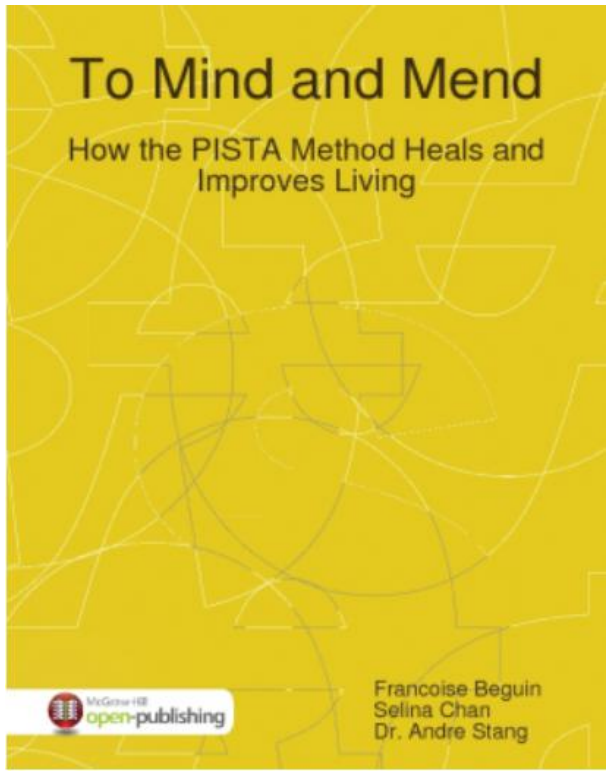
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Preface

The study of the human mind is a continually growing endeavor, which has given birth to various models for understanding a highly complex and powerful human faculty that is the mind.

Monumental theories like Freud's psychoanalytic approach and states of mind, though highly criticized, continue to influence recent studies and thoughts. Jung further explored these theories when he subdivided Freud's unconscious into the personal and collective unconscious.

In developmental psychology, Piaget challenged Aristotle's supposition of the mind as a blank slate at birth by hypothesizing that infants are born with a set of operating schema or reflexes that are used to adapt to the environment. His developmental model posits that a growing child builds mental structures or maps to understand and respond to physical and cognitive experiences within the environment. Kohlberg went beyond Piaget's model and believed that common social patterns are employed in cognitive and moral development.

While understanding the human mind, it became inevitable for theorists to probe and conjecture the power of the mind, to ponder on its influence on human behavior, and to identify and discover the self in the process. Some hypothesize that the self is separate from the body and should be treated as such. According to neurologist John Hughlings Jackson, the self is a manifestation of the highest level of consciousness that involves a reflective capacity that enables a person to become aware of individual experience in a way that gives a sense of an inner life (Meares, 1999).

Speculating on morality is also certain. According to theorists like Kohlberg and Damio, and on studies like those done in the Baby Lab at the University of London, morality is intrinsic as children are born with responses that predispose them to act in ethical ways (Geddes, 2015). Others posit that morality is developed as the individual experiences the environment and establishes social relations. Most of this development occurs in early childhood, but there are also studies that show that development continues up to the adolescent years.

While human behavior and actions are believed to be affected by past childhood experiences, numerous studies also reveal that other factors such as emotions, preferences, and cognitive biases affect daily thinking, decision, and, consequently, behavior. These suppositions are supported by data from recent advances in biotechnology, like magnetic resonance imaging, electromyography, and infant near-infrared spectrometry. These advances have offered new methods to explore and validate existing theories and to study mental responses to various conditions and stimuli.

The humungous collection of knowledge from all the studies on the mind suggests that people can have control over life by overcoming the greatest challenge that is to conquer fear. If all learnings on mental processes and behavior were integrated, then perhaps a set of guidelines that considers body, brain, and mind could be identified. These guidelines may be applied to daily life or to other activities that likewise aim to promote growth in all aspects of life—i.e., career, family, and society.

The PISTA Therapy is a successful method that harnesses an individual's capacity to direct the power and influence of the mind towards self-development in every stage of life starting from child-hood. It empowers as it helps rediscover one's self and reinforce strength and courage to face challenges. With the help of this meth-od, one's mind becomes an instrument to arrest one's fears and to consequently manage physical and emotional pain, achieve personal and interpersonal goals, and strengthen relationships with the self and with others.

Introduction

For centuries, social historians, social anthropologists, and developmental psychologists have studied the development of individuals across humanity. What we now commonly accept as the circle of life and its stages have been continuously analyzed and redefined over time, leading to an increased awareness of age and its categories. These classifications, according to historian Howard P. Chudacoff, are products of diverse social processes and the birth of new scientific and medical theories that associate specific physical and psychological characteristics and needs with corresponding ages.

To understand the individual's development, scientists used analytical constructs, such as the life stages, the family cycle, and the life course, in their studies. The life stages encompass the biological, psychological, and social changes that we all undergo from infancy, childhood, adolescence, adulthood, and up to old age. The family cycle, meanwhile, illustrates the phases that our families go through as its members mature and the family size expands and later contracts. Finally, the life course is our passage through major transitions like leaving our parents' homes, getting married, going to and graduating from college, and joining the labor force. These approaches highlight the fact that the life of every individual goes through radical transformations, which could bring big challenges to one's social, physical, and emotional wellbeing.

The changes arising from life phases can be difficult to manage but are subjective and distinct for every age or life stage. Children may experience great stress arising from inadequate skills for managing strong emotions, and teenagers may be overwhelmed with confusion from finding and discovering themselves while trying to belong.

Meanwhile, the experience of grief from the loss of a loved one is probably one of the most difficult emotions any individual could encounter. It likewise varies with each life stage. Sickness and death of a family member, a friend, or one's self can be terrifying and may debilitate people from living normal lives. Additionally, the impact of

these life challenges of daily living could be magnified by factors like culture, gender, economic conditions, health, decisions, and events.

Challenges appear in our lives not because they just happen to be in the way. These trials seem to gravitate towards us because these are often core issues rooted in our unexpressed fears. Those that remain unresolved resurface repeatedly over the course of life. Depending on our perspective, core issues may either bring conflict or open opportunities for transformation. Once we choose to view core issues as opportunities, we become capable of transforming fear into a tool for improving life. More importantly, it is possible for us to learn how to make it through life during these difficult times. The key is to keep in mind that our inner strength is powerful and that we can rely on it to surmount all life challenges.

This book introduces the PISTA Therapy as the method that helps us rediscover our inner strength and use this natural power as a vehicle to drive us through the bumpy road that is life. The method works for a wide range of concerns, including severe cases of post-traumatic depression and addiction as well as normal daily concerns like how to motivate one's self in the workplace.

There is also a section that illustrates how wonderfully amazing and powerful our brains are and that we can make it work for us. There are sections that make us understand how valuable we are and how important it is to embrace that we are, in fact, gems!

This book likewise attempts to inject inspiration with success stories of how people's lives and relationships have changed after the continuous practice of the PISTA Therapy. These are stories of professionals, parents, students, teenagers, and even children who have been empowered to achieve resiliency over life's challenges and to enjoy their lives more fully. Like them, we, too, could discover that we are mighty, strong individuals after all.

Part I: Perspectives on the Mind and Its Development

Over the years, great philosophers, psychologists, and neuroscientists have speculated on the nature and development of the mind. Each of their theories created a varying impact on how people, then and now, regard the mind. Some of these are so significant that one could clearly identify certain elements influencing recent studies.

Early Thoughts on the Mind

In talking about the brain as an organ, Hippocrates (ca. 460 BC–ca. 370 BC) did so by clearly referring to functions, which are commonly associated with the understanding of the mind. He talked about emotive mental functions (like pleasures, joys, laughter and jests, sorrows, pains, grief and tears), cognitive mental functions (like thinking and seeing), aesthetic mental functions (like distinguishing the ugly from the beautiful, the pleasant from the unpleasant), and ethical functions (like distinguishing the bad from the good) as at-tributes of the brain, and the brain alone. Through this, Hippocrates clarified the mind and brain connection where the brain is the facilitator of the mind or mental functions (Pandya, 2011).

The British neurophysiologist Charles Scott Sherrington (1857–1952) acknowledged some concerns with confining the functions of the mind in the brain, so he speculated on the location and functions of the mind. According to Sherrington, the brain is the provider of mind, and mental action occurs deep in the brain, away from the outside world (Zeman, 2007).

Aristotle (384 BC–322 BC) was the first to refer to the mind as the blank slate which man is born with. This slate is where experiences and perceptions are recorded to form the mind. For Aristotle, the mind is potentially whatever is thinkable. However, it is nothing until it has thought. “What it thinks must be in it, just as characters may be said

to be on a writing tablet on which nothing stands written yet: this is exactly what happens with mind" (Aristotle, 1994, Part 4).

Pinker (2003) dismissed the concept of the blank slate and thought that the mind cannot be a blank slate because blank slates are not capable of doing anything. According to Pinker, the inscriptions on a slate "will sit there forever unless something notices patterns in them, combines them with patterns learned at other times, uses the combinations to scribble new thoughts onto the slate, and reads the results to guide behavior towards goals." Pinker also raised that John Locke introduced the concept of understanding when he recognised the problem with the blank slate. Locke's allusion to understanding studied the inscriptions on the white paper in a process of recognition, reflection, and association. Pinker concluded that 'The mind is a complex system composed of many interacting parts' (Pinker, 2003).

This section briefly goes through some key thoughts and theories that help understand the human mind and behavior. This would, later on, provide one of the bases for approaches that facilitate healing through the mind.

The Freudian Model and Human Nature

Sigmund Freud became one of the most influential figures in medical history by revolutionizing the understanding of human nature with his psychoanalytic approach to the mind. Freud's idea of psychoanalysis began when he hypothesized that emotional symptoms originate from the long-standing emotional trauma that needs to be recalled to release the emotions associated with it. He found that many cases account for sexual abuse as the most reported origin of patients' trauma (Shermer, 2014).

Freud formulated theories about sexual development and the interpretation of dreams. He introduced ideas like resistance (patients blocking memories from conscious memory), repression (a defense mechanism used to avoid mental conflict), and transference (emotions are projected onto the therapist).

Believing that the human condition could be improved by the application of science and reason, Freud tried to explain all phenomena scientifically. Living post-Darwin, he acknowledged that human beings are animals related to all living things (Messerly, 2014). Freud believed that mental and physical events are determined by physical causes; he was a materialist who regarded the mind and mental states as dependent upon brain states.

Freudian Ideas on Determinism, the Unconscious, Human Instinct, and Childhood

Freud's theory of human nature applies determinism to psychology. Freud reasoned that conscious thoughts are determined by individual, psychological, and biological drives, which could imply the absence of a human free will. On the other hand, he also believed that people sometimes make rational decisions and judgments.

The supposition of the unconscious is the second key idea in Freud's theory. Other than the preconscious states, which contain thoughts that individuals are not continually aware of, the mind also has unconscious states with elements that individuals are unaware of but, nevertheless, influence behavior. Elements in the preconscious can be recalled more readily as needed while those in the unconscious cannot ordinarily become conscious. Some elements of the unconscious, like a traumatic event in childhood, may have initially been conscious but were subsequently repressed or passed on to the un-conscious.

Freud also popularized the id, ego, and superego as the three structures of the mind. The id is responsible for the instinctual drives that demand immediate satisfaction and pleasure, and the ego contains conscious mental states controlled by a reality principle. Meanwhile, the superego is the conscience that subjects the ego with moral rules, and is responsible for feelings of guilt and anxiety. The ego regulates the id by reconciling its demands with the superego. This is commonly illustrated by the want to have candy (the desire of the id) as compared to the knowledge that one should not steal candy (the rule dictated by the superego).

Human drives and instincts are also major components of Freud's theory. According to Freud, drives manifest in multiple ways and need to be released to prevent pressure from building up. Compared to previous philosophers, Freud put more emphasis on sexual drive, including significant forces such as the drives for self-preservation, life-enhancement (eros), self-destructive sadism, aggression, or death instinct (thanatos). He, however, later acknowledged these ideas were preliminary (Shermer, 2014).

The crucial importance of childhood in psychological development and human personality is the fourth major aspect of Freud's theory. Facts about childhood are keys to understanding adults, including different sexual phases of development. Freud is known but criticized for his focus on the Oedipus complex in the process of emphasizing that the love between parents and children foreshadowed adult love. The Freudian theory posits that individuals who do not develop properly through adulthood because of a childhood event may re-verse this damage with psychoanalysis (Shermer, 2014).

Psychoanalytic Therapy for Individual and Social Harmony

According to Freud, a harmonious relationship among different parts of the mind, and between the individual and the society contributes to wellbeing, happiness, or mental harmony. The lack of opportunities to satisfy the demands of the ego creates pain and frustration within the individual.

Freud also turned to the methods of science to diagnose and restructure human problems. His project was to restore a harmonious balance between parts of the mind, and a balance between individuals and the social world. Although he recognized the limits of working only with patients, Freud concentrated on the mind and left the betterment of the society to social reformers. His method encouraged patients to talk openly about their past and thought that a repressed memory or idea comes close to the open when patients stopped talking. Freud thought that by surfacing these reclusive materials out to the rational, con-scious mind, harmful thoughts could be defeated.

This psychotherapy could take years but promise to eventually bring greater harmony for distressed individuals. Freud also suggested the idea of transference, in which patients project emotions like strong feelings of love or hatred towards therapist. While achieving the goal of psychoanalytic therapy of self-knowledge, patients may replace repression of instinctual wishes with rational self-control, divert wishes and wants into acceptable behaviors, or even satisfy their desires. Once brought to the surface, these passions are conquered and no longer control the patient (Shermer, 2014).

Carl Jung and the Collective Unconscious

Carl Jung is the best-known follower of Sigmund Freud. He and Freud agreed in supposing the existence of the unconscious mind and shared a common understanding of the profound role of the unconscious. However, when this understanding began to diverge, Jung embarked on a process of self-analysis, which he called a confrontation with the unconscious (Geist, 2013).

Jung's approach also took after the Freud's method, however, in exceptional cases, when the latter's approach was not sufficient, Jung employed a complementary method that helped patients take on a personal conflict with the collective unconscious.

Of all his theories, Jung's division of the unconscious into two dissimilar levels is his most monumental contribution to psychology. He split the unconscious into the superficial personal unconscious and the deeper collective unconscious. Jung differentiated the two by saying that every person has his or her own personal unconscious wherein suppressed and forgotten memories, traumas, etc. and mental contents are kept (Kazlev, 2004).

The collective unconscious, on the other hand, is universal. Unlike the personal unconscious, the collective unconscious cannot be built and predates an individual. It is the storehouse of all religious, spiritu-al, and mythological symbols and experiences (Kazlev, 2004).

Archetypes and the Collective Unconscious

According to Jung, the makeup of the collective unconscious is a universal datum comprising archetypes, which are psychic innate dispositions that help people characterize and live through basic human behavior and situations. Archetypes are innate and are not acquired through education or another conscious effort. These pre-existing prototypes may be likened to a universal library of hu-man knowledge where people acquire wisdom for guidance (Jung, 2015).

As Jung worked with patients' dreams, he also observed the emergence of symbols, which seemed to have little or no personal meaning for a person, yet which often have great emotional charge. He noted that many of these symbols reappeared throughout history in different human aspects and interests, including various forms of creative expression. Jung was convinced that these symbols emanate from the collective unconscious that lies just below the personal un-conscious layer. These are neither images nor ideas but elemental psychic patterns common across humans and with which experiences are organised (Geist, 2013). These conceptual patterns likewise account for religious and mythological concepts, and daily thought processes in general (Kazlev, 2004).

Complexes, Ego, the Self, and Individuation

Jung also studied word association and identified the prevalence of the groups of ideas, thoughts, memories, and perceptions, which are all organised according to a central affective and standard core. He called these clusters feeling-toned complexes, which he recognized as the basic structural units of the psyche. These are like unique, real personalities containing images, feelings, and qualities that may overcome the ego and thus, affect behavior (Geist, 2013).

To describe the complexes, Jung explained that reality keeps the peaceful cycle of egocentric ideas continually disrupted by thoughts that trigger a strong feeling-tone or affects. A threatening situation

disturbs the peace and replaces it with complex ideas that yield the triggers. This new complex then crams everything else into the background, momentarily inhibiting all other thought processes, and entertains only egocentric ideas. In some cases, the complex can suppress, to a point of complete unconsciousness, all ideas that oppose and, as a result, possess the strongest attention-tone (Geist, 2013).

Although some of Jung's structural terms are like Freud's, the words are not necessarily used in the same way. The ego, according to Freud, refers to a psychic structure that reconciles the society (supere-go) and instinctual drives (id). In contrast, Jung describes the ego as the way which an individual sees himself or herself, along with the conscious and unconscious feelings that accompany that view.

For Jung, the ego is not the goal of psychological development but the carrier of an individual's consciousness. Its task is to be aware of its own limitations and to recognize its small yet essential existence in the greater reality of the personal and collective unconscious. The major role of the ego and the major goal of psychotherapy is to establish the right relationship with the Self, which is the fundamental aspect of human personality that gives cohesion, meaning, direction, and purpose to the whole psyche.

The main purpose of Jungian psychotherapy is to develop a relationship between consciousness (ego) and the unconscious. The Jungian theory also recognizes the psyche as the force that propels balance and wholeness by distinguishing and integrating the various elements of the personal unconscious and creating access to the collective unconscious. Jung called this the process of individuation. In psychotherapy, this unconscious material slowly surfaces as symbols in dreams, active imagination, and the transference relationship between therapist and patient. With ample relationship, setting, and time, the patient's psyche is inclined to heal itself (Geist, 2013).

Models of Human and Moral Development

The study of moral development focuses on the emergence, change, and understanding of morality from infancy through adulthood. In the field of moral development, morality is defined as principles for how individuals ought to treat one another, with respect to justice, others' welfare, and rights. During childhood, moral development is how the children reason about morality, how they react toward moral lapses, and their behavior when faced with moral issues.

Piaget and Kohlberg are known for their stages of moral development. These stages are relevant to human life stages as people overcome difficulties and discover the self. An understanding of these stages helps develop unique approaches—that is, specific to each individual at different stages—in formulating solutions that utilize socially acceptable methods that eliminate conflict and facilitate personal growth.

Piaget's Mental Maps and Stages of Development

Jean Piaget, one of the most influential researchers in developmental psychology, took interest in the biological influences on how people come to know. His groundbreaking research is in understanding how young minds work. Piaget noticed that the variation in the answers of younger and older children was the result of the differences in how each group thought and not because younger children were unintelligent and get smarter only with experience (Huitt & Hummel, 2003).

Being a biologist, Piaget studied behavior and how an organism adapts to its environment. He suggested that behavior is controlled by mental organizations called schemata used by individuals to represent the world and to designate action. Biological drives to achieve a balance between the schemes and the environment propel the adaptation. This is called equilibration (Huitt & Hummel, 2003).

According to Piaget's hypothesis, infants are born with a set of operating schema or reflexes that are used to adapt to the environment, and which are later quickly replaced with constructed schemata. Indi-

viduals utilize two processes for adaptation namely, assimilation, which is to alter the environment to match pre-existing cognitive structures, and accommodation, which is to change cognitive structures to accept something from the environment. Both processes are used throughout a person's life as he or she increasingly adapts to the growing complexity of the environment (Huitt & Hummel, 2003).

Stages of Cognitive Development

Piaget's cognitive developmental model works on the idea that a growing child builds mental structures or maps to understand and respond to physical and cognitive experiences within the environment. Piaget describes child development in four stages.

The sensory-motor stage starts from birth to two years of age. A child at this stage is internally motivated to interact physically with the environment to understand reality and how it works. Object permanence, or the existence of an object even when it is out of sight, is not yet understood. Reading with the child encourages language, and playing simple games like peek-a-boo promotes the understand-ing of object permanence and cognitive development (Lipoff, 2011).

Ages two to seven comprise the pre-operational stage wherein speech and language take a large part of development. Children at this age figure out the world by experimenting and asking questions. This stage is also when the child works out moral dilemmas and becomes less egocentric (Lipoff, 2011).

