negative effects, but as highlighted in this paper, a deep evaluation of perceived stress must be conducted. When perceived as eustress and properly managed, it can be yield positive results. It can be useful to increase one's concentration, it contributes to creativity, increases productivity and helps develop new skills. But for that, you must learn to control it and better manage it. It is only when we learn to cognitively appraise it better, can we start reconceptualising it.

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