The concrete operational stage is from seven to eleven years of age. Children at this stage have gained important knowledge through physical interactions with the environment. They are starting to conceptualize and create logical structures from experiences. They are also able to understand abstract reasoning and are ready for advanced learning concepts like arithmetic (Lipoff, 2011).

The formal operational stage from 11 years of age and beyond is the time when the child can fully function as an adult, especially in conceptual reasoning and understanding. He or she is ready for

challenges and new experiences that will encourage an understanding of the world (Lipoff, 2011).

Piaget's Stages of Moral Development

Piaget was interested in three main aspects of children's understanding of moral issues. They were children's understanding of rules, of moral responsibility, and of justice. Piaget found that children's ide-as regarding rules, moral judgments, and punishment tended to change as they got older. In other words, just as there were stages of children's cognitive development, there were also universal stages of their moral development (McLeod, 2015).

Piaget studied many aspects of moral judgment, but most of his findings fall into a two-stage theory. He identified 10 to 11 years of age as the critical period when children's ideas of morality change. He noted that younger children regard morality as obeying other people's rules and laws. They understand that rules are fixed and absolute, and are created by authoritative figures (Crain, 1985). They accept that breaking the rules result in a corresponding punishment and that the degree of the punishment should be related to the severity of wrong deed (McLeod, 2015).

Children during this stage base moral judgments on consequences. Behavior is deemed bad according to observable consequences, regardless of the intentions or reasons for the behavior. Therefore, a large amount of accidental damage is viewed as worse than a small amount of deliberate damage (McLeod, 2015).

On the other hand, children older than 10 to 11 years of age have a more relativistic view and understand that rules may change if everyone agrees. For older children, rules are not sacred and absolute but are devices, which humans use to get along cooperatively (Crain, 1985). They recognize that there is no absolute right or wrong and that morality depends on intentions, not on consequences. They are beginning to overcome the egocentrism of childhood and have devel-

oped the ability to see moral rules from another person's point of view (McLeod, 2015).

Moreover, children of this age group already understand that rules are made by people and people can change them. They recognize that regulations are imposed to bring harmony and to ensure fair play. Motives are now considered when discussing the responsibility of actions. These children start to understand that a seemingly unruly behavior that has good intentions is not necessarily going to be pun-ished. Therefore, a well- intentioned act that turned out badly can be blamed less than a malicious act that did no harm (McLeod, 2015).

If given the example of a young boy who broke 15 cups trying to help his mother and another boy who broke only one cup trying to steal cookies, younger children will think that the first boy did worse. Meanwhile, older children are more likely to judge wrongness in terms of the motives underlying the action and choose the second boy (Crain, 1985).

Views on telling lies and punishment also change as children grow. Older children judge the seriousness of lies in terms of betrayal of trust and undermining of friendship and cooperation. Imposing punishment is no longer done to make the guilty suffer but to put things right again (McLeod, 2015).

Lastly, older children start learning that justice in real life is an imperfect system—that is, sometimes the guilty get away with their crimes and the innocent suffer unfairly. Younger children would agree if the whole class was punished for the misdeed of a single child, however, older children consider punishing the innocent for the misdeed of one wrong (McLeod, 2015).

Lawrence Kohlberg: Social Conditioning in Moral Development

Piaget discussed the changes that happen as children approach the formal operational stage, however, intellectual development carries on at least until age 16. Because moral issues continue to develop throughout adolescence, Lawrence Kohlberg studied both children

and adolescents in terms of moral dilemmas and found stages that go well beyond those identified by Piaget.

Kohlberg uncovered six stages of moral development that start with features similar to Piaget's stages. His approach begins with the assumption that humans are intrinsically motivated to explore and to competently function in their environments. As children develop socially, they imitate role models whom they look up to for validation (Kohlberg, 1969). Consequently, these established role models become the basis of how children determine the rightness of actions.

Kohlberg believed that there are common social patterns present in families, peer groups, and the society that help in good decision-making, mutual defense, and sustenance. In their endeavor to become competent participants in such social institutions, people in all cultures display similar patterns of action and thought about relations with the self, others, and the social world. The more a person is impelled to imagine how others experience things and creatively take their roles, the more quickly he or she learns to perform well in cooperative human communications.

The model of Kohlberg's moral development originates from the assumption of cooperative social organisation based on justice and fairness (Tsui & Windsor, 2001). According to Kohlberg, moral cognitive development corresponds to a progressing sequence of social circles wherein individuals seek to operate competently. When these groups function well out of reciprocity, growing individuals gain an expanded, conscious realization of justice and mutual care and respect exhibited in a larger circle of social relations, including small-er circles within this sphere.

For Kohlberg, moral reasoning is the basis for ethical behavior and it has six developmental stages, each of which is increasingly more adequate at responding to moral dilemmas than the last (Kohlberg, 1969). He proposed that advanced stages of moral development pro-vide the individual with greater capabilities for decision-making and allow them to manage more complex dilemmas (Rest, Power, & Brabeck,

1988). This study explored and expanded the development of moral judgment beyond the age group, originally studied by Piaget. It determined that the process of moral development was predominantly concerned with justice and that it continued throughout life (Kohlberg, 1958).

To study moral reasoning, Kohlberg presented subjects with moral dilemmas and classified their responses into six stages, which were further categorized into three levels namely, pre-conventional, conventional, and post-conventional.

Kohlberg's Stages of Moral Development

At stage 1, children consider right whatever authorities define as right. For them, obeying authorities is the right thing to do, keeping them away from punishment. Children at stage 2, on the other hand, are no longer intimidated by authority and are aware that there are different sides to an issue. Because everything is relative, they know they are free to pursue their own interests, however, it is often useful to make deals and exchange favors with others.

Stages 3 and 4 are characterized by young individuals thinking like the members of the conventional society with its values, norms, and expectations. Children at stage 3 emphasize goodness as a person and have helpful motives towards people. At stage 4, their concerns shift towards obeying laws that maintain society as a whole.

Finally, individuals at stages 5 and 6 concern themselves less with maintaining a society for its own sake; they are more concerned with the principles and values that make a good society. Those at stage 5 emphasize basic rights and democratic processes that entitle everyone to privileges, while those at stage 6 define the principles by which the agreement will be most fair (Crain, 1985).

Kohlberg asserted that these stages are neither products of maturation (genetic blueprint) nor socialization (with teaching parents and teachers). Instead, the stages emerge from the individual's own thinking about moral problems. Social experiences promote development by

stimulating mental processes instead of teaching. As individuals are engaged in discussions with others, personal views are questioned and challenged, and individuals are, therefore, motivated to come up with new, more comprehensive positions (Crain, 1985).

How Children Develop Their Self-Image

The term self-concept is a general term used to refer to how one regards, perceives or evaluates himself. To be aware of oneself is to have a concept of oneself (McLeod, 2008).

Self-concept is important for both social psychology and humanism. Lewis (1990) suggests that the development of a self-concept has two aspects. First is the awareness of the constancy of the self and that it is separate and distinct from others. A person knows that he or she exists as a separate entity and that he or she continues to exist over time and space. The second is the knowledge of existence as a separate being and that he or she is also an object in the world with characteristics that can be experienced (Lewis, 1990).

The self can also be categorized according to identified characteristics such as age, gender, size or skill. In early childhood, the categories children apply to themselves are very specific like hair color, height, and favorite things. When they grow older, the way they de-scribe themselves refer to personal ideals and traits, how people see them, and how they compare themselves to others.

Self-Concept in Early Childhood

Children have unique needs at different stages during childhood. Responsiveness and being sensitive to these needs help in building their developing sense of self.

The sense of self in children is created within loving relationships to which they have been exposed to since birth. They need loving and consistent relationships to develop a good sense of self. Babies are constantly searching to make a deep emotional connection with the people caring for them. They need to be soothed and responded to.

Observing a baby's response to different sights, sounds, and textures and affirming these responses support their budding self-concept. Taking notice of requests for play, like peek-a-boo, has the same effect.

Toddlers start becoming self-conscious at the onset of the second year. They are especially sensitive during this period and can feel shamed by harsh criticism. Encouraging independence, curiosity, and exploration within reasonable boundaries for behavior help develop self-consciousness during this stage. Poole offers an example of twenty-month-old Kayla who manages to unlatch the cupboard door to the diaper supplies. For example, toddler Kayla is aware that the cabinet is forbidden territory and looks over her shoulder for reactions to her behavior. Poole advised to tell toddlers in a similar situation that she cannot have the extra diapers, but she can open another door that holds some stuffed animals or toys (Poole, 2016).

Two-year-old toddlers are also starting to express themselves with their emerging language skills. They have strong emotions and feel the need to assert their selves and to protest limits despite their fragile sense of self. The role of the parent or caregiver is to remain calm and to help them adapt to the demands of daily life. Setting limits is helpful, and these should be consistent but flexible. A good partner-ship with the toddler makes the limits reassuring and does not dampen the child's sense of self.

Self-Image Among 3 to 4 Years of Age

Children on their third and fourth years feel independent and attempt exercising autonomy. Preschoolers see themselves as separate, unique individuals and define themselves in concrete terms. They describe themselves according to their physical attributes, names, ages, genders, social affiliations, possessions, and abilities. A young child's self-image tends to be descriptive, rather than judgmental.

Poole (2016) gave the example of Becca who asked a new classmate, "Who are you?" Her classmate replied, "I am Ella. I am 3. I have a baby sister. And look, I have a baby doll, too."

How preschoolers feel about the characteristics they use to describe themselves relate to their self-esteem. A boy acquires a feeling of self-worth as he interacts with people who are important to him, like his teacher, for example, who gave him immediate, affirmative verbal and visual reinforcement about his drawing. The way children feel about themselves and the corresponding self-image that they form during these early years can set their self-concept in the future and for the rest of their lives (Miller S., 2016).

The third and fourth years are critical times for successful experiences, as children during this stage grow so fast and develop in every way as they learn new skills and sharpen old ones. Because they are becoming more independent, preschoolers are intrigued by what they can do, and they need to consider how others respond to their actions and abilities to confirm how they feel about themselves. A three-year-old child may smile with pride when praised for coloring a picture according to instructions.

Kindergarten Years

One of the greatest challenges new kindergarten students face is the development of a strong and affirmative sense of self in a big school setting. Even confident children normally experience some insecurity. He or she may find it difficult to separate from his or her parents on the first day. The child may watch rather than participate in the activities or may demand attention. He or she might be wondering how to fit in, what his or her role is in the big group, and if his or her needs will be met (Church, 2016).

Understanding that a five or six-year-old child transitions out of the egocentric “me” stage to an understanding of himself within a bigger group is important in helping the baby develop a good sense of self. Children may hesitate practicing patience over understanding the needs of the group because they want their own need to be met immediately. Adults must help them understand that their needs will be met within an appropriate time frame. Taking turns and transition games help teach children that waiting can be a fun activity.

The development of the ability to communicate feelings and needs is an important part of self-concept. Adults may facilitate this development by encouraging children to talk about their feelings and problems both in small and large groups. Children at this stage also want to communicate their needs, including saying no to some group activities. They are using the power of no to help them define themselves within the group and to take the time to see where they fit in (Church, 2016).

Self-Esteem in School-aged Children

Self-esteem is the way individuals think and feel about themselves and how well they do things that are important to them. In children, self-esteem is shaped by what they think and feel about themselves. Their self-esteem is highest when they see themselves as approximating their ideal self, the person they would like to be. Children with high self-esteem have an easier time handling conflicts, resisting harmful pressures, and making friends. They laugh and smile more and have a generally optimistic view of the world and their life.

Children with low self-esteem have a difficult time dealing with problems, are overly self-critical, and can become passive, with-drawn, and depressed. They may hesitate to try new things, may speak disapprovingly about themselves, may be easily frustrated, and often see temporary problems as permanent conditions. They are pessimistic about themselves and their life.

The start of school is a critical point in a child's development of self-esteem. Self-esteem among many children drops as they cope with adults and peers in a new situation with new and strange rules in big school. Physical appearance and characteristics and their ability to make friends with children of their age influence the level of their self-esteem.

Stress-inducing situations at home, such arguments between parents, difficult lessons, being bullied, or not having friends—these can have a harmful impact on a child's self-esteem. Children with overly de-

veloped self-esteem may have the tendency to become bullies, while children with lower self-esteem may become the victims of bullies.

Parents can help their children develop an inner sense of self-control by giving them opportunities to make their own decisions.

Building Confidence in Teenagers

Self-esteem among teenagers is fragile given the major changes they encounter and is often affected by the physical and hormonal changes they experience, especially during puberty. The physical and emotional changes experienced during this stage present new challenges to a growing child's self-esteem. Pre-teen boys whose growth spurt comes late compare themselves with peers who have matured early and seem more athletic, masculine, and confident. Girls, on the other hand, can be embarrassed about early physical maturity and may feel awkward and self-conscious in their newly developed bodies.

These youngsters are usually extremely concerned about how they look. Both boys and girls exert time and effort on personal grooming, trying to achieve a certain kind of look. Regard and acceptance of peers become of utmost importance to their self-esteem. Because teens are very concerned about how their peers regard them, physical image is a major factor to the level of their self-esteem. Those with high self-esteem like the way they look and accept themselves the way they are. Those with low self-esteem, however, usually have a poor regard for their bodies and think that they are too fat, or not pretty or muscular enough. However, accepting themselves as they are without undue self-criticism is challenging for them.

A teenager's perception of being overweight should first be verified with a healthcare provider. If indeed overweight, he or she can set goals to lose weight by healthy eating and regular exercise. Those who are able to set goals in their lives, in general, have higher self-esteem than those who are not. They also usually belong to families that are supportive of them. Parents can enhance teenagers' self-

esteem by asking for their help or advice and listening to their opinions.

Friendships provide lots of opportunities for learning and development, including companionship, recreation, social skills, participating in group problem solving, and managing competition and conflict. These bonds allow for self-exploration, emotional growth, and moral and ethical development of young people.

Self-Worth and Self-Respect

The extent of an individual's approval or disapproval of himself determines how he values his self. Identifying self-worth that brings out self-esteem always involves a degree of evaluation that results in either a good or a poor view of the one's self.

Situations that create uncertainty or anxiety among people may quickly change one's self-esteem. Morse and Gergen (1970) showed this in a study of people in line for a job interview in a waiting room. The participants were seated with one of two co-candidates who were confederates of the experiment. One was Mr. Clean who was dressed in a smart suit and carried an open briefcase containing a slide rule and books. The other co-conspirator, Mr. Dirty, was dressed in an old shirt and jeans and slouched over a cheap sex novel.

The self-esteem of participants who sat with Mr. Dirty increased while those with Mr. Clean decreased. There was, however, no mention made of how the situation affected the subjects' performance in the interview. Nonetheless, since one's level of self-esteem affects performance, better performance could probably be expected from the subjects who sat with Mr. Dirty (Coopersmith, 1967).

While self-esteem comes from various sources for children at differ-ent stages of development, the development of self-esteem in young children is heavily influenced by parental attitudes and behavior. Support, like encouragement and praise for accomplishments from parents, as well as the child's internalization of his or her parents' atti-tudes towards success and failure, are the most powerful factors in the

development of self-esteem in early childhood. As children get older, it is their experiences in school and with peers that help develop their self-esteem.

At the core of a healthy concept of self, self-esteem, and self-worth is the development of self-respect. While self-concept is about "who I am," self-respect is more about "how I take care of myself." A strong and healthy sense of one's self allows children to be able to speak up if they think something is not fair. It equips them with knowledge of what to do if they are being ignored or even if they don't feel well (Church, 2016).

As children's self-concepts develop to include self-respect, they learn that what is fair for them also must be fair for those around them. According to Church, this knowledge teaches a child that he or she is not a lonely fish in the big pool. He sees that he is one of many kinds of fish that work together to create a harmoniously flowing sea of friends (Church, 2016).

Factors that Affect Development

According to Kohlberg, not everyone reaches the highest levels of moral reasoning, where justice and individual rights are guiding principles in a person's life. He found that more men reached the last stage of moral reasoning than women and that men have the tendency to focus heavily on justice. Gilligan, a pioneer in the field of gender difference psychology, criticized this theory and argued that it was biased in favor of men (Good Therapy, 2015).

Gender in Moral Development

Gilligan's research showed that women put more emphasis on caring when making decisions on morality. According to her, Kohlberg's theory emphasizing justice does not allow for the role of caring in moral decision-making, and this is why women often fail to reach Kohlberg's higher stages of moral reasoning.

Gilligan's work on moral development describes that a woman's morality is influenced by relationships. According to her research, women build moral and ethical foundations based on how their decisions affect others. Gilligan also illustrated moral developments in stages that follow Kohlberg's moral stages but are based upon research with women.

Stage 1 is an orientation towards individual survival. What is practical and best for the self is the initial interest. This slowly transitions to responsibility and considers what is best for others.

This is followed by stage 2 in which goodness, for women, is selflessness. The initial view starts from believing that a woman sacrifices her own wishes for others and transitions from goodness to truth as they consider the needs of both the self and others.

Stage 3 is where the morality of non-violence is established between the self and others. Hurting others, including the self, is considered immoral. This, according to Gilligan, is the most sophisticated form of reasoning. Women give importance to taking responsibility for the

consequences of decisions and gaining control of their own lives. Caring for others is a strong component of this high stage of moral development.

As the society evolves, however, this gap in moral judgment and duties between men and women is getting narrow and differences are becoming less polarized. Both genders need to master all stages of development and individualistic identity is more prominent. Methods like the PISTA approach helps foster emotional maturity to help individuals address different situations influenced by hierarchy and rules more easily.

Genes, Motivation, Goal-Setting

The compatibility of the unconscious to natural science spurred research studies in social cognition that produced unexpected findings regarding complex judgmental and behavioral phenomena operating outside of awareness. When studied in context with evolutionary biology, the widespread discoveries of sophisticated unconscious behavior guidance systems not only make sense. They turn out to have been predicted on a priori grounds (Dawkins, 1976 and Dennett, 1995).

Genes provide people with general tendencies that are adaptive across local variations (Dawkins, 1976). Because of this, people have evolved to be open-ended systems that allow for adjustment to local conditions (Mayr, 1976). These systems are from human culture and the social, local conditions of the world into which individuals are born in.

The cultural guides to appropriate behavior (including language, norms, and values) help in people's adaptation to the current local environment. These guides are learned during early childhood and reduce the unpredictability of the child's world and his or her uncertainty as to how to act and behave in it.

During the early years, a child readily absorbs cultural norms and values, including the behavior of those closest to them, providing finer

tuning of appropriate behavioral tendencies. In a review of infant imitation, Meltzoff and Moore concluded that young children learn about behavior through passive imitation of fellow children and adult caretakers (Meltzoff & Moore, 1977). Infants tend to imitate more because they have not yet developed cognitive control structures to suppress or inhibit their tendency for imitation.

According to Tomasello, genes primarily drive human behavior through motivations. The active goal or motive is the local agent by which the genetic influence from the distant past finds expression. Evolution works through motives and strategies. People naturally seek the desired end states from whatever starting point in history and geo-graphical location the cards of fate have dealt them (Tomasello, 2005).

Once initiated with or without the person's intent or monitoring, the goal concept operates over extended periods to guide thought or behavior towards the objective (Bargh & Morsella, 2008). The open-ended characteristic of an unconscious goal pursuit is shown as the target operates on whatever goal-relevant information unpredictably happens next in the situation. This is possible just as human genes have programmed people to adapt and thrive in local conditions far into a future that could not be predicted.

The unconsciously-working goal successfully adapts no matter what happens and uses gained information to advance the pursuit of the objectives. This clearly demonstrates a level of flexibility that belies the perception of the dumb unconscious, in which the unconscious is said to be capable only of rigid and fixed responses (Loftus & Klinger, 1992). The notion of the inflexible unconscious being inconsistent with basic observations from studies on motor control also holds true. This is because highly-flexible adjustments are made unconsciously during motor acts, such as grasping a cup or blocking a soccer ball (Rosenbaum, 2002).

Contextual Tuning and the Social Environment

The open-ended nature of how people evolved has also made people highly sensitive and reactive to the present, local context (Higgins & Barg, 1987). Because of contextual priming, people can undergo more precise adjustments to events and to people in the present time (Higgins & Barg, 1987). The occurrences of certain events and encounters with specific people automatically activate representations of them, along with all the stored internal information, like goals, knowledge, and emotions, associated with the representations.

The ubiquitous effects of contextual priming are innate and underpin an infant's imitative abilities. What one perceives directly influences what one does. The priming effects depend on the presence of a close, automatic connection between perception and behavior, which results in default tendencies to act in the same way as those around a person (Dijksterhuis & Bargh, 2001). Thus, unconsciously adopting others' behavior as a default option or starting point for one's own behavior makes good adaptive sense, especially in new situations and with strangers.

The research of Chartrand and colleagues (Bargh & Morsella, 2008) has, in several times, demonstrated these default tendencies and their unconscious and unintentional nature in adults. People have the tendency to adopt the physical behavior (posture, facial gestures, arms, and hand movements) of strangers with whom they interact intentionally or not. However, an unconscious imitation also tends to in-crease liking and bonding between the individuals and serves as a natural social glue. Further supporting this notion of natural contextual tuning of one's behavior to the present environment, cognitive research indicates that action-related objects activate multiple action plans in parallel and that action production is driven by some form of selective non-inhibition.

Attachment Relationships

Dr. Allan Schore, a monumental figure in psychoanalytic and neuropsychoanalytic studies, described the recent years as an exciting period for clinical practitioners wherein connections between the basic

and applied sciences are more tightly forged (Schore, 2005). Recent studies and technological breakthroughs are rapidly changing current views. One of the catalysts to this knowledge revolution is the innovation in biotechnology and imaging technologies that have allowed for more non-invasive studies of body organs and increased the understanding of biological processes that bring about various diseases. Neuroimaging research of psychological functions and psychiatric conditions has also produced different complex models for the normal and abnormal functioning of the mind.

Another driver of this continuing change is the growth of ongoing col-laborative interdisciplinary studies, especially infant research, that integrates neurobiological studies of brain development and psychological studies of emotional, social, and cognitive development (Schore, 2005).

A Paradigm Shift

Models on the developmental origins of health and disease are recently gaining support from research in developmental biology and physiology. Studies reflect that genes are not the absolute factor that defines behavior. While it is true that genetic is an essential factor, pre-natal and post-natal environmental factors also play an important role in developmental origins. Schore cites that the social environment created by mother and child during infancy affects gene-environment interactions and has long-term effects (Schore, 2003).

Newer models discuss a concept called mother nature meets mother nurture. This is complemented by neuroscientific studies revealing that development represents an experiential shaping of genetic potential and that early experiences with the social environment are critical to the maturation of the brain tissues. These studies conclude that nature's potential can be facilitated by nurture (Wittling, 1997).

Moreover, attachment theory, which was initially proposed by John Bowlby, is likewise advancing in developmental psychology and child psychiatry. This theory is an evolutionary mechanism common to both humans and animals. Updated models of the attachment theo-

ry emphasize the interfacing of both emotional and social functions, and neurobiological structures with development neuroscience, thus creating a large body of interdisciplinary studies (Schore, 2005).

These developments and the emergent interest in the brain growth spurt beginning from the last trimester of pregnancy until the 18th to 24th month after birth are moving existing models to a paradigm shift. According to neuroscientists, the accelerated growth in brain structure during critical periods in infancy is greatly influenced by social forces—i.e., input from the social environment created by early attachment relationships (Schore, 2005).

In his article "Attachment, Affect Regulation, and the Developing Right Brain: Linking Developmental Neuroscience to Pediatrics," Schore cited data suggesting that the organisation of the self during brain development transpires in the context of a relationship of the self with another brain—i.e., the mother and child, or the right and the left side of the brain. There is specific interest in the right brain, which matures earlier than the left brain during the first two years of postnatal life. The growth of the right brain is shaped by emotional communications within attachment transactions. Because the right brain is responsible for the emotional and corporeal self, its growth during infancy is equated with the development of the self (Brake & Sullivan, 2000).

The shift in models also reflects a reallocation of interest from cognition to emotion. Studies reveal that the development of emotional attachment bond and the maturation of affect are characterized by key events in infancy more than by the development of complex cognition. Schore asserted that models have moved from Piagetian theories of cognitive development to psychobiological models of social-emotional development. The central force in psychopathology and psychotherapy has moved from cognition to emotion.

Self-regulation is a process development characterized by a succession of stages in which new interactions between the individual and the social environment are enabled by self-regulatory structures and

functions. Emotions are now the highest order of direct expressions of bio-regulation in complex organisms (Schore, 2005). The neural mechanisms involved in self-regulation mature with experience. Critical affective experiences are also embedded in the attachment relationship. Attachment relationships, therefore, are essential facilitators of the development of the brain's ability to self-regulate.

Studies also show that self-regulation is a process accomplished by the right brain. There is agreement among scientists that attachment is the dyadic regulation of emotion, that the realization of self-regulation of affect is an achievement, and that normal development represents the enhancement of self-regulation (Schore, 2005).

The Role of Mother-Child Relationship in Childhood Development

Maternal sensitivity is critical because it acts as the external regulator of an infant's bio-behavioral regulation (Schore, 2005). In the first postnatal year, an infant primarily needs to establish an attachment bond of emotional communication with the primary caregiver, which is the mother in most cases, to develop self-regulation. He or she experiences a dramatic progression of social and emotional capacities starting at eight weeks. During this time, the infant exchanges mutual gazes with the mother, as they both engage in non-conscious and spontaneous facial, vocal, and gestural communications. This face-to-face interaction exposes the infant to elevated levels of social and cognitive functions.

These emotional transactions develop synchrony when both mother and child experience high positive arousal from play. The levels of joy and excitement also increase. With the mother's lead, both regulate positive arousal by synchronizing the intensity of their affective behavior within split seconds. Both partners match states and simultaneously adjust their social attention, stimulation, and arousal level according to each other's response. Synchrony develops because of each partner's learning the rhythmic structure of the other and modifying his or her behavior based on this structure (Lester, Hoffman, & Brazelton, 1985).

During moments of synchrony, the mother's sensory stimulation coincides with the infant's endogenous rhythms, allowing the mother to evaluate the non-verbal expressions of her infant's internal arousal and psychobiological states, to regulate them, and to communicate them back to the infant. According to Schore, these interactively regulated, coordinated exchanges promote the regulatory capacities of the infant and are fundamental to healthy affective development.

Research shows that there are also moments when the mother-and-child interaction gets out of sync and the attachment bond is disrupted. When the harmonious state is ruptured or when there is a transition from one state to another, the mother modulates and intervenes to allow for the development of self-regulation. The crucial process of rupture and repair starts from the mother by regulating her own negative affect. She applies a stress response to remedy the situation and to help her child regulate negative affect by engaging in an interactive repair (Schore, 2005 and Schore, 2003).

Schore also asserted that resilience in the face of stress is an ultimate indicator of a secure attachment and an optimal mental health. The process of re-experiencing positive affect after an unpleasant experience teaches the child that negative affect can be tolerated, and that relational stress can be regulated. Infant resilience arises from the interactive context wherein the child and parent move together from constructive to destructive affect, and then back to constructive affect.

Attachment is a primary mechanism for the regulation of biologic synchronicity within and between organisms. Schore further stated that data clearly suggest that affect regulation is more than the reduction of affective intensity or the dampening of unpleasant emotion, but that it also involves the intensification of affirmative emotion, which is a condition necessary for more complex self-organisation. The attuned mother of the securely attached child not only decreases the infant's damaging states with comforting transactions. She also maximizes the child's optimistic affective states with interactive play. Regulated affective interactions with a familiar, unsurprising primary caregiver create a sense of safety and curiosity that stimulates the

child's exploration of novel socio-emotional and physical environments. According to Schore, this ability is an indicator of adaptive infant mental health.

Misconceptions About the Human Mind

The mystery that envelopes the immense nature and power of the human mind has given birth to a variety of lay viewpoints that have become common truths over time. To the untrained individual, some popular perceptions about the brain may surprisingly be misconceptions. This section starts the discussion of the mind by drawing the distinction between brain facts and fiction. The discussion continues with understanding the physical aspect of the brain to identify the parts that can be stimulated to facilitate healing, then later proceeds to differentiate the mind from the brain.

It seems easy to claim that one already knows enough about the human brain—that is, it controls vital processes in the body, including emotions and decisions, and that a working brain gives life and damage to it could incapacitate an individual, affect the quality of life, or cause death. Other common notions exist and are accepted as truths. It is surprising that a lot of these time-honored beliefs are mistruths that need to be set straight for a more accurate awareness of the nature of the brain and how it functions.

It is impossible to think productively when one is tired. Contrary to the popular belief that people are less productive thinkers when tired, the study done by Wieth and Zacks suggests that the brain is better at creative work when it is tired and distracted (Wieth & Zacks, 2011). One of the articles in the study explains that a tired brain that is susceptible to distraction is beneficial to insight problems that involve thinking outside the box. During off-peak periods, the brain is less focused and more open to considering a broader range of information. As a result, a host of alternatives and diverse interpretations are opened, and innovation is fostered.

The brain of a tired person is not as good at weeding out distractions and focusing on a single task. It does not remember existing inter-

connections between ideas and concepts as efficiently. However, these characteristics are both good factors for delivering creative work because the brain will be pushed to make new connections. It will be open to new ideas and think in new ways. This is one of the reasons why great ideas often pop in the shower after a long day of work.

Multitasking is possible and beneficial. Multi-tasking is something people are expected to practice nowadays when everything in life has seemingly gone fast-paced. Interesting truth is that multitasking is, in fact, impossible (Widrich, 2012). What people currently regard as multi-tasking is context-switching in which people quickly switch to and from different tasks instead of performing the tasks all at the same time.

According to the book *Brain Rules* (Medina, 2008), research shows that multi-tasking is detrimental to productivity because it increases error rate to 50% and doubles the time needed to accomplish a task. What really happens during multitasking is that the brain's resources are split among the tasks at hand and thus giving less attention to each task. The risk of poor performance on all of the tasks is, therefore, very likely.

The fact is the brain does not really handle the tasks simultaneously. Instead, it spends important brain power on switching to and from each task alone. Neuroscientists Etienne Koechlin and Sylvain Charron of the French biomedical research agency INSERM in Paris con-ducted a study revealing that the introduction of a second task makes the brain split the labor and assigns the tasks to each hemi-sphere to work on the jobs separately. The brain, consequently, could not per-form at its full capacity (Telis, 2010).

Productivity dropped even more when a third task was added. The volunteers consistently overlooked one of the tasks and made three times as many errors as they did while working on two tasks only.

Shyness accounts for introversion. Introversion and extroversion are not about how outgoing a person is, but rather how one's brain re-

charges. Research revealed that there is a difference in how the brains of introverts and extroverts process rewards and how genetic makeup affects this. The brain of an extrovert reacts more strongly when a gamble pays off partly because of genetic factors and also partly because of the difference of the dopamine system, which affects learning.

An experiment led by Michael Cohen of the University of Amsterdam in 2005 asked people to participate in a gambling task while their brains were being scanned. The results showed that when the gambles taken paid off, strong responses in the amygdala and the nucleus accumbens were observed in the brains of among the more extroverted group. The nucleus accumbens is part of the dopamine system and is generally known for motivation and the search for re-wards. The difference in the dopamine system in an extrovert's brain promotes the tendency to seek novelty and take risks. This makes him enjoy unfamiliar or surprising situations more than others. On the other hand, the amygdala, which is responsible for processing emotional stimuli, gives extroverts a rush of excitement in the face of highly stimulating events and situations, which might overwhelm an introvert.

The difference in the way the brain processes stimuli also accounts for introversion and extroversion. This process is shorter in the brains of extroverts and runs through areas where taste, touch, visual, and audi-tory sensory processes happen. This process transpires through a long, complicated pathway in areas of the brain associated with remember-ing, planning, and solving problems.

Time flies. The idea of time and how it goes by in haste is the product of how the brain processes information and perceives time. The brain receives chunks of data from the senses and organises it in a way that would make sense and be easily understood. This procedure happens before a person recognizes the new information. The longer the procedure lasts, the longer that period feels.

When familiar information is received, brain processing does not take much time at all, unlike new information, which is processed by the

brain slower thus creating the illusion that time is stretched out. According to neuroscientist David Eagleman, the more familiar the world becomes, the less information the brain writes down, and the more quickly time seems to pass (Eagleman, 2009). Time stretches out when the brain exhausts its resources and shrinks when the information it receives is just as expected.

Babies are born with ignorant, unknowing minds. For many years, the widely held belief was that babies are born totally clueless and their brains are blank slates that need teaching. The conventional view was that babies take a surprisingly long time to learn right and wrong, and basic facts like how objects continue to exist once they are out of sight and that people have beliefs and desires and goals.

Studies made at the Baby Lab in Infant Cognition Center at Yale University (Wynn & Bloom, 2012) and Birkbeck Babylab, University of London (Geddes, 2015) show that babies already understand how people think and why they act as they do. Because it is a challenge to study the cognitive abilities of babies who lack language skills and who cannot stay put in one position, psychologists used babies' eye movements to explore how much these young beings know. Like adults, babies tend to look longer at things which they find interesting or surprising more than those which they find uninteresting or expected. More recent studies made in Birkbeck, University of Lon-don are using more sophisticated techniques that are combined with other methods (Geddes, 2015).

The studies showed that, although these young humans expect inanimate objects to move as the result of push-pull interactions, they also expect people to move rationally in accordance with their beliefs and desires. Babies show surprise when someone takes a round-about path to something he wants. They expect someone who reaches for an object to reach for the same object later, even if its location has changed.

Moreover, babies recognize events that seemed to violate some law of the universe. Psychologists Elizabeth Spelke and Renée Baillarge on conducted studies that showed babies magic tricks. In these studies,

the babies' gazes lingered more on scenes when support from beneath a block is removed but the block consequently floated in midair, or when an object disappears and then reappears in another location. This suggests that babies have expectations about how objects should behave. They think of objects largely as adults do, that is, as connected masses that move as units, that are solid and subject to gravity, and that move in continuous paths through space and time (Bloom, 2010).

Experiments also reveal that humans, in fact, have an undeveloped moral sense from the very start of life. This was shown when psychologists Felix Warneken and Michael Tomasello put toddlers in situations in which a grownup, whose hands are full, struggles to open a cabinet door or tries to get to an object that is out of reach. The toddlers instinctively helped, even without encouragement or reward (Bloom, 2010).

There are also other studies that supported the idea that babies understand goals, causality, and number. Ninety-nine percent of these studies used change in look time as a gauge (Geddes, 2015).

The study of the infantile mind has become more sophisticated in the Birkbeck lab where scientists have pioneered techniques such as infant near-infrared spectrometry (NIRS), which measures brain activity by recording the color (oxygenation) of blood. They are also reinforcing conclusions by combining multiple techniques (Geddes, 2015).

Factors that Affect Thinking and Behavior

The mind has customarily been defined with a conscious-centric bias. There is a predominance of conscious thought in how people have historically used variations of the word conscious to refer to the different mental processes—namely, unconscious, preconscious, subconscious, and non-conscious.

Additionally, the popular consensus that the qualities of conscious thought processes as intentional, controllable, serial in nature and consumptive of limited processing resources, and accessible to awareness by being verbally reportable, are the determinants of the power and influence of the mind.

Unawareness of Stimuli vs. Unintentional Actions

Contemporary perspectives on the power of the mind, specifically the unconscious, vary and challenge each other. Cognitive psychology draws on how the mind examines the subliminal-strength information processing in defining the capacity of the mind. It equates the unconscious with subliminal because it is said to be the part of the mind that processes stimuli that are relatively weak and low in intensity and, therefore, drives minimal, unsophisticated processes (Bargh & Morsella, 2008).

Social psychology, on the other hand, does not focus on stimuli in defining the unconscious but on mental processes, which the individual is unaware of (Nisbett & Wilson, 1977). Unlike cognitive psychology that considers the powers of the unconscious mind as being limited, social psychological research studies have led to the view of the unconscious mind as an encompassing, powerful influence over higher mental processes.

Freud's model of the unconscious continues to exert influence over how people regard the mind. For him, unconscious refers to the unintentional nature of the behavior or process, and the associated lack of awareness, not of the stimuli that provoked the behavior, but of the influence or consequences brought by the stimuli. This model, there-

fore, uses of the term unconscious based on one's unintentional actions and not on one's ability to process subliminal-strength information.

Because consciousness was defined according to an individual's awareness of an intention for an action, the assumption was that higher mental processes, like judgment and behavior, were typically consciously intended. Researchers speculated the extent of this awareness and if people were truly aware of the real cause of their behavior. If these processes were not accessible to awareness, then they were possibly not consciously intended. But if the actions were not consciously intended, then how could they have possibly been accomplished?

This question prompted social psychology research on priming and automaticity effects, which investigated how higher mental processes, like judgment and social behavior, are triggered and operated without conscious intent and guidance. This research made a significant difference in the description of the unconscious by saying that it is the lack of awareness of the effects and influences of a stimulus, not the stimulus itself, which operationally defines the unconscious (Bargh, 1992).

This shift in the operational definition of the unconscious, from the processing of stimuli to the influences or effects of stimuli, elucidated the true power and scope of the unconscious in daily life. More remarkably, it suggests that the unconscious is highly intelligent and adaptive (Bargh & Morsella, 2008).

This expanded and enhanced view is also more compatible with evolutionary biology than the subliminal only view of cognitive psychology. Like Darwin and Freud, evolutionary biologists also think of the unconscious in terms of unintentional actions rather than an unawareness of stimuli.

The Unique Tiers of the Mind

Freud's concept of a 3-tiered mind has been widely disputed in Psychology circles because of the difficulty in proving it scientifically. The model, nonetheless, created a useful representation of the mind with the conscious mind or ego, the preconscious or subconscious, and the unconscious. Each tier has separate, unique functions that work together in helping humans operate and adapt to the environment and society. Leveraging the qualities of these tiers is one of the keys to understanding and managing human behavior.

The Conscious Mind

If the mind were represented by triangle divided into three, the tip or apex would correspond to the conscious mind, which accounts for 10% of brain activity (Thomas, 2010). The conscious mind has these functions.

Director of attention and awareness. One of the most powerful functions of a fully-developed conscious mind is the ability to direct focus. Once an individual chooses an event or aspect of life for the conscious mind to direct its focus on, associated feelings, emotions, and memories will be brought to awareness and establish a person's mental state.

When embarking on a new project, for example, directing focus on the merit of the project instead of the challenges conjures constructive outlook and emotions that will drive a person towards his or her goal. Controlling what the mind focuses on can change one's disposition. Determining an individual's outlook starts with making choice, deciding how to think, and selecting the thoughts that will be allowed into the mind.

An active communicator. The conscious mind is also responsible for the communication between the outside world and the inner self through speech, pictures, writing, body movement, and thought. It is mostly referred to who a person is because it is the part of the mind that people are aware of using every day.

It is also the responsibility of the conscious mind to pass perceived information to the other tiers. If it perceives an event as something to be feared and sends this message to the subconscious, the latter will likewise take the event as something fearful. This means that the way people consciously regard a situation influences the way the other parts of the mind will process information. A mistake may be recognized and processed as a learning experience if the conscious mind considers it as such.

Ability to visualize. The conscious mind can imagine something that is totally new and unique—even something, which an individual has never physically experienced before. It can tell if something is real or imagined. What the conscious mind visualizes and intently focuses on invokes emotions and feelings associated with the envisaged image for an individual to experience.

Studies prove that visualization can yield astonishing results. For example, three groups of people were studied to test their ability to improve free throw accuracy in basketball. One group was instructed to physically practice free throws for 20 days in a row. The second group was not allowed to train at all, while the third group spent 20 minutes each day to get into a relaxed state and then imagine performing the free throws. If they missed the goal, they were instructed to adjust slightly and imagine themselves getting it the next time.

The results of the experiment showed that the group that physically practiced each day improved their score by 24%. As expected, the group that did not practice did not improve at all. The third group who visualized getting goals, however, improved their score by an amazing 23%—nearly as much as the first group (Thomas, 2010). Therefore, the power of the conscious mind should never be underestimated.

The Subconscious

The subconscious, which is the next level of the mind, occupies a slightly larger section and accounts for around 50-60% of the brain's capabilities. It is referred to in psychology as the part of conscious-

ness that is not currently in focal awareness. Psychologist Pierre Janet argued that underneath the layers of critical thought functions of the conscious mind lay a powerful awareness that he called the subconscious mind (Ellenberger, 1970).

Memories in the cache. The subconscious is the part of the brain that is in charge of recent memories and information for quick access whenever data is needed on the spot. Examples are telephone numbers, how to drive without consciously thinking about it, where a credit card is kept, etc. Other information in a cache in the subconscious are daily behaviors, habits, and moods, including sensations perceived by the five senses and their corresponding meanings.

Active filter. Because the millions of data bits in the environment could overwhelm the conscious mind, it is the task of the subconscious to actively weed out unnecessary information and process only that which is needed at the time. Data is run through filters, like values and beliefs, to test validity according to how an individual perceives the world. This process is dynamically done in the background so that daily tasks of an individual stay uninhibited.

It obeys orders. Information from past experiences starting from childhood is absorbed in the subconscious and influences behavior and decisions. The ones that cause unwanted emotions, like fear, self-doubt, and negativity, should be removed from the subconscious. Once the unpleasant experiences from the past have been identified with professional help, the conscious mind can direct the subconscious towards the corrective action that will effect change.

The good thing about the subconscious is that it obeys directives that come from the conscious mind. It can be used to affect change because it delivers all related information on whatever the consciousness focuses on. It finds evidence to support conscious thoughts and brings one's attention to the facts. It is like attracting all elements related to whatever one focuses on.

The Unconscious Mind

Lastly, the unconscious mind accounts for 30 to 40% of the brain's abilities (Thomas, 2010). It is vast, deep, and not easily accessible to conscious thought. Theories about the unconscious differ greatly, from being the Freudian storehouse of socially unacceptable desires, traumatic memories, and painful emotions to the cognitive-psychological perspective that it is simply a bundle of cognitive processes that individuals are not aware of.

Over and above these varied thoughts, the following are some of the basic functions of the unconscious (James, 2013):

Preserves and runs the body. Survival is one of the primary objectives of the unconscious. Anything that appears to be a threat to the human body will instinctively be fought by the unconscious. Moreover, the unconscious handles basic physical functions like breathing, heart rate, immune system, etc. Some believe that a healthy unconscious is the blueprint of a perfect health. Rather than telling the unconscious what perfect health looks like, try asking it what it knows and what you need for better health.

To protect an individual, the unconscious also stays alerted and tries to refer to lessons from each experience. An unpleasant experience in school, for example, may usher the unconscious to lead an individual away from a seemingly similar tough situation and will show signals like sweaty palms and anxiety. But if the individual does well in sports, for example, the unconscious will remember that sports equals success and will send optimistic and energized signals whenever physical activity comes up.

Accepts directions. The unconscious, like the subconscious, follows directions from the conscious mind. It, in fact, takes instructions very literally in such a way that when the conscious mind says a task is causing stress to an individual, the unconscious will find a way to relieve the stress.

Stores memories, including morals. The unconscious decides where and how memories are stored. It may suppress certain memories like

traumas and the associated strong pessimistic emotions until the individual is mature enough to consciously process them.

Moreover, the unconscious also houses the morals taught and accepted by parents or one's surroundings. If an idea was taught as wrong during childhood, the unconscious will continue to respond to the moral lesson even after the conscious mind has rejected it.

Communicates with emotions, associations. The unconscious uses emotions to get a person's attention. If the person is apprehensive, the unconscious correctly or wrongly detects that survival is at risk.

The Behavioral Influence of the Unconscious

Many theorists have hypothesized that the conscious mind is not the source of human behavior. Instead, it is the gatekeeper of the impulses that are unconsciously activated and the faculty that makes sense out these signals (Bargh & Morsella, 2008). The conscious process starts when the unconsciously generated behavioral impulse is claimed and experienced by the consciousness as if it is its own. This model illus-trates that action precedes reflection.

Such a model also seems to prove that behavioral impulses are generated from the unconscious because of evolved motives and preferences, cultural norms and values, and past experiences in similar situations, and from what other people are currently doing in that same situation (Bargh & Morsella, 2008). These impulses influence behavior with unconsciously operating motives, preferences, associated approach, and avoidance behavioral tendencies, as well as mimicry and other behavior-priming effects triggered by the mere perception of others' behavior.

Conflict and Consciousness

Because of the multiple sources of unconscious behavioral impulses that may be occurring simultaneously, conflicts among them are inevitable because, unlike unconscious activity, a behavioral activity takes

place as a response to a busy world wherein people can do only one thing at a time.

During early development, deeds tend to reflect the actions of an unsuppressed mind. An infant would not endure pain nor suppress elimination behaviors in return for some future reward. However, as the child develops, operant learning assumes a greater influence on the child's behavior; actions begin to reflect suppression and results to inhibitive, aversive, and subjective inclinations that can be stifled behaviorally but not mentally suppressed (Vygotsky, 1962). Although not expressed behaviorally, inclinations continue to be experienced consciously because unconscious agents indirectly influence behavior by affecting the nature of consciousness. Inclinations function like internalized reflexes that may play an essential role in mental simulation, in which knowledge of outcomes is learned without the risks of performing the actual action (Vygotsky, 1962). Some theorists now propose that the function of explicit, conscious memory is to simulate future, potential actions.

The Unconscious: A Guidance for Future Behavior

Simulations are to be accompanied by the capability to evaluate the results. Evaluating the results or products of simulation for potential actions is challenging because diverse considerations should be considered. Products of simulations are evaluated for possible physical or social consequences. Most knowledge regarding what is favorable is already embodied in the agents that directly controlled behavior even before the advent of suppression. The now suppressed agents respond to products of simulation as if they were responding to real, external stimuli and create internalized reflexes that facilitate the formulation of evaluative judgment or gut feelings (Bargh & Morsella, 2008).

Therefore, unconscious conflict resolution processes furnish valuable information to conscious processes of planning for the future. If there are ample motivation and a solid commitment to the recommended course of action, specific plans operate automatically when the event needing these plans of action arises in the future. As such, uncon-

scious processes adapt individuals to the present situation, as well influence ways into future behavior.

Childhood Memories

As a child grows, the caliber of affect regulation that he or she has achieved from infancy onwards is put into practice. The child starts to encounter good and bad experiences that bring helpful and harmful emotions, which would influence decisions and behaviors later on in life. These experiences are recorded in the subconscious and would be strong drivers of thoughts, emotions, and beliefs.

Happy childhood memories are good things. However, unhappy ones may cause difficult emotions like fear, self-doubt, and negativity. These unconstructive experiences create subconscious triggers that are involuntarily activated possibly as natural self-defense mechanisms but unfortunately make individuals behave inappropriately, get into the bad habit, and make poor choices and decisions (Humphreys, 2016).

Appropriate action is required when childhood memories trigger depressing emotions. It is critical to identify memories that evoke such emotions and to remove the negativity associated with it. Of importance is to also understand why those recollections have adverse effects.

There are four common types of unconstructive childhood experiences that greatly influence everyday life: (1) moments of uncontrollable, paralyzing fear; (2) situations where procrastination paid off in the short term; (3) the inability to find a pursuit, skill or purpose that made one's heart sing; and (4) moments of self-doubt caused by judgmental parents and role models (Humphreys, 2016).

When fears acquired during childhood have developed into monsters that cripple normal living, individuals find it difficult to assert themselves, take risks, and explore beyond their comfort zones. These fears are derived during childhood when children are naturally afraid of getting low grades, being embarrassed in class, or standing up to a bully. Experiences like these become harmful when the fear materializes and leaves ill feelings of unworthiness and self-doubt.

Procrastination is a similarly damaging habit that also originated during childhood. As a child, the actions required by some experiences seem acceptable to hold off. However, once habitual, procrastination becomes second nature and becomes detrimental to career, finances, and health during adulthood (Humphreys, 2016).

Following what is available and convenient instead of exploring and pursuing an early childhood dream runs the risk of sacrificing the discovery of what truly is a meaningful pursuit for an individual. This results in a future wherein the individual incorrectly considers his or her passions as secondary to bills, responsibilities, and deadlines, instead of being central to life. He or she falls into a trap of discontentment and admiration of the passion-driven achievements of other people.

Adults are also prone to self-doubt and to excessive scrutiny of their own actions, decisions, and performance. As a result, they feel uncomfortable and nervous whenever they are in situations that call for decisions that only they could make. This tendency has roots from childhood when, while protecting their wellbeing, children were consciously or unconsciously judged by parents or role models (Humphreys, 2016).

Overcoming Childhood Influences

Knowledge of the common childhood influences is the first step to understanding the self. More important is to understand which of these affect a person the most and how he or she could work through these obstacles and gain or reclaim control of his or her own life.

The challenge is because these experiences exist in the subconscious minds, it is difficult to work everything out alone. Getting in touch with one's childhood experiences, with the help of a reputable program and a well-meaning facilitator helps rebuild the self, achieve goals, and improve daily living. With the right program and tools, a person becomes truly brave as he or she faces a fearful situation and tackles it head-on. Self-respect is upheld; life is given the urgency it

deserves, and individual passion is honored more than wealth and pro-fessional stability.

Preferences and Emotions

An individual's evolution in the society, environment, and culture also creates influences and preferences that help individuals approach or avoid aspects of the environment. Each individual is predisposed to prefer certain objects and aspects of the environment over others. Feelings, intuitions, and gut reactions serve as guides in prioritizing the things that call for attention and action (Damasio, 1996).

Preferences are derived from events and insights that served adaptive ends in the past. Evolution builds gradually on what it has to work with at a moment as changes are slow and incremental (Allman, 2000). Knowledge gained at a lower level of blind selection that consistently worked over a long-term evolutionary past surfaced to consciousness as a starting point and appeared as a priori knowledge (Dennett, 1995). This process is a shortcut that saves a person time from having to figure out from scratch which methods are helpful or dangerous.

Because the unconscious is said to have evolved as a behavioral guidance system and as a source of adaptive and appropriate action impulses, unconsciously activated preferences are directly connected to behavioral mechanisms (Bargh & Morsella, 2008). Several studies have established that immediate and unintended evaluation processes are directly linked to approach and avoidance behavioral predispositions.

The automatic activation of attitudes directly triggers corresponding muscular readiness in adults. This arises from the perspective that actions and behavior are always functions of conscious intent and guidance (Bargh & Morsella, 2008). As soon as an individual engages in an approach and avoidance behavior, attitudes and preferences are evaluated with conscious judgments and feelings. This further supports the notion that action precedes reflection. An approach muscular

behavior produces constructive affect, while avoidance produces harmful affect (Bargh & Morsella, 2008).

Emotions Drive Decisions and Behavior

An emotion is an internal state characterized by a complex ensemble of neural activations that result from unconscious neural responses to internal or external stimuli. These responses translate to visible external changes in the body and feelings that arise as soon as the body becomes aware of the response to the stimuli (Damasio, 1999).

Seo and Barrett conducted a study that showed emotions could be functional or dysfunctional for decision making, depending on how people experience the feelings and on how they handle these emotions during decision making. The study found that individuals who experienced more intense feelings achieved higher decision-making performance. Additionally, individuals who were more capable of identifying with their current feelings achieved higher decision-making performance because of an enhanced ability to control the possible biases induced by their feelings (Seo & Barrett, 2008).

Neuroscientist Antonio Damasio's Somatic Marker Hypothesis proposes a mechanism where emotional processes can guide bias decision-making behavior. According to Damasio, physiological changes that occur in the body after experiencing stimuli are relayed to the brain and translated into an emotion that notifies the individual about the encounter. These physiological signals or somatic markers evoke emotions that are consciously or unconsciously associated with past outcomes and bias decision-making towards or away from certain behaviors (Damasio, 1994). Over time, emotions and somatic states become associated with situations and past outcomes to help guide behavior in favor of more advantageous choices.

Like preferences, emotions are evolutionary in nature. A related study by Haselton argued that emotions are evolutionary in nature. Emotions reflect evidence of adaptive design and are not necessarily irrational. These feelings are wisely adapted to potent ancestral

threats—dangerous animals, hostile humans, strategic conflict arising in mating—and to ancestral opportunities—pursuing attractive mates, cementing cooperative alliances. However, since emotions have evolved to operate in ancestral worlds that are different from modern times, there will always be an observable mismatch between the evolved emotional responses and the novel modern environments in which individuals currently subsist (Fessler & Haley, 2003 and Sripada & Stich, 2004).

Decision-making is a cognitive process where the outcome is a choice between alternatives and people approach thinking and feeling differently. Damasio also studied patients who got injuries that damaged the part of the brain where emotions are generated. The patients seemed normal in all aspects except that they lost the ability to feel emotions. Their ability to make decisions was seriously impaired and they found it very difficult to make decisions about where to live, what to eat, etc.

Common emotional decisions may use some logic, but the main driving force of decisions is emotion, which either overrides logic or uses pseudo-logic to support emotional choices. Other times, decisions start with logic and then later use emotion in making the final chopaintice.

According to Seo and Barrett, emotions or affective experience in decision-making has two contrasting perspectives: feeling-as-bias-inducer and feeling-as-decision-facilitator (Seo & Barrett, 2008). The feeling-as-bias-inducer perspective suggests that feelings introduce different forms of bias into the decision-making process and distort decisions in some ways. According to this view, affective experience can be dysfunctional to decision-making performance because feelings can affect the content of information, directly color cognitive and social judgments, and directly bias individual choices.

Lastly, studies have also shown that intense, unpleasant feelings often make individuals prone to favor short-term enhancements, focus-

ing on what is best now, regardless of possible harmful consequences in the long-run.

On the other hand, the feeling-as-decision-facilitator perspective explains that affective experience can improve decision-making performance by facilitating and enabling the decision-making processes. Scholars from several disciplines have suggested that affective reaction is a core driver of cognitive processes involved in decision-making. According to Damasio, feelings boost the conscious attention and continuous working memory required for reasoning or decision-making. Ketelaar and Clore (1997) also suggested that an important function of momentary feelings is to shift attention from less pressing goals to more urgent ones.

Affective experience can facilitate the selection and prioritization of choices relevant to situational requirements (Damasio, 1994; Ketelaar & Clore, 1997; and Schwarz & Clore, 1988). A common dilemma for a decision maker is balancing the conflicting advantages and disadvantages of the potentially infinite factors and options to arrive at an optimal decision at the best possible time (Ketelaar & Clore, 1997). Damasio argued that the human affective system plays a critical role in how individuals quickly generate and select among these numerous options by providing immediate, affective evaluations of which option is relatively good or bad for their personal wellbeing.

Finally, considerable evidence shows that momentary feelings influence information processing, which, in turn, promotes decision-making effectiveness in specific contexts. Individuals in pleasant affective states tend to categorize stimuli in a broader, more inclusive, and flexible manner. On the other hand, individuals in unpleasant affective states are inclined to engage in more effortful, systematic, and gradual information processing (Conway & Giannopoulos, 1993 and Edwards & Weary, 1993), which is useful when decisions require accurate, unbiased, and realistic judgments (Sinclair, 1988) or systematic implementation of a structured decision protocol (Elsbach & Barr, 1999).

Emotions and Decision-making

According to Damasio, emotions and somatic states become associated with situations and past outcomes to help guide behavior in favor of more advantageous choices (Damasio, 1994). A related study by Haselton argued that emotions reflect evidence of adaptive design and are not necessarily irrational (Hasleton & Ketelaar, 2005).

According to tradition, being in a state of emotionality is the opposite of being rational or effective (Ashforth & Humphrey, 1995 and Putnam & Mumby, 1993). Another thought holds that decision-making is rational and a formal mental process based on optimizing utility (Kant, 1991). Rational thinking and decision-making do not leave much room for emotion (Livet, 2010), and emotions are often deemed irrational occasions that could harshly alter reasoning (Barnes & Thagard, 1996).

In contrast, the study made by Seo and Barrett showed that emotions could be helpful in decision-making depending on how people experience the feelings and on how they handle these emotions during decision-making. The study found that individuals who experienced more intense feelings achieved higher decision-making performance, and individuals who were more capable of identifying with their current feelings achieved higher decision-making performance because of an enhanced ability to control the possible biases induced by their feelings (Seo & Barrett, 2008).

Emotions Classified

Lowenstein and Lerner classified emotions during decision-making into two types: those anticipating future emotions and those immediately experienced while deliberating and deciding. Anticipated (or expected) emotions are not experienced directly and immediately. These are predictions of how the individual will feel once he or she experiences the incremental gains or losses that result from a decision (Lowenstein & Lerner, 2003).

A gambler experiences anticipated emotion when he imagines losing a small amount of money and prematurely gets disappointed with the lost investment. He is anxious rather than pleased with the amount that he still owned.

Immediate emotions are real emotions experienced at the time of decision-making. These may or may not be connected to the decision at hand and are triggered by a contemplation of the consequences of a decision. This contemplation is also called anticipatory or integral influences and may also be associated with the current environment or the dispositional affect of the person (Han & Lerner, 2009).

An individual experiencing immediate emotions is prone to negate probability of the possible outcome of riding a lift, for example, because of a fear of enclosure. He may be predisposed to using the stairs despite the convenience of taking the lift because of intense emotions that exact a higher influence on his decision over practicality. Because immediate emotions can be very sensitive to mental images, his fear may be intensified by the vividness of the image of being stuck in the enclosed place. The sooner the impending possible outcome, the more intense the individual's emotion on the situation becomes.

Reconciliation: Individual Differences in Affective Information Processing

There are two perspectives in decision-making show that emotion or affective experience may potentially impair or aid the decision-making process. Whether affective feelings facilitate encouraging or harmful influences in decision-making can generally be determined by how individuals experience and handle affective experiences in functional or dysfunctional ways.

This standpoint is consistent with a broader perspective on individual differences in affective information processing which asserts that the way individuals experience feelings and act on them is separate and relatively independent processes (Barrett, 1998; Feldman, 1995; Gohm, 2003; Gohm & Clore, 2000; and Gohm & Clore, 2002). Indi-

viduals experience feelings in various intensities and have different responses and diverse ways of integrating conveyed information into judgments, decisions, and behaviors.

Seo and Barrett argued that these competing perspectives on emotion literature focus on the two different processes in affective information processing within individuals (Seo & Barrett, 2008). The feeling-as-decision-facilitator perspective deals with how individuals experience their feelings to facilitate decision-making by enhancing memory capacity (Damasio, 1994). On the other hand, the feeling-as-bias-inducer perspective focuses on the process that involves deciding what to do with the emotions. Studies have demonstrated that the bias-inducing effects of feelings disappear when the affective experience is attributed to the correct causes (Forgas & Ciarrochi, 2002 and Schwarz & Clore, 1983). This implies that not all experienced feelings are prone to bias in decisions. The actions prompted by these also depend on how individuals handle the affective experience during decision-making.

Seo and Barrett further attempted to reconcile and integrate the two perspectives by proposing that individuals can simultaneously experience intense feelings during decision-making and regulate the bias-inducing effects on their decisions (Seo & Barrett, 2008). The experience of the emotions called affective reactivity (Larsen, 2000), and the regulation of the bias-generating influences (called affective influence) (Forgas, 2000; Gohm, 2003; and Gohm, 2000), both independently and interactively work with each other to arrive at a favorable decision. Above these two, another dimension called emotion differentiation constructively and indirectly affects decision-making performance because of its beneficial influence on affective influence regulation. Emotion differentiation, also called emotion granularity or emotional clarity (Barrett, 2004), is the degree to which an individual can identify and distinguish specific emotional states.

Affective Influence Regulation in Decision-Making

Affective influence regulation is instrumental in the decision-making process. Scholars have found that individuals differ in regulating affective experiences and the consequences brought by judgments, choices, and behaviors (Erber & Erber, 2000; Gohm, 2003; and Larsen, 2000). Judgments and choices of individuals who are good at affective influence regulation are less likely to be influenced by their affective feelings during decision-making. These individuals are more likely to achieve higher performance in most decision-making tasks where accurate and unbiased judgments are the primary determinant of the quality of decisions. Their decisions will be less prone to possible biases induced by their feelings. In contrast, individuals low in affective influence regulation may arrive at less effective decisions because their current feelings constantly influence their judgments and choices to greater degrees. Based on these, Seo and Barrett asserted that affective influence regulation is positively related to decision-making performance.

Affective Reactivity in Decision-Making

Individuals also differ in the way they respond to various affective cues in the environment (Gohm & Clore, 2000, 2002; Larsen, 2000). Some people are more reactive to harmful than constructive environmental cues, while others react more intensely to both pleasant and unpleasant events in their lives (Larsen, Diener, & Emmons, 1986). This general dimension of affective reactivity, called affect intensity (Larsen & Diener, 1987) or emotional intensity (Gohm, 2003), is the magnitude of affective feelings experienced during decision-making.

Individuals with higher affective reactivity are likely to experience more intense feelings during decision-making. Emotional intensity during decision-making may facilitate the cognitive processes that have important motivational implications for decision-making. Seo, Barrett, and Bartunek suggested that affective feelings constantly influence three core dimensions of task motivation within individuals namely, direction or choice of action, effort or intensity of action, and persistence or duration of action (Seo, Barrett, & Bartunek, 2004). They argued that emotional intensity, whether pleasant or not, may

consciously or unconsciously generate energy or a sense of urgency to act and devote a greater amount of effort to a given task. This generated increase in effort may result in better decisions to the extent that performance is effort-dependent. Seo and Barrett asserted that affective reactivity is also positively related to decision-making performance.

Emotion Differentiation and Affective Influence Regulation

Emotion differentiation is a vital dimension that differentiates individuals in processing affective information. Several studies made by Barrett and colleagues (Barrett, 1998, 2004 and Feldman, 1995) used experience-sampling procedure and found that some individuals tend to describe their affective experiences in a discrete, differentiated means involving high emotion differentiation characterized by smaller correlations among positive and negative affect items. Others repre-sent their affective experience in an undifferentiated fashion, considering a range of similar valence terms as interchangeable—that is, low emotion differentiation characterized by large positive correlations among positive negative items.

Scholars suggest that emotion differentiation has an important implication for the effective use and regulation of affective experiences, particularly for reducing the bias-inducing effects of momentary feelings (Ciarrochi et al., 2003 and Salovey et al., 1995). They argue that specific, differentiated affective states are less prone to misattribution errors (Schwarz, 1990) because these states are usually related to a causal object, whereas global affective states are not (Russell & Barrett, 1999). Furthermore, academics (Barrett et al., 2001; Barrett & Gross, 2001; Ciarrochi et al., 2003) suggest that greater emotion differentiation associated with more highly activate discrete emotional knowledge provides a plethora of information regarding behaviors for dealing with an affective experience and coping with the larger situation (Barrett & Barrett, 2001). Therefore, scholars suggest that individuals with high emotion differentiation are more advantageous in regulating their affective experience and its potentially damaging influences on their choices and behaviors.

Seo and Barrett hypothesized that emotion differentiation is positively related to affective influence regulation. This is specifically true for individuals who are more attentive and capable of identifying current affective states—instead of ignoring them or viewing them globally—and are likely to better regulate the possibly bias-generating effects of their affective feelings during decision-making. As a result, more emotionally differentiated individuals achieve higher decision-making performance with an enhanced ability to regulate affective influence on decisions. This argument leads us to the thought that affective influence regulation mediates the relationship between emotion differentiation and decision-making performance.

The Perception of Time

The universal cliché “Time is gold” is not popular without reason. In this busy world, every second counts. Not a second should go by wasted. People rush to appointments, juggle multiple work and chores, and hope technology would help make ends meet. Quality time is of utmost importance and we regret not having spent it on things that mattered or with loved ones lost and living. Humans are slaves of time, but the surprising irony is that people have the power to control this seemingly ruthless phenomenon.

In her book, psychology writer Claudia Hammond explored the idea that the experience of time is actively created by the mind. People grow up believing that time is one of the few things in life that is absolutely reliable and objective, yet, Hammond proposed that time is something that people might be able to shape and benefit from.

According to Hammond, because the experience of time is constructed in the mind, it is possible for individuals to change elements deemed troubling. This change could mean stopping the years from swiftly drifting past, speeding up time when stuck waiting in line, living the present to the fullest, or figuring how long ago an event in life was. Time can be harsh and unforgiving, but once harnessed, it could be made to work according to one’s conception of time at home, at work, or even in social policy.

Is it possible to control time?

The sense of time is unlike the other senses because it is not felt but perceived. The brain basically gathers information from the senses and organises them in a way that makes sense to individuals even before it is observed. The brain does not necessarily receive information properly so it organises them in a way that will be easily understood. Therefore, what is thought to be a sense of time is simply a whole bunch of information presented in a certain way that is determined by the brain. Processing familiar information does not take much time; however, new information takes longer to process and creates a perception that more time is spent.

This information processing is done in different parts of the brain where the way we perceive time and its duration is controlled. The brain takes a while to process all the bulk of new information it receives. The longer the process, the longer that period spent feels.

In her article, "How Stress Can Change the Size of Our Brains and What We Can Do to Lower It," Cooper explained that life-threatening situations, for example, are remembered as occurring longer because people record more of the scary experience. Danger makes people pay a lot of attention although the brain does not grow extra powers of perception to process life-threatening situations. The same thing happens when people hear an enjoyable music. Greater attention exerted leads to the perception of a longer time.

On the other hand, if the brain does not have to process lots of new information, time seems to move faster. The same amount of time will feel shorter than it would otherwise. This happens when familiar in-formation that has been previously processed by the brain is received. The brain does not have to work very hard anymore, so the processing time appears faster.

Cooper also pointed out that repetition does not make information less significant to the brain. In fact, repeated practice can fundamentally rewire the brain as well.

According to Eagleman, the more detailed the memory, the longer the moment seems to last (Eagleman, 2008). This is the reason why people think that time passes by quickly as they grow older, and why childhood summers seem to go on forever while old age simply slips by. Eagleman explained that familiarity of the world results in less information that one's brain writes down and the seemingly quicker passage of time. Moreover, new information stretches time out as the brain exhausts its resources in processing new information and shrinks when the information it receives is just as expected.

Eagleman's best example of this process is the oddball effect, which is an optical illusion consisting of a series of simple images flashing

on a computer screen. The picture of a brown shoe is continually repeated and every so often, an image of a flower appears instead. To the viewer, the flower would appear to stay on the screen longer than the shoe. However, Eagleman explained that all the pictures appeared over the same length of time. The difference was created by the degree of attention paid to the images. The shoe barely made an impression by the third or fourth appearance. The flower, on the other hand, appeared less so it had a greater impact and lingered like childhood memories.

This means that if the brain received loads of new information over a day, and it got less new information the following day, the first day seems much longer than the first, even though both days consist exactly of the same number of hours.

What affects our perception of time?

This seeming elasticity of how people experience time is one of the most intriguing examples of mind time or perception of time. Hammond points out that people slow time when gripped by mortal fear. According to her, the cliché about the slow-motion car crash is, in fact, a cognitive reality. The same seemingly sluggish experience plays out even in situations that are not life-threatening, but which are still associated with strong feelings of fear.

To have an objective understanding of the popular notion that time seems to slow down during a life-threatening situation, Stetson et al. conducted an experiment to determine if the said impression truthfully captured the actual subjective experience (Stetson et al., 2007). They hypothesized that if time can slow down as a single unified entity like the way it does in movies, then the dawdling motion could lead to a capacity for higher temporal resolution.

The result of the study suggests a close interconnection of time and memory. It explained that during a terrifying experience, the part of the brain called amygdala is believed to contribute to the creation of dense memories. This brain activity associates the frightening event

with the memory. The more density the memory one has of an event, the longer the experience is interpreted to have occurred.

Other than dense memories that trigger fear, age can also be considered in understanding the perception of time. How the brain processes information during later years makes time seem to fly by faster. As people grow older, the brain encounters information that it has already processed. This familiar data takes a shortcut to the long mental process and gives the feeling that time hastens and passes by in an easy breeze.

Because most information processed in children's brains are brand new, more time is needed to process the new experiences. Time, therefore, pass by slowly in the point of view of children.

Stimulus can also affect the duration of time. Motion and its sequence complexity are processed by the brain based on the number of events that occur in the sequence (Eagleman, 2008). The brain interprets the occurrence of many events as having a longer duration of time. To support this hypothesis, Kanai et al. explored the basis of motion-induced time dilation and concluded that temporal frequency was the critical element in the distortion more than the motion itself (Kanai et al, 2006). Although temporal frequency or event density, in general, appears to be an adaptive factor, it is not the sole aspect in determining duration.

According to Eagleman, there are simple ways to dilate durations without applying changes to the stimulus. Xuan et al. proved that duration is dilated by the magnitude of the stimulus (Xuan et al, 2007). Stimuli that are larger, brighter and more numerous are perceived to have a longer duration than stimuli with the same length but with smaller magnitudes.

Predictability also modulates duration. The first appearance of a stimulus that is repeatedly shown is said to have a longer duration than the successive stimuli (Eagleman, 2008). In the same way, the impression created by the oddball stimulus in a repeated series will also seem to

last longer than others of the same physical duration. This expansion of perceived duration has been referred to as a subjective expansion of time (Tse et al, 2004). Nevertheless, it is significant to note that psy-chophysical results could similarly be translated as a duration contraction of the repeated stimuli, rather than an expansion of the first or oddball stimulus.

From these, Pariyadath and Eagleman highlighted that this model of duration distortions seems to match the pattern of neural activity seen with repetition (Pariyadath & Eagleman, 2007). They raised that neuronal firing rates in higher cortical areas quickly become suppressed after repetitive appearances of a stimulus in what is called as repetition suppression.

Because of the recurring presentations of a stimulus, a perfected representation or a more efficient encoding is achieved in the neural network and lowers metabolic costs. This leads to a speculation that a suppressed neural response corresponds to a shorter perceived duration (Pariyadath & Eagleman, 2007).

It is also observed that the duration distortions likewise occur with high level predictability. For example, when the series 1-1-1-1-1 is presented, the first stimulus appears longer because of the supposed duration contraction of the following stimuli. Significantly, Pariyadath and Eagleman revealed that the same illusion also occurs for the sequence 1-2-3-4-5, apparently because the successive stimuli are predictable, even while the succeeding numbers differ. According to them, this finding indicates that the predictability of successive stimuli involves higher cortical areas than the primary visual cortex, and that repetition suppression may be a special case of prediction suppression.

Temporal Order Judgments Dynamically Recalibrate

In a 2002 study, Haggard and colleagues noticed that when a participant pressed a button, the beep that followed the motor act 250 msec later appeared to be pulled slightly closer to the button press (Haggard et al, 2002). The compression of the perceived time between the but-

ton press and flash could have explained this, but a few years later, Stetson et al. (2006) gave a better explanation saying that the timing expectations of motor acts and sensory consequences can shift in relation to one another, even to the extent that they can switch places (Stetson et al, 2006).

To illustrate, this was triggering a flash of light with a press of a button. After injecting a slight delay of 100 milliseconds, for example, between the press and the consequent flash, pressing the button several times made the nervous system adapt to the delay. Haggard and colleagues suggested that the two events, as a result, seemed to slightly occur closer together. Once the participant has adapted to the delay, the flash was immediately and unexpectedly presented after the button press. This led the participant to believe that the flash happened before the action. There was an illusion that the occurrence of the action and sensation action was reversed.

The hypothesis was that the illusion reflected a recalibration of motor-sensory timing, which resulted from the prior expectation that sensory consequences follow motor acts without delay. The key fact is that temporal order recalibrations are also reflected in passive conditions that do not include an action. Repeated exposure to non-simultaneous external sensory events can alter subsequent simultaneity judgments (Fujisaki et al, 2004) and temporal order judgments (Stetson et al., 2006 and Vroomen et al, 2004).

However, the shift in the judgments indicates that the best way to calibrate timing expectations of incoming signals is to interact with the surroundings. A kick or a knock can make the brain formulate an assumption that the sound, sight, and touch should be simultaneous. If one of the signals arrives with a delay, the brain adjusts its expectations to come up with a better approach to subjective synchronization.

Dynamically recalibrating the chronological interpretation of motor and sensory signals is not a trick but a critical brain activity in resolving the problem of causality. In the end, causality requires a temporal order judgment. The occurrence of the ‘before’ and ‘after’ of an event

can be accurately determined in a multisensory brain by keeping the expected time of signals well calibrated (Eagleman, 2008).

Bridging the gaps in time and memory

For Eagleman, we are all living in the past. Human consciousness lags 80 milliseconds behind actual events. Just when one thinks that an event occurs it has already happened. Eagleman suggested that the brain tries to reconstruct events in retrospect and sporadically gets it wrong. This happens because the brain works to create a unified picture of the world from stimuli that arrive at different times.

Touching the toe and nose at the same time makes one feel the sensation from the toe and the nose at the same time, even though the signal from the nose is first to reach the brain. A hand clap is heard and seen at the same time, although auditory processing is faster than visual processing. The brain also makes up for gaps in information like those experienced when eyes blink. Eagleman points out that one's consciousness goes through all these troubles to synchronize things.

Memory is essential to constructing scenarios for ourselves in the future (Musser, 2011). According to Henry Roediger, people store only bits and pieces of past events, which include splashes of impressions that our mind merges into what appears to be a seamless narrative. People rewrite memories every time one is retrieved so that the time it is recollected, the memory retrieved is no longer the original one but the last one recollected. Each time a story is told, people embellish it, yet they remain genuinely convinced of the ac-curacy of memories.

Technologies to Help Understand the Mind

For many years, scientists have been studying the capacities and inclinations of young brains with a fascination not only for its sheer mystery but also for the possibility of answering fundamental questions of philosophy and psychology. How do biological evolution and cultural experience work together to shape human nature? Are human beings inherently good or bad? Are babies born with a sense of morality or with minds like blank slates waiting to be trained?

One of the first scientists who attempted to study babies is Jean Piaget in the middle of the 20th century. Piaget observed infants and older children understand how they perceive the world. He hid objects and investigated whether infants would try to find them. His conclusion was that babies cannot grasp the concept that an object still exists when it is out of sight until they are around eight months old.

Piaget is also known for developing the theory that babies are essentially born as blank slates but possess an instinctive system that motivates the exploration of the world and which allows them to absorb knowledge.

Measuring Gaze and Looking Time

In the early 1960s, gaze measurement started to become a staple in neuroscience experiments. Robert Fantz, a US developmental psychologist, began using the length of time babies spend looking at something to determine interest in an object. According to Fantz, a two-month-old baby spent more time looking at a sketch of the human face than at a bullseye. Succeeding gaze experiments have led some researchers to conclude that babies are born not so much with blank slates. Rather, they are born with an innate appreciation of number and human faces. They also have developed the ability to recognize their mother's native language because of hearing speech while in the womb.

Although thousands of experiments using gaze measurement have shown that the looking-time method is quite a reliable technique,

there is a growing number of researchers who think that these studies should be viewed with caution (Geddes, 2015). They claim that there is danger in relying on an infant's fleeting glance to understand the mind. One of the concerns is that some labs do not have sufficient control for confounding factors like the physical features of the stimulus, including the curve or straightness of the line, the colors present in the environment, and the amount of contrast in lighting.

The brains of babies also grow and develop uniquely. A newborn's gaze might reflect inherent abilities, but the gaze of a seven-month-old child might already be influenced by the learning and memory that he or she has started to acquire. According to Jerome Kagan, a psychologist at Harvard University in Cambridge, Massachusetts, an infant may look longer to relate the event to what he or she already knows. He pointed out that there is no measure that can supply all the evidence needed to conclude about what infants know.

Another challenge is the fast-paced development during the first two years of life. During this time, consciousness, traits of personality, temperament, and ability all become evident and could signal that development might be drifting off course. This stage is also the most difficult to explore because many of the standard tools of human neuroscience are useless as babies do not lie awake and still in an imaging machine. They neither respond to questions nor do as they are told.

Modern facilities around the world, like the Babylab at Birkbeck, University of London, have new technologies that overcome these hurdles. Using new, sophisticated tools, a series of firsts about the infant mind was revealed. Studies uncovered that babies prefer to look at faces that are looking directly at them and that they respond to direct gaze with enhanced neural processing. Scientists found that these changes in the brain response may be associated with the onset of autism. This is the first evidence that measuring the brain function might be able to predict the condition (Geddes, 2015).

To Mind and Mend

Scientists are also trying to strengthen conclusions by combining multiple techniques. In 2005, Mark Johnson, director of Babylab, and his colleagues combined observations of looking time with electrical measurements of brain activity to explore Piaget's claim that infants less than nine months do not understand the permanence of an object that is out of sight. They compared changes in adults' brains and the brain of six-month-old babies when viewing an object that disappeared. Johnson and his team found an increase in a particular type of neural oscillation over the right temporal cortex of adults as they viewed the disappearing object. Six-month-old babies show a similar pattern, which suggests that babies do keep hidden objects in mind. This observed pattern was not discerned when the object disintegrated instead of being hidden (Geddes, 2015).

These studies convinced Johnson that babies are not born blank slates; however, they do not possess adult-like concepts about things like quantity. Johnson argues that newborn babies have basic attention preferences for faces and speech that shape the brain as it develops. An example is the preference of babies for direct eye contact that helps them focus on socially relevant parts of their surroundings and enable them to learn about language and social cues like facial expressions.

New Tools for Studying the Brain

Looking time continues to be an important tool in today's studies except that these days, it is measured not by mere human observation alone but by precise technology of tracking the eyes as well. Babies stare at the computer screen to observe pictures of three dancing women, four black circles, and a face among random objects. Below the computer screen, a box flashes infrared light at the cornea. The reflected light is then captured and processed to identify the direction of the gaze. Data is streamed into a computer that monitors the process.

Electrodes are also sometimes attached to the baby's face in a method called electromyography (EMG). This technique picks up the slightest

electrical activity in the facial muscles and helps indicate if the baby is activating an eyebrow area even if the movement is faintly done as a response.

The Infant Near-Infrared Spectrometry (NIRS) is advancing the capability of researchers to study the minds of babies. NIRS tracks the flow of oxygenated blood and allows scientists to identify brain areas that are activated in response to external stimuli. A 2009 study that used NIRS discovered that the brains of five-month-old babies already show that response to social stimuli, like a woman playing peek-a-boo with them, exhibits an adult-like pattern of activation (Geddes, 2015).

However, NIRS has shortcomings because it cannot measure brain activities occurring in important inner brain regions, such as the hippocampus or the amygdala. According to Kagan, the brain is a complex connected circuit and if only a superficial part of this circuit is measured, one might arrive at inaccurate conclusions. To evaluate deeper areas of the brain, researchers should be able to benefit from functional magnetic resonance imaging (fMRI), which has gathered many insights on the adult brain. However, fMRI is highly sensitive to movement and because babies are very active, they can only be scanned when sedated or asleep.

Techniques for understanding the brain continue to evolve. Emily Jones, project director at Babylab in Birkbeck, is piloting tasks that are dependent on gaze and would allow babies to actively participate in experiments and get rewarded for controlling their attention. In the bucket list of researchers is to develop ways of using fMRI on babies in action.

Recent Studies on the Young Mind

One of the running studies at the Babylab in Birkbeck aims to assess the development of mimicry in babies and the unconscious tendency of people to frown at the sight of someone frowning, or smile when others smile. According to Carina de Klerk who leads the mimicry study at Birkbeck, mimicry serves important social functions in adults

and has been suggested to be socially binding. Some researchers believe that babies are born with this human tendency as newborns have been observed to stick their tongues out in response to an adult doing the same. It is not clear though if babies are truly copying or are just reacting to something they find exciting.

In 2013, the Babylab in Birkbeck started a project to a study that would detect more early signs of attention deficit hyperactivity disorder (ADHD) and find behavioral therapies that might help. The study involved infants who are twelve weeks old and at high risk of autism spectrum disorder or ADHD and a control group. A five-month-old baby named Ezra is a control for this study. He is not at high risk because he does not have an older sibling with one of the disorders. He was asked to look at random objects on a screen while reflected infrared light allows researchers to gauge precisely what he is looking at and in which order. According to Jones, developing babies will usually always look first and longer at the face before looking at the other objects (Geddes, 2015).

Infants at high risk of autism tend to look at the face first and then spend less time overall on looking at any of the objects than neurotypical babies would do. Those who developed autism had the shortest looking time of all. A separate eye-tracking study published by the team in the Babylab earlier in 2015 revealed that nine-month-old babies who went on to develop symptoms of autism were more likely to spot the odd-one-out among a group of letters on a screen (Geddes, 2015).

According to Teodora Gliga, it is not completely clear how and why this is possible, but the working hypothesis is that infants are more attentive to the details of what they see. Oh the other hand, it is possible that children who develop autism find it harder to draw general conclusions about what they are seeing (Geddes, 2015). Autism is usually not diagnosed until the child is three years old, but the Gliga's team is hopeful that early brain differences would someday provide early indicators of autism.

A clinical trial at the Babylab already suggests that early intervention does have effects. Babies at high risk of autism were randomly assigned to a group that was visited by a therapist at least six times between age seven and ten months. This group was compared to a group of high-risk babies who did not get therapy. There were observable hints of improvements after five months. The engagement, attention, and social behavior of babies improved. However, the team acknowledged that many of the results had wide confidence intervals and that it is too early to conclude that the intervention will have long-term effects.

Part II: To Mind and Mend

Life's unpredictable twists and turns bring about different behavior and responses among individuals. When the tough gets going, people can always rely on the power of the mind and their ability to appropriately channel this power to impact change and achieve effective daily self-management.

The Power of Body Talk

Studies reveal that a person's body language has a significant impact on moods, behavior, and even the way people regard others. Richard Petty, a professor at the Ohio State University, conducted a study that showed how nodding or shaking the head influences one's thoughts and how body movements can influence attitudes and self-esteem. These actions serve as a kind of self-validation that confirms how one feels about his or her own thoughts. According to Petty, nodding helps people have confidence in what they are thinking, but shaking the head may lose confidence in their thoughts (Grabmeier, 2009).

Erik Peper, a behavioral scientist and professor at the San Francisco State University, takes breaks during lectures and encourages his students to get up and wiggle. He conducted a study that assessed how posture affects an individual's ability to generate constructive and injurious thoughts. According to the participants in the study, sitting up straight brings out optimistic thoughts and memories easier. They also reported that while the act of skipping significantly increased their energy levels, a sad, slumped walk resulted in declining energy levels. Further, the decline in vigor was reported by those who conveyed experiencing depression (Brown, 2013).

These findings led some scientists to suggest that the ergonomics of an environment, like the shape of office desks or chairs, for example, influences posture and may, therefore, have an impact on the behavior of the person using the desk or sitting on the chair.

Body language, like good posture, not only helps people score high on the happiness scale; it also creates a sense of power and gives individuals a feeling of control over things and situations. Expansive postures like standing tall create a perception of a larger body size, and thus, a feeling of being in command. This, in effect, improves decision-making.

Dana Carney and Andy Yap from Columbia University and Amy Cuddy from Harvard University conducted a study that found how open, expansive postures like spreading the limbs or stretching the body increased the sense of power and appetite for risk. On the other hand, closed, constricted postures like collapsing the body inward to minimize occupied space have the opposite effect. The study measured the appetite for risk, by giving participants $2 and saying that they could keep the money or roll a die and risk losing the $2 for a payout of $4. This is a risky but rational bet since the odds of winning were 50/50. The participants who took an expansive posture reported feeling significantly more powerful and in charge and were also 45% more likely to roll the die (Galinski & Huang, 2011).

The study of Carney and colleagues also used salivary samples to prove that expansive postures also changed the participants' hormone levels. They found that expansive postures led individuals to experience elevated testosterone and decreased cortisol levels. This neuroendocrine profile of High T and Low C has been consistently linked to such outcomes as disease resistance and leadership abilities. There has been past research that showed how occupying powerful roles leads to expansive postures, however, it was Carney et al. who first investigated the causal effect of posture on the mental experience of power (Galinski & Huang, 2011).

Working One's Way Around Cognitive Biases

Learning from past experiences have led the human mind into believing numerous facts and even fallacies. Because of the need to respond quickly to the heap of complex information in the environment, people developed a tendency to think in certain ways and have created

mental shortcuts. As a result, daily decision-making, including critical ones, is influenced by mental mistakes and errors called cognitive biases.

People sometimes confuse cognitive biases with logical fallacies; however, the two are not the same. A logical fallacy results from an error in a logical argument, while a cognitive bias is rooted in thought processing errors that usually occur due to problems with memory, attention, attribution, and other mental mistakes.

Whereas a logical fallacy is a mistake in logical argumentations like ad hominem attacks, slippery slopes, circular arguments, and appeal to force, a cognitive bias is an actual limitation or defect in human thinking. This limitation results from errors of memory, social attribution, and miscalculations such as statistical errors or a false sense of probability (Dvorsky, 2013).

Natural Mental Errors

When making judgments and decisions, people think that they are being objective, logical, and capable of taking in and evaluating all the information available to them. The truth is, judgments and decisions are often infused with errors and swayed by a variety of elements like cognitive biases to which the human brain is constantly subject to.

A cognitive bias is an error in thinking that happens as people process and interpret information from the environment. This mental error is often the result of attempts to simplify information processing (Cherry, 2016). Some social psychologists believe that our cognitive biases help us process information more efficiently, especially in dangerous situations (Dvorsky, 2013). These are also rules of thumb formulated to help individuals understand the world and arrive at decisions relatively faster (Cherry, 2016). Unfortunately, these biases predispose people to process erroneous beliefs that result in questionable decisions and flawed conclusions.

Some biases are related to memory. The way an event is remembered may influence an individual's thinking and decision-making regard-

ing the memory. Even the selective way people pay attention to things and events in the environment create biases that influence judgments. Social pressures, individual motivations, emotions, and limits on the mind's ability to process information can also contribute to these biases (Cherry, 2016).

Some of these biases are recognizable while others are subtle and almost impossible to notice. Nevertheless, all of them influence the way people see and think about the world and lead to grave mistakes.

An understanding of these cognitive biases helps individuals have control of their minds and manage the way they think and make decisions every day. Awareness of these tendencies lead to critical thinking, and once critical thinking comes before action or decision, a person's focus is maintained. Energy is channeled to important tasks and issues rather than on fixing mistakes or contemplating on how to minimize loss. The individual remains in control of emotions and maintains a calm disposition.

Critical thinking is an increasingly important skill that allows the thinker to set him or herself apart from leading and influencing others who have not yet figured biases out. Becoming this thought leader also gives the ability to gain the trust of people with whom an individual connects, including the authority in the area in which he or she has established expertise.

Knowledge of these biases is vital for daily decision-making and in managing emotions. Once the mind is trained to work around these biases, people gain control of their lives and achieve better disposition in life.

Five Cognitive Biases and How to Direct the Mind to Respond

Backfire Bias. This is the tendency of an individual to reject any evidence or idea that contradicts his or her point of view. The backfire effect is actually a defensive response to new information that challenges existing beliefs. The individual sticks to existing beliefs instead of questioning the new idea.

In his blog article "Learning to learn: fighting cognitive biases", Greer illustrated this bias by giving the example of a boss who has just in-formed a subordinate colleague of an article explaining a study in which orange call-to-action buttons receive the most clicks. The col-league initially thought of disagreeing simply because he has a personal dislike for orange. But he holds himself back, reads the article, and realizes that the information does make sense (Greer, 2013).

To direct the mind to overcome this bias, Greer recommends treating one's own ideas and points of view as hypotheses that need to be challenged and proven instead of taking them as hard, absolute facts. To be challenged or proven wrong is neither bad nor diminutive; it only shows that something new is learned.

Overconfidence Bias – This is the tendency of people to get over confident about their abilities and to take greater risks as a result. Experts are more prone to this bias than lay people because the former is more convinced of being correct. There is a pattern of over confidence in easy situations and under confidence in difficult situations.

To determine how much confidence people should have on their own knowledge, psychologists Howard Raiffa and Marc Alpert asked people to estimate the number of physicians and surgeons listed in the Yellow Pages of the phone directory for Boston or the number of foreign automobiles imported into the United States and two other topics. The participants were made to choose any range they liked, with the aim of being not more than 2% off. In the final tally, 40%, instead of only 2%, of the respondents were wrong. The researchers named this amazing phenomenon the overconfidence effect (Alpert & Raiffa, 1982).

According to Rolf Dobelli, MBA, Ph.D., author of *The Art of Thinking Clearly*, people systematically and massively overestimate their knowledge and ability to predict (Dobelli, 2013). Some apply the overconfidence effect to forecasts, like the stock market performance over a year or the profit of a firm over three years.

In another survey used by Dobelli, 93% of U.S. students regarded themselves to be above average drivers, while 68% of the faculty at the University of Nebraska rated themselves in the top 25% for teaching ability. Even entrepreneurs and those planning to marry also believe they can beat the odds. The truth is, entrepreneurial activity would be a lot lower if not for the overconfidence effect. Dobelli gave the example of how a restaurateur hopes to establish the next Michelin-starred restaurant, even though data show that most restaurants close after only three years.

The overconfidence effect does not deal with whether single estimates are correct or not. Rather, it measures the difference between what people really know and what they think they know. Dobelli highlighted that it is innate and not driven by incentives. He concluded by saying that everyone should be aware that people tend to overestimate their knowledge. Everybody should be skeptical of predictions, even if these assumptions come from experts. According to Dobelli, people are better off favoring the pessimistic scenario because it gives room for judging situation somewhat realistically.

Irrational Escalation Bias – Called sunk cost fallacy in Economics, this bias is compounding a bad investment by putting more money or effort into an investment that has already gone bad.

According to researchers Daniel Kahneman and Amos Tversky, a reason people fall prey to this bias is loss aversion. People have a stronger preference for loss avoidance than for acquiring gains. Continuing an activity based on sunk costs helps avoid in the short run what social psychologist Dan Ariely calls the pain of paying (Lee, 2015).

To think that greater investment in something one has already invested in will fix or prevent further loss magnifies the commitment to the activity and can increase the possibility of more investment based on sunk costs (Lee, 2015).

If an investment turns out badly, the best thing to do is to make the rest of it turn out better. Accidentally spilling coffee on one's shirt

one beautiful morning does not mean he or she should mull over the incident the entire day, neglecting his or her responsibilities. There is the rest of the day to be productive and make that day the best one has ever had.

Observer-Expectancy Bias – This happens when a person unconsciously influences participants or people with his or her own beliefs or expectations. The old example from Seaver (1973) is a teacher who forms expectations about a younger sibling based on another sibling's performance. Seaver found a greater relationship between the achievement scores of the two siblings taught by the same teacher than between the achievement scores of control siblings taught by different teachers (Darley & Fazio, 1980).

Detaching the self from the situation is also the way to overcome the observer-expectancy bias. During tests or experiments, a person should recognize that there is a 50% possibility that his or her hypothesis will be disproven. This will also mean that something new is learned. Changing the results to support a hypothesis only yields detrimental effects in the long run (Greer, 2013).

Reactance Bias – This cognitive balance is the tendency of people to do something different from what is asked. A reaction to a perceived attempt to constrain freedom of choice, the Reactance Bias happens when one feels compelled to accept a certain view. As a result, the resolve for an alternative view is strengthened, regardless of its relative merits.

When individuals feel their free behaviors are eliminated or threatened with riddance, the motivational state of psychological reactance will be aroused. This state of reactance is directed towards the restoration of the threatened or eliminated behavior (Miron & Brehm, 2011).

The classic reactance example is that of parents instructing a child to action or inaction like to wear shoes at school. If the child believes

that he or she is free to decide which pair of shoes to wear, then he or she will experience reactance (Miron & Brehm, 2011).

For Greer, situations that trigger reactance bias call for the swallowing of pride and is one of the more difficult bias situations to avoid. Recognizing that doing what someone asked one to do probably is to the best interest, the person being asked to comply would have probably been perfectly okay with complying even he or she were not told to do such. Freedom of choice remains, and everyone is aware of that (Greer, 2013).

Resilience Wins the Day

What can a person do when faced with big challenges and the subconscious starts to surface ill feelings like worry, panic, fear, or anger? In situations when resilience sounds like a big, impossible word, should one heed the mind's call to fight or flee?

Getting through tough times like a winner is possible. All a person needs is a firm and ample knowledge of the self, how to make the mind work to his or her advantage, and some professional help from time-tested therapeutic methods like PISTA Therapy. Working on the following points makes one win at anything every day.

Recognize and accept. First is to readily recognize the challenge that one has on hand. People who get past difficult situations go through the stages of grief quickly. They do not spend much time on the denial stage and are able to immediately acknowledge and accept the reality of their situation. Then, they allow their conscious mind to direct its focus on the situation to keep downbeat feelings at bay.

PISTA Therapy helps an individual achieve this by assisting the mind in identifying the goal for the day or until the situation is overcome by the person. Even at loss or confusion, PISTA clears the mind, helps set the direction, and assists in discovering the proper course of action to take.

Control emotions. Part of the subconscious' role in protecting one's self from danger is to conjure emotions that will warn an individual about an impending harm. Managing these emotions directs focus on more rational, calming thoughts and paves the way for good decision-making.

With the guidance of the PISTA method, emotions are properly classified to help individuals deal with disturbing issues. Thus, the individual's mind is calmed and is then able to identify appropriate reactions.

In his article, "How to Be Resilient: 8 Steps to Success When Life Gets Hard," Eric Barker gave the example of a study made by psychologist M. Ephimia Morphew on series of accidents wherein scuba divers succumbed to death even with perfectly functional air tanks and regulators. The study revealed that the divers drowned because they pulled the regulators out of their mouths as an overpowering impulse for survival. It appears that certain people experience an intense feeling of suffocation when their mouths are covered.

The emotional response that prodded the divers to get air is generally a good reaction for survival. However, it was the wrong choice of reaction under the extraordinary, non-natural circumstances of scuba diving.

Be confident and creative. Dreaming an extra mile sets some rationality aside and opens new channels for renewed creativity. It helps individuals be more effective and motivates to keep on trying even after failure. Successful and resilient people do not stop trying until an idea works. Overconfidence keeps them trying.

Of importance though is to know the difference between denial of a situation and overconfidence in one's abilities. Denying or distorting a bad situation may seem comforting in the short term, but posts potential harm in the long run because it impossible to solve a problem that is being denied. On the other hand, a strong belief in one's capabilities and hard work, along with a realistic view of the situation,

helps solve problems. PISTA helps individuals discover their strengths and build their confidence.

Be prepared. The best preparation is to eliminate bad habits and to establish and keep good ones. Deliberate actions tax willpower and may impose stress. Actions out of good habits, meanwhile, create resiliency because they prepare the person for unfavorable or unfortunate situations.

PISTA Therapy facilitates preparation for these scenarios by calming the individual and generating a surge of energy to help him or her face the situation and take matters up.

Keep busy as a bee. Staying busy is the best way to survive and keep emotions under the water in the face of difficulties. Barker quoted Richard Mollica, a psychiatrist at Harvard studying trauma, who said getting organised and keeping busy is the most important goal of people who experienced trauma because the hands force order on the mind. The PISTA method encourages users to get involved in activities and to get regular breaks from one's routine with physical movement and exercise that will support both the body and the mind.

Add some spice. In his book *Touching the Void*, Joe Simpson told the story of how his calf bone got driven through his knee joint on a climbing trip that is 19,000 feet up on the mountain. He survived and triumphantly endured his slow and painful descent by turning his demise into a game. Simpson meticulously repeated the pattern that he noticed in his wobbly hops. By doing so, he detached himself from the pain and other things that made his descent laborious (Simpson, 1988).

According to neuroscience, patterned activities fire up the same reward center that cocaine stimulates. Thus, feelings of safety, reward, and total brilliance are induced. Adding spice to activities and turning challenges into games trigger good feelings that will help an individual get past through his or her situation. The PISTA method presents, unexpectedly sometimes, different images and stories during the process. Thus, situations become lighter and more manageable.

Quit at the right time. After good preparation, managed emotions, enlivened situation, and many trials, some people are smart to realize that a task or situation is not for them, so they quit. It is a matter of looking at the self and assessing one's own abilities, and then realizing that it is better to turn back and get a chance to do it again rather than to go for it and have a chance to back at all (Barker, 2014).

With the PISTA method, issues where there is emotional entanglement surface. It becomes easier for individuals to see which issue is the no-win situation and which they should stop mentally fighting for. This type of quitting makes one happier, reduces stress, and increases health. People who quit their unattainable goals saw physical and psychological benefits. They have less depressive symptoms and less negative affect over time. They also have lower cortisol levels and lower levels of systemic inflammation. Over time, they develop fewer physical health problems.

Be ready to give help, too. Getting help is good, but it is fascinating how giving assistance is more rewarding. Giving helps the giver because when a person takes the role of caretaker, the feeling of having a meaning in life is increased. This is handy when people are in the worst situations and yet succeed.

The book *Deep Survival*: Who Lives, Who Dies, and Why, explains how the positive cycle happens.

> "Helping someone else is the best way to ensure your own survival. It takes you out of yourself. It helps you to rise above your fears. Now you're a rescuer, not a victim. And seeing how your leadership and skill buoy others up gives you more focus and energy to persevere. The cycle reinforces itself: Your support buoys them up, and their response buoys you up."

In PISTA Therapy, the renewed energy drawn from within prepares the individual for help and puts him or her in a disposition where he or she is naturally ready to give help.

PISTA Overcomes and Conquers

To mend a life broken by past experiences is to conquer the self through the mind. People struggle to get out of problems, to alleviate physical and emotional pain, and to arrest fears but without a clear set of guiding principles. The PISTA approach understands the nature of the human mind and guides individuals in living meaningful lives. This method touches past events in which resources to help manage everyday challenges are uncovered.

Through focus and self-observation, PISTA helps people rediscover their identity, that is, their moral character and the teachings and experiences that have molded them. Realizations like these enable individuals to manage challenges across different life stages. By drawing from inner strength, PISTA helps build confidence as one grows and learns how to practice equality, fair play, and self-control when interacting with others throughout their lives.

PISTA has many modalities for application in the different stages of cognitive growth. Children from ages 3 to 6 years develop a sense of knowing the self, reflection, and focus. Pre-teens who are building the foundation of their personalities at 8 to 10 years are taught concrete thinking as they transition from being a child to a teenager. During this stage, the formation of self-identity and the quest to establish a connection to the world are the challenges of the developing pre-teen individuals. Meanwhile, asserting the self and establishing individuality as they face complex demands of the society are the tribulations of children aged 12 onwards.

The PISTA method incorporates brain stimulation through sound to affect change and growth throughout life stages. It considers each individual's situation, including culture and values, with tact and ample responsiveness. Once PISTA practice is learned, the method becomes a tool that will regulate one's mind, stabilize a person's disposition, and broaden one's understanding of the self in relation to the world. It also helps calm people's confusing emotions over minor or serious issues in daily events. PISTA creates the confidence that individuals are free from fear and capable of taking on difficult challenges.

PISTA: Self-Empowerment Through the Mind

In his book, *The Power of Sound: How to Be Healthy and Productive Using Music and Sound*, Joshua Leeds described the year 2010 as the beginning of the decade of sound. After many years wherein sound and music have been used differently in health and wellbeing across cultures, the birth of high technology images produced by advanced technologies, like Magnetic Resonance Imaging (MRI), paved the way for scientists to study the brain and its functions in ground-breaking ways. Perception started to change as more of these machines became available.

Now, there are new ways for researchers to explore and study the effects of sound and music to human functions. Studies discovered that cognitive interpretation of music is so complex and uses many various parts of the brain. Since then, the study of musical neuroscience has a new model for studying cognition and an empirical understanding of sound and music. The effectiveness of stimulating the mind and harnessing its powers to facilitate learning and to take control of everyday life through sound now has supporting data to validate suppositions and findings.

Effects and Aspects of Sound

Psychoacoustics is the study of the effect of music and sound on the nervous system, including psychological responses and physiological impact. Traditional psychoacoustics generally pertains to the perception of sound and the production of speech. There is a huge amount of research primarily on the exploration of speech and the psychological effects of music therapy. However, there is now a renewed interest in sound as vibration (Leeds, 2010).

There are two perceptions of sound: psychological and neurological. The psychological perception is the memory-based reaction triggered when a song or melody from childhood is heard. This also involves physiological reactions such as the acceleration or delay of brain waves in response to detuned tones, for example. The soundtracks create a random, sonic effect and trigger an active listening response

that tones the auditory system including the tiny muscles in the ear. As a result, sounds are heard more accurately, and speech and communication skills are improved.

The neurological perception of sound, on the other hand, is what draws many to psychoacoustics, especially after Alfred Tomatis established a school of thought that values the examination of both the psychological and neurological effects of resonance and frequencies to the human body (Leeds, 2010).

Tomatis asserts the extraordinary power of the ear by saying that other than the critical function to aid in communication and balance, the ear's primary purpose is to recycle sound and recharge people's inner batteries. According to Tomatis, the first function of the ears in utero is to govern the growth of the rest of the physical organism. After birth, sound nourishes the nervous system just as how food provides for our physical bodies. Food provides nourishment at the cellular level of the organism, and sound feeds the body with electrical impulses that charge the neocortex.

Leeds also explained that the human auditory mechanism serves as a barometer of physiological status as well as of the emotional state of mind. The effects of a malfunctioning auditory system may result in more than a diminishing state of hearing. According to Leeds, a weakened auditory system endangers auditory sequential processing, which affects short-term memory and the critical ability to link pieces of the auditory information. When the net effect of hearing is lost, the important source of energy of the brain and nervous system is reduced. The disintegration of the auditory function leads to confused thinking and unstable emotions.

Sound, a Tool to Uplift Human Experiences

Because of its power to control the human body, new methods leverage sound for healing as it can be used as a tool to de-stress, improve mental productivity, accelerate learning, minimize pain, and facilitate healing. This accounts for the onset of contemporary forms of audito-

ry-based therapies that have gained popularity for years (Leeds, 2010).

PISTA Sound Therapy is one of these contemporary methods that leverage the human auditory function to heal and improve wellbeing. Developed by a group of psychotherapy practitioners in 1980, PISTA Sound Therapy is the product of years of research on sound and issues arising from various neurological disorders. When the Ecole Nationale de Ski et d'Alpinisme joined the research team in 1997, Dr. Siu Chung Wong and his team used PISTA frequency and research in healing sound to develop PISTA ski techniques that which applied their research in energy disruption on the body energy systems. The technique addressed energy imbalance among ski athletes and studied how the method can be integrated with mainstream medicine.

Since 1969, PISTA has been conducting research on sound, light, and frequency to discover new ways of applying these to neurological disorders. New methodologies in structuring the treatment with sound, light, and vibration have also been developed and carried out by practitioners for behavior modification.

PISTA incorporates these techniques to create new neural pathways that will facilitate resolutions to emotional pains and overcome thoughts that trigger fear. The mind is calmed and trained to maintain clarity during confusing and painful situations wherein strong emotions are felt. With the guidance of licensed coached who are trained in the PISTA method, the mind is retrained for optimal functioning. A buddy system of support provides personal and continuous guidance as patients learn to manage daily encounters throughout their process of recovery.

All cases that were analyzed under this research initiative prove that PISTA Therapy is extremely productive and effective. Patients who have fluctuating symptoms were able to surmount their challenges. Their programs employ a process that involves close communication and weekly progress monitoring using online tools. Now, PISTA

Therapy is the method that equips individuals to live confident, well-managed lives.

History of Sound Therapy

The human body naturally responds to rhythm. The heart and lungs, along with a range of physiological processes, all move with a specific tempo. People walk and run with their own unique cadence as their brains process complex rhythms independently.

Sound therapy has been practiced by man for centuries. It is so power-ful that even structures were built with the intention of harnessing sound, including light and vibrations, to calibrate the mind, body, and spirit. Because sound travels about four times faster through water than it does through the air and because 70% of the human body con-sists of water, sound becomes a viable choice for natural therapy. Matching the frequencies of healthy resonance can provide stress re-lief, especially if an appropriate sound modality is introduced to release stress points and relax stiff muscles.

Ancient Forms of Sound Therapy

In the ancient times, sound and rhythm are essential elements of healing practices that relieved pain and restored health. Musical instruments, like the *yidaki* of the Aborigines of Australia, the *sistra* of the Egyptian priestesses, and the gong of the Tibetan monks, were all used for healing rituals.

The Greek father of music therapy, Pythagoras, taught the use of the flute and the lyre as primary healing instruments. With a monochord, which is a single-stringed musical instrument that uses a fixed weight to provide tension, Pythagoras was able to unravel the mysteries of musical intervals.

Structures were also instruments in curative processes many years ago. During the Greco-Roman period, healing temples were used in various modalities like incubation, which is a process wherein patients underwent dream sleep. The reverberating spaces of the healing temples and sanatoria enhanced the therapeutic aspects of musical instruments.

Other than harnessing sound for healing, people from years ago also used vibration to improve health conditions. In his book *Brain Wave Vibration*, Ilchi Lee describes how the shamans of the past used vibrations to create energy which stimulates healing powers from within an ailing individual. He referred to the shamans as brainwave doctors who possibly did not have the scientific knowledge of today's doctors but designed healing systems that incorporate vibrations. These methods often involved rigorously shaking the body or dancing to create energy until a deep state of trance was achieved.

Many cultures also believe in a system of energy channels, such as mana in Australia, *prana* in Indian Hindus, and *chi* in Asian cultures. These people build energy from vibrations simply by calming their minds, closing their eyes, and experiencing their being.

Today, there is an even more growing interest in sound for healing. Biofeedback and sound are widely used to reduce pain in a broad variety of clients and settings. Though the effectiveness of using sound in the realm of healing is still being challenged, the element of sound is now on the front line of modern neuroscience and alternative medicine. Various groups are engaging in a variety of biofeedback and sound therapy treatments using acoustics, percussions, Tibetan bowls, sound frequencies, and other musical tools to manage stress, pain, disorders, and some illnesses.

Much of these current practices in sound healing are based on the research of biophysicist Gerald Oster in the 1970s. Oster showed that the difference in sound that is created when playing a tone in one ear and another slightly different tone in the other ear causes the brain to create a third, internal tone called a binaural beat. His theory states that playing two slightly different tones syncs the brain waves in both hemispheres in a process called brain-wave entrainment (Carter & Russel, 1990).

Oster's paper, *Auditory Beats in the Brain*, sparked subsequent research on binaural beats and led to a science that helped address common human problems such as stress and anxiety, insomnia,

ADHD, learning difficulties, and behavioral problems, among others (Oster, 1973). This breakthrough also helped people achieve deeper meditation experiences, better focus and concentration, and higher spiritual awareness.

Contemporary Methods of Sound Healing

Now more popular and accepted in the mainstream, sound therapy or sound healing to others have two distinct areas of application— (1) sound for improving well-being and learning, and (2) sound for medical uses.

Sound helps relax people and put them in a better state of mind. Once tension is released, the immune system benefits. Sound is also applied to specific areas including pain control, neurodevelopmental remediation, relaxation and stress relief, meditation, sleep, accelerated learning, enhanced productivity, consciousness raising, and connecting to spirit.

There are numerous clinics across the world using Tomatis's research to stimulate the brain and nervous system. Learning disabilities in children, for example, are being addressed by sound using the technique introduced by Alfred Tomatis in which low frequencies are increasingly rolled off in classical music until only the high frequencies are left. Then all the frequencies are rolled back in until the full audio spectrum is again present. Using this technique over a few weeks proved to significantly aid in the reduction of learning disabilities (Wagner, 2015).

The more aggressive form of auditory-based healing, called sound surgery, applies highly precise tones or frequencies on specific organs inside the body. Doctors figured that a diseased organ is entrained into a healthy state of vibration by applying the correct frequency to it. In the same way, sound can also be used to massage and relax organs like the heart, so it could loosen up and move within its own sac. Another example is ultrasound, which has been used for years to break kidney stones or even plaque on the teeth.

The pioneering research by Nikola Tesla on frequency therapy at the end of the 19th century discovered the effects of electricity on patho-gen microorganisms like viruses, bacteria, parasites, and fungi found in the human body. The research was continued by doctors, like Royal Raymond Rife, Hulda Clark, Bob Beck, and others who followed Tesla's discovery that each organism emits its own frequency. They patented the first frequency generators that created frequencies capable of destroying pathogen microorganisms. Some of these generators include Rife's generator, Clark's The Zapper, and Beck's magnetic pulsar (Earth Clinic, 2016; Kehr, 2016).

These inventions were preceded by the research of William Lyman, Steven Kaali and associates from the Albert Einstein College of Medicine who discovered that the application of low-voltage direct currents can deactivate the HIV virus while keeping blood cells damage-free (Adachi, 2016).

Later, frequency therapy spread from the USA to Europe, especially to German-speaking countries where frequency therapy devices soon became registered as medical devices to be utilized by doctors, clinics, hospitals, and families all over Europe (Walker, P., 2015)

Other therapies use bilateral stimuli for healing. Bilateral stimulation, which is the movement from the right to the left eye, activates the left and right hemispheres of the brain to release emotional experiences that stay in the nervous system. This stimulation facilitates the removal of blockages in the neurophysiological framework where the mind and body are joined. Healing starts once the block is removed. According to studies, this psychotherapy technique is successful in relieving people suffering from emotional problems and is an effective method for healing post-traumatic stress disorder.

In his book *Food of the Gods*, Terence McKenna briefly challenges the healing capacity of vibrations by presenting the idea that vibrations, specifically vocal vibrations associated in human language clean the cerebrospinal fluid which, in turn, continuously bathes the brain to wash away chemical waste. According to McKenna, clean

cerebrospinal fluid results in a brain that has fewer toxins and is more capable of higher thought forms and deeper concentration.

Then there is also the concept of brain waves or bioelectricity which is the signal sent by the brain through the nervous system to initiate biological processes and muscle movement. According to biologist Bruce Lipton, these bioelectric signals create energetic information, which body cells use to interpret the environment. New discoveries on cells, specifically the cell membrane, have encouraged scientists like him to reconsider the Asian concept of *chi*. Studies revealed that the energy emitted by the brain is crucial to the overall health of the cells and the body.

PISTA Therapy: Working with Sound Through the Mind

One of the most successful methods that utilize sound and vibration for improving the quality of life today is Processing Inner Strength Towards Actualization (PISTA), an approach that helps individuals understand personal situations and rebuild their lives according to their own values and choices. PISTA Therapy uses different stimuli to regulate and optimize brain processes and consequently alleviate stress, relieve pain, and pacify fears. Harmful habits, improper behavior, and unhealthy thought patterns are also altered.

The PISTA method harnesses the power of the mind to teach a renewed understanding and acceptance of situations. The mind is trained to identify and correct unsafe thought patterns. Individuals can independently find life direction and attain greater psychological well-being in the process. Because this method strengthens one's capacity to have an accurate self-concept and higher self-esteem, individuals develop better relationships and are able to think clearly about their emotional hurdles.

Reprogramming the Mind

Part I discussed the immense power of the mind in controlling body processes, emotions, and decisions. Even the stored perceptions that the mind has formulated from old beliefs and environmental and social conditioning since childhood affect how individuals process and react to various daily events.

If not properly understood and managed, mind power could bring physical or psychological concerns. A mistaken belief may lead to wrong decision-making, and excessive, uncontrolled thinking could lead to sickness. PISTA Therapy saves individuals from these troubles by showing that the mind can be reprogrammed to work toward achieving personal goals and desired mental and physical states.

The placebo effect is one proof that the mind can be controlled. In 1996, scientists conducted a study of a new topical painkiller called trivaricaine (Montgomery & Kirsch, 1996). The group of students

who were commissioned to participate in the study was not told that the said medication contained only water, iodine, and thyme oil. None of these components have painkilling qualities.

Each student was asked to apply trivaricaine on the index finger and to leave the other index finger medication free. The fingers with and without medication were later pinched. Then the students were asked to assess the pain they felt on both fingers. They reported significantly less pain on the finger applied to the pseudo-medicine.

This study illustrated the placebo effect in which a person's expectation and belief could turn out desired results. The students expected trivaricaine to relieve pain and true enough, they experienced less pain as they had imagined. This is called the placebo effect.

Another illustration of the mind's power that was also discussed in Part I is the effect of cognitive biases and old beliefs on human behav-ior and decisions. Most of these beliefs and paradigms have been instilled in the mind since childhood through the family, society, and various life-changing experiences. Some may have registered bad memories, or worse, have acquired trauma in such a way that breaking existing perceptions is already a challenge. Moreover, these paradigms elicit strong emotions and big fears that keep individuals from discovering opportunities and realizing the goals they so want to achieve.

People must know that they can replace old limiting beliefs with new, constructive thought models. Individuals must learn to break away from these in order to open the doors to a free and enjoyable life. The way to do this is to take in new ideas and thoughts that are helpful and aligned with what one desires to be. These thoughts need to work in harmony with the surroundings.

The practice of PISTA Therapy helps do just this. New neural pathways leading to new paradigms are built and inspire them to reach their goals and achieve their fullest potential. Individuals guided by PISTA will be able to accomplish more of life now and in the future.

The PISTA Stimuli and Tools

One of the key factors to the success of PISTA Therapy is the stimuli it uses to enhance mental processes and sharpen the mind. These stimuli optimize brain functioning and create favorable mental states that help in the daily management of emotions and the treatment of several disorders in a safe and non-invasive way.

The different stimuli used in the PISTA method include Transcranial Magnetic Stimulation, the PISTA device, rhythm, play, and art. These incite specific regions of the brain, which are responsible for the condition experienced by the client. Stimulation fires up these regions to send signals to the nervous system. This rippling effect creates a relaxed state of mind and paves the way for positive psychological, physical, and emotional changes.

Rhythm and Music

Rhythm exists everywhere, even in the brain where conscious and unconscious processes are carried out in complex patterns. The more people listen to music and complex rhythms, the more efficient brain processes become. At some point, rhythm recognition and processing become autonomous so that the brain more freely and efficiently devotes effort to important, complex and conscious thoughts.

Rhythm influences human functions and living, including physical movement, functional neurobiology, and interpersonal communication. The human perception of rhythm gets cues from components like beats or rhythm structure, vocal instruments, tuning features, body movements, and words or spoken lyrics. Each component helps convey messages based on the intention of an individual and affects listeners in the physical, emotional, intellectual, and spiritual aspects.

PISTA modalities also employ rhythm with a biological stimulus like walking. When the legs are moved alternately, the left and right synchronization is created, stimulating the both hemispheres of the brain. Similarly, tapping on both legs alternately has the same effect.

Magnetic Pulses Target Areas of the Brain

Transcranial Magnetic Stimulation (TMS), a procedure that uses magnetic field pulses to influence brain activity, is another tool used in PISTA Therapy. This technology emerged when Faraday discovered the principle of mutual induction, which states that electric energy converts to magnetic fields and magnetic fields convert to electric energy. This led to the use of electromagnetic coils to send vibrations to the brain. TMS is called rTMS when it is repetitive and when magnetic stimulation is delivered at regular intervals.

The first effective TMS device was designed in the mid-1980s as a neurodiagnostic tool. This allowed researchers to induce movement in the finger and foot by placing the TMS coil over a specific region of the brain. It was also used to study nerve fibers and to create a functional map of the brain. The procedure is non-invasive and painless and allowed early researchers to utilize the TMS devices to map and study regions of the brain involved in memory, vision, and muscle control. In 2002, TMS Therapy was approved by Health Canada for clinical delivery in Canada.

More recently, rTMS has been used to investigate sensory and cognitive aspects of cortical processing. It is valued for its unique capacity to selectively increase or decrease the activity of neurons in specific regions of the brain. PISTA uses rTMS to stimulate areas of the brain that process stress, pain, memory loss, and fear to alleviate depressing feelings and improve such conditions.

The PISTA Device

According to various studies, the PISTA device is the stimulus that brings the most positive results. This tool is intrinsic to PISTA Therapy and is the product of 4 decades of in-depth research by the PISTA research team of experts. It incorporates binaural beats and allows individuals to reprogram their minds to help alleviate emotional, psychological, and physiological pain and stress.

Discovered by Heinrich Wilhelm Dove in 1839, a binaural beat is the third beat or signal that is detected by the brain when two tones of different frequencies are presented to the left and right ears. This discovery was followed by Gerald Oster's extensive research on binaural beats, which led to the idea that when the brain starts to follow or resonate with this third beat, the effect called the Frequency Following Response is created. Oster's research paved the way for more developments in using auditory simulation to enhance brain functioning.

PISTA employed Oster's research into the PISTA device to generate two tones, which the brain combines and alters into a single tone in the auditory process called brain entrainment. The frequency of this single tone may vary according to the state an individual wants his or her brain to achieve. For example, if a patient is hooked to an Electroencephalograph (EEG) during deep sleep, the EEG graph would display a frequency pattern in conformity with a brain in the act of sleep (delta wave). Since this pattern is conducive to the state of sleep, the brain of a patient suffering from insomnia will absorb this frequency. Unconstructive attributes are eliminated and a gateway to undiscovered depths of the mind is opened.

Vibration for PISTA

As it alters frequencies from the binaural beats created by the PISTA device, the brain becomes more susceptible to change and positive reinforcement. When this happens, patients can dramatically change the way they think, eliminate unwanted harmful thought patterns, and welcome positive affirmations at the peak of brain arousal.

Compounded with strong willpower, the PISTA device effectively removes unwanted characteristics and develops or enhances positive ones. It achieves a heightened cognitive awareness and greater memory and recall. Relief is immediately experienced.

Tina Huang and Christine Charyton made a study of 20 previous works on the psychological effects of brain entrainment. They asserted that the use of sound stimulation is an effective therapeutic tool

(Huang & Charyton, 2008). The study specifically concluded that those suffering from conditions, such as stress, pain, headaches and migraines, PMS, and other problems that interfere with daily cognitive function, immediately benefit from the use of binaural beats. Huang's study and other previous studies also highlighted that the effects of binaural beats are lasting and that the behavioral changes take on habitual manifestation.

The PISTA Device also uses left and right vibration. According to the Law of Vibration, everything in the universe, including people, can be reduced to simple energy. Everything in our surroundings is made up of molecules that are constantly vibrating at various levels and speed. And if the vibration is within one's frequency range, the source of energy can be heard or seen.

In this vibrational universe, each individual has a vibrational footprint and sends out vibrating signals to the surroundings and the universe. The vibrations that are easiest to identify are felt in emotions like anger, sadness, and joy. Even an unobservant person can identify signals.

The content of these vibrational signals emanates from thoughts and feelings. Anyone whose vibration is aligned with another's vibrational frequency responds accordingly. The jolly person attracts those who respond to jolliness and whiners gel with others bearing similar gripes. This natural appeal to commonality is described by the Law of Attraction in which things or people within the same vibrational fre-quency have the tendency to react or gravitate toward each other.

Aligning the Vibrations of the Subconscious with Goals

Scientists believe that people can make use of vibration signals to stay aligned with their bodies, nature, other people, and even goals. Vibrations can likewise be a vessel for harmony, healing, and self-improvement because all people are connected through this universal field that links all thoughts effortlessly.

When a person aligns the focus of his or her attention to something, a cycle of an increased perception of the thing is started. Learning, which is a vibrational interaction, begins. Even the mere act of looking at something a person likes is a vibrational connection. This means that people have existing vibrational relationships with everything, everyone, and everything around them. It is just a matter of accepting or rejecting the vibrations that are constantly around them. Rejection worsens a miserable feeling and acceptance makes one feel better.

This concept of vibration and attraction means that a person can make anything he or she desires gravitate toward him or her with the use of correct signals. Realizing one's desires, therefore, is achieved by setting up an attraction for it. People need to have the same frequency as their goals. To do this, one must make sure thoughts within his or her subconscious mind are geared toward target objectives. Else, it would be difficult to reach the desired goal.

On the other hand, if one's subconscious thoughts, emotions, and actions vibrate the correct signal, he or she is meant to realize target goals. This means that anyone can somehow control attraction to whatever he or she vibrates to and whatever his or her thoughts resonate. If the subconscious mind is programmed to vibrate with the universe, especially with the help the PISTA stimuli, any dream can be achieved simply by focusing all thoughts on it.

The PISTA Entry Point

The PISTA method of therapy allows clients to follow a self-directed program that facilitates the discovery of inner strength, and the assessment and understanding of challenges. It teaches individuals how to integrate the body, mind, and spirit to be resilient over life's difficulties.

The Standard Metaphor, one of the PISTA modalities, uses an entry point which is a thought or an image to which the client focuses on throughout the session. The entry point can also be a scenario or an experience in the past, which an individual continues to feel strongly

about. The coach helps the client in identifying this image and later in applying the stimulus that will stimulate the brain. The entry point may change as the sessions continue, depending on the progress of the user.

There are 13 sets for every PISTA session using the Standard Metaphor modality. All emotions, memories, physical sensations, and thoughts experienced are recorded after each set. These notes are analyzed at the end of the session with the guidance of the coach who studies the physical, mental, or emotional states experienced from the beginning up to the end of the session. The coach analyzes with an open mind and without biases and premature judgments.

Regular practice of this process yields positive changes in the body. As a result, the client starts to feel comfort and relief from a demanding situation. He or she learns to accept greater responsibility for his or her feelings and behaviors. Research shows that the benefits of PISTA Therapy may be experienced almost immediately during the activity. There are cases where decreased anxiety and stress levels were reported after three sessions. Some clients attest that the benefits continue to be felt even for months after their therapy.

The Relationship between the PISTA User and Coach

There are four vital elements in PISTA Therapy – the stimulus, entry point, user, and coach. The stimulus and entry point have been discussed. On the other hand, the user and the coach, including the relationship between the two, are the other important factors that constitute a successful PISTA session. The user is the patient experiencing physical, psychological, or emotional pain or discomfort, and the coach guides the user throughout the program.

A sound relationship between the coach and the user is imperative to the PISTA method. To facilitate this, PISTA creates an environment and context wherein the user feels safe and comfortable for self-assessment. The unequal power and relationship between the coach

and the user that is common to most psychodynamic therapies are removed to promote dialogue without power domination.

The PISTA coach is trained to respect the user's ways of developing his or her own learning program and knows how to listen attentively without interfering in the user's self-discovery. During the session, the coach guides the user through a self-questioning technique that approaches complex issues like anxiety, stress, fear, and childhood problems. All PISTA coaches are trained to be objective when guiding users in reflection, discovering resolutions, and recording learned information.

The alliance that develops between the coach and the user is also a key contributor to a successful PISTA program and is the vehicle through which change occurs. PISTA puts the most emphasis on the coach-user relationship, which should be non-imposing and without expectations or set goals. The first step is for the user to establish trust of self. This emerges during the first session and develops with the coach-user relationship in the passage of time. The user's condition determines the duration of his or her recovery process. Self-confidence and trust may take more time if the user's condition is severe.

In contrast with brief psychodynamic therapy, the relationship between the user and the coach must be established as soon as possible in the program. The therapists conducting this type of PISTA therapy must also be able to establish a trusting relationship with their clients in a short time.

Comfort in Private and Reliable Support

When people agree to get into individual therapy or group support, they normally carry with them a fear of sharing their lives and later being misjudged by doing so. The discomfort brought by this fear is magnified by the thought that others will discover their burdens and mistakes.

In group therapies, PISTA users are given a chance to be open about their emotions because they find comfort in the PISTA environment where everyone is free from judgment. Each user's fears are safe in the group who share similar concerns. All participants find comfort in openness without being judged.

PISTA Therapy gives importance to privacy because it believes in an individual's choice to keep emotions, fears and learning privately.
This allows individuals to judge actions, mistakes, and memories based on their own rules and untouched by the subjective rules of the society. What matters is the thing that is right for the individual. This personal judgment helps users understand the intention that prompted them to do past actions. They find their inner goodness and make peace with themselves. Individuals find self-acceptance and start loving themselves for who they are.

PISTA users across the globe and in different time zones also have access to round-the-clock guidance and support. PISTA coaches are trained to deliver the appropriate PISTA modality of treatment for each symptom and are supervised by a professional team of medical doctors, psychologists, and other medical practitioners from multiple fields.

Unlike the usual visits to doctors, there is no need for users to wait in line. A set of online tools deliver support anytime and anywhere users need assistance. Users may get support personally or online through their device.

Self-actualization and Insight

The PISTA Therapy is self-administered. It enables PISTA users to independently develop the necessary skills for various conditions and tasks that come their way. In this self-directed learning, users take responsibility for their own progress. They set the targets and goals of their treatment independently. They are motivated and empowered because they follow a self-help program wherein they can make changes anytime and without the interference of others.

The PISTA method makes use of the concept of self-actualization, a person-centered therapy that believes in the tendency of all human beings to move forward, grow, and reach their fullest potential. When a person moves towards self-actualization, he or she becomes pro-social and shows concern for others. The person behaves in honest, dependable, and constructive ways.

Self-actualization in PISTA therapy uncovers emotions and helps users take control of their lives by evaluating past events that affect memory and the structure of the mind. With support, users can achieve desired results every day. They develop a constructive attitude towards relating to others and reaching the emotional stability needed to manage the events their lives.

The concept of insight is another important factor of the PISTA method. Insight is a kind of self-realization or self-knowledge born out of the established emotional connections from past experiences. It influences present perceptions and behavior and recognizes feelings or motivations that have been repressed. Insight can be experienced as a sudden flash of understanding and may be achieved from gradual acquisition of self-knowledge.

For example, a depressed and angry user who ends up drinking alcohol may come to realize that his feelings towards his father are triggered by an emotionally abusive supervisor at work. Eventually, he unlocks new options for change that include learning to sort his reaction at work from his feelings about his father. This process could mean working through emotions and fears, which he may not have been previously aware of, and actively choosing alternative behaviors to drinking whenever he feels bad. Later, he learns to accept greater responsibility for his feelings and behaviors.

Music, Emotions, and PISTA

Music is like a stone that creates ripples when thrown into a body of water. It moves the soul and touches delicate areas of the heart. While many individuals could attest to music serving their emotions

in various ways, many studies have been trying to understand if and how music affects emotions.

How does music affect emotions? According to Meyer, musical elements, like a change in the melodic rhyme or rhythm, create expectations about the future development of the music (Meyer, 1956). How the listener expects the musical events to develop is a determinant for the experience of musical emotions. Music directly or indirectly rouses expectations that may or may not bring satisfaction to the listener. The more tension is built, the greater the emotional release upon resolution. The primary dimension of which emotion is experienced depends on how tension is built and released, both within the music and in the listener. The more elaborate the buildup of tension is to a certain climax, the more intense emotions will be experienced. When the resolution is achieved, relaxation follows.

An important implication of Meyer's theory is that any conscious insight in this process reduces the emotional effect of music. This means that a listener without theoretical knowledge in music has a predominant affective response towards music, whereas a trained listener reacts mostly cognitively while listening to music (Jansma & DeVries, 1995).

In PISTA Music Therapy, on the other hand, music is the tool that triggers current and past emotions for a better understanding of events and situations. Resolution is achieved regardless of the experience of insight that Meyer pointed out. Music helps the individual to reach to the self and to relive past hurts and pain and understand his or her emotions in the process.

Hevner is one of the first researchers who systematically studied which musical parameters are related to the experience of emotion. She used original and adapted piano pieces in describing emotions experienced when listening to music (Hevner, 1937).

In the adapted version, Hevner manipulated one musical element—such as the mode (major or minor), harmony (simple-complex),

rhythm (steady-fluent), tempo (fast-slow), or the melody line (increasing-decreasing)—and held other musical parameters as constant as possible. After playing the piece, she asked the subjects to indicate on the Hevner's adjective circle, which emotion verb best described the emotional content of the piece. Tempo and mode had the strongest impact on the listeners in describing the experienced emotion in the music. Piano music played fast in major was described as cheerful and, in contrast, the slow piece in minor as dream-like and sensitive (Vink, 2009).

Similarly, PISTA Therapy used this strategy to associate events with the memory of patients experiencing fear. Using binaural beats with music during therapy helped in the thinking process. Removing the binaural beats, on the other hand, associated the past and present memory to the specific event. By modifying music with and without binaural beats, PISTA patients are able to give detailed descriptions of past events and to get into the exact emotional state during that specif-ic event.

Theories of Music and Emotions

Music researchers studying cognitive aspects and brain activity state that it is still early to describe precisely how a healthy person physically and psychologically reacts to music. In fact, Rueger (2011) pointed out that the lack of this knowledge also makes it too early to state that music is indeed therapeutic.

The study of the relationship between music therapy and music psychology is a relatively new and undeveloped field. It is only since recent dates that the relation between emotion and music is researched more thoroughly. Sloboda and Juslin stated that after a period of neglect due to methodological problems, the topic of music and emotion is again at the forefront of music psychology (Sloboda & Juslin, 2001). They illustrated this with the sudden increase in music and emotion papers at various conferences.

A comparable emotion theory is from Berlyne (1971) who hypothesized that people consider factors like complexity, familiarity, and

novelty when listening to music. The pleasure that music gives depends on the degree of familiarity—that is, pleasure is low when the music is entirely new to the listener. When represented in a graph, this relationship is a reversed U-curve, wherein pleasure increases as the familiarity increases and decreases again once the listener becomes very familiar with the music.

Like Mandler, Berlyne stated that the experience of arousal is an important factor in the experience of emotion and that it is the listener's intention to experience arousal in the course of listening to music. The ability to maintain an individual's desired level of arousal determines musical preference. More arousal is experienced as the music gets more complex. The listener seeks activation, but only to a certain extent. When the maximum arousal is achieved he or she will stop and avoid further activation.

Listeners with more elaborate music knowledge structures experience less arousal when listening to complex music. This is because, according to Berlyne and Mandler, a trained listener has a higher threshold for experiencing arousal and thus holds a greater preference for complex music than a naive listener. Fischer demonstrated that subjects who had taken amphetamine, a drug which causes arousal, preferred more complex music (Fischer, 1981).

There are many experiments that support Berlyne's ideas. The study by Weinberger (1998) showed that subjects prefer melodies that use a moderate variety of pitches and which have intermediate levels of complexity. Weinberger valued Berlyne's theory that music therapy may explain a common difficulty complicating research in this area—that is, why the same music can produce different emotions from the same person at different times. According to Weinberger, the findings may help pursue direct investigations of the brain substrates of music and emotion. A basic understanding of these relationships may also benefit therapeutic uses of music in the future.

The theories described above are often referred to in describing the emotional impact of music. In general, it is stated that Meyer's theory

is comprehensive but problematic to test empirically, and there are no research studies known which have directly tested Meyer's assumptions in relation to musical emotions. Meyer himself acknowledged this problem by doubting the possibilities to test the existence of musical emotions in a scientifically controlled manner. Sloboda stated that many researchers have the tendency to come up with their own theorizing about the effect of music, with the result that feedback for the development of a general theoretical framework explaining the effects is lacking. This can also be seen in music therapy research. Many music therapists have studied the efficacy of their practice. The research studies are often very different in therapeutic orientation and are difficult to compare related to client populations.

Musical Experience and Expression

Although music therapy shows that listener preferences range from heavy metal to classical music, only classical music is more often used in most research studies made on music psychology. In the context where musical emotions with children are studied, classical music is also mostly used as test material. Because only classical music is used in the studies, the results are, therefore, small. Nevertheless, researchers prefer classical music because it is commonly unaccompanied by song lyrics unlike that of the popular music repertoire.

PISTA Music Therapy uses music to which the patient can relate to. The patient is made to choose pieces of music from different life stages, like during childhood, teenage years, courtship, and other stages. PISTA allows the free choice of music or song, with or without lyrics. The words help discover the changes in their own connectivity with the evoked emotional state versus the present state. Also, the lyrics may be used as a metaphor for a new entry point.

This process facilitates the patient's self-learning and is supplementary to the PISTA modality in going deeper into the emotive state, revisiting the past, and relating the present emotion to the same piece of music. With the help of the coach, the patient uses this process to build a better understanding of the past events.

Emotion and Physiological Changes

The relation between music and physical changes in the patients is often discussed in the music therapy literature. Smeijsters formulated the analogues process model, which describes how musical characteristics can be perceived in a patient's pathology and vice versa (Smeijsters et.al, 1995). Many research studies have tried to establish the relationship between musical rhythm and physical rhythm, as suggested by the idea of Pythagoras that musical vibrations can bring about healing physical changes.

Studies show that the average rate of beats in music is almost the same as the average heartbeat, which is 72 to 80 beats per minute. The precise relationship between musical rhythm and heartbeat is still unclear, but there are studies that show stimulating music increases the heart rate while sedative music reduces the heart rate (Vink, 2009).

The challenge is how to measure heart rate against the change in emotions. Harrer compared the heart rate of the famous conductor Herbert von Karajan while he was directing Leonora Overture No.3 to his heart rate while flying a sports aircraft. The conductor's heart rate peaked at 115 beats per minute during flight and reached a maximum of 150 beats per minute while he was conducting (Harrer, 1977).

The maximum increase of pulse frequency, telemetrically recorded from Herbert von Karajan while conducting the Leonora Overture No.3, was obtained during passages that had the greatest emotional impact on the conductor. These were the same passages that he singled out in subsequent conversations as parts that he found most profoundly touching. During these moments, his pulse rate increased to twice the level of the initial value. When the tape was played back to the conductor and his pulse was again measured, the same peaks were found. However, the changes in the heart rates were greater while he was conducting.

Once the essential part of the past is revisited during PISTA Music Therapy, and the emotions have resurfaced, the patient's heartbeat also increases. Sometimes, if a patient experienced deep sadness, he or she would report feeling confused, the PISTA coach may suggest using this feeling as an entry point.

Changes in breathing are also perceived to result from intense emotional experiences. The frequency of breathing and heart rate are co-dependent to some extent as the muscle activity during active breathing also increases the heart rate. This activity is seen during hyperventilation, for example (Frijda, 1988). Ries (1969) found clear correlations between the respiration amplitude and the emotional response towards music. He found out that a subject's breathing becomes deeper as his or her affective response or liking to music increases.

In PISTA Therapy, patients report tightness felt in the chest in some parts of a musical piece. The coach records this feeling, observes changes in the heart rate and breathing, and finds observable correlations between the intensity of the emotion towards the music played and how the patient presents his or her emotions. The music that affected the patient may be played back to gather more observations or concrete descriptions of the relived emotion or event.

Research studies involving respiration measurement are often not easy to interpret because the frequency or amplitude is the only characteristic of respiration that is measured. Although breathing increases and becomes deeper when listening to affective music, other factors that affect breathing, like smoking and sickness, are not considered (Harrer, 1977).

Music Solicits a Variety of Responses

Since listeners have a variety of responses to music, Meyer stated that it would be interesting to understand how individuals experience emotions directly from musical characteristics or through musical associations (Meyer, 1956). He also assumed that it is difficult to experimentally relate the effect of music to the emotions stirred

within the listener. Add to this is the tendency of people to polarize opinions on certain emotion traits regardless of the object that triggers the emotion. For this, researchers in music psychology occasionally use the free response technique in the context of music appraisal to freely give room to the variety of emotional responses.

Sloboda asked adults to look back to the first ten years of their lives and recall memories that involved music in any way (Sloboda, 1992). It was not asked specifically whether there was an emotional association with the music, just what musical experiences one recalled from childhood. From the free descriptions, it was determined that emotion was clearly a classifying characteristic in 39% of the cases. The emotion was a principal factor in the free descriptions of music experiences in adults.

Sloboda also got 67 regular music listeners to describe in their own words the nature of their most valued emotional experience to music. Two dominant themes emerged in the spontaneous descriptions—people tend to use music as a change agent to alter their mood, and people reported that music was used as a method of catharsis to promote the intensification or release of already existent emotions. The theme of music as a change agent was gathered through statements like “Music relaxes me when I am tense and anxious,” and “Music motivates and inspires me to be a better person.” On the other hand, the theme of music as a method of catharsis was construed from statements like “Music releases emotions” and “Music helps me discover what I am actually feeling.” Sloboda stated that the common factor among all the examples was that music did not create emotion, but rather it allowed a person access to the experience of emotions that were already on the agenda.

PISTA Music Therapy allows the patient to choose the music for the session and to give his or her responses freely. These responses could describe the emotions experienced or associated with the music during childhood. The client or the coach documents these responses for study and to discover an understanding that would help the client resolve his or her condition.

PISTA discovered that patients have a broader music repertoire in their adolescent years. This makes it difficult for them to pick just one song, so they are asked to select a few pieces of music from their adolescent stage. The music should be relevant to their memory and experiences. In this case, these selected sections from musical pieces are played during the PISTA session. The client identifies the parts of the song that have more impact or the lyrics that are more relevant to his or her memory. This method creates an environment that enables the patient to use a song that has more meaning to the client's associative memory and emotion.

The advantage of the open-ended studies by Sloboda, among others, is that these studies made it possible to determine if one refers to emotion when describing musical experiences and emotion experienced as a direct response to music. On the contrary, these retrospective studies also question the reliability of these childhood experiences. It is possible to presume that emotional descriptions will be given regardless of the childhood memory. If someone were to describe riding a bicycle in childhood years, for instance, affective responses will be observed and will also be evaluated against the stimuli.

The studies also show that researching emotional experiences directly related to music is complex. On the other hand, these studies also clarify that association processes are present, although they are not the focus of any of the studies. Many music therapy studies involved the effects of Guided Imagery and Music, and these associated processes have been well demonstrated and documented.

Free Selection and Individual Preferences

The Guided Imagery and Music (GIM), developed by Helen Bonny, is a method based on the assumption that clients can select the most appropriate music for their healing and specific themes such as positive affect (Bonny, 1986). The client listens to the selected music in a relaxed state and shares his or her experiences with the therapist.

Grock wrote extensively on the application of GIM, also in reference to a variety of client populations (Grocke, 1999). According to Bonny (1986), the research on music assisted imagery process demonstrates that personal music preferences are not usually applicable to healing when used in a therapeutic setting. Others debated that music should be selected carefully in line with personal preferences.

The study of Gerdner compared listening to standard relaxation music and listening to individualized music and showed its effect on reducing agitation among elderly with dementia (Gerdner, 2000). Both types of interventions were clearly more effective compared to baseline measurements. It was observed that carefully selected music based on the person's preference and personal background had more positive results than standard relaxation music. This could lead to the hypothesis that, with different associations, emotions can be invoked when music meets the collectively shared connotations presented in the images.

The PISTA process allows the patient to independently confirm and differentiate between concrete events and what is unreal. This confirmation arises while the patient listens to music during the therapy. PISTA therapy sessions show, however, that patients displayed more emotions when binaural beats were used as stimuli along with guided imagery even without the intervention of the facilitator.

With the use of the PISTA Device, PISTA Music Therapy allows sound to surface events and situations that may have triggered the emotions even as far back as childhood. Coaches facilitate learning by giving guidance and analysis of emotions. When sensations specific to a significant event in the patient's life are invoked and, a new meaning and a renewed understanding of situations are created by the patient.

In PISTA Therapy, this happens as the patient listens to music and associates it with the emotions that he or she is processing. All thoughts, emotions, and events that emerged during this time are rec-

orded and analyzed. Complex emotions that may be preventing the patient from living a normal life are identified and dealt with.

Challenges and Limitations of PISTA Therapy

Adherence to the instructions and method is vital to measuring the success and outcomes of the PISTA Therapy. Non-adherence influences the outcomes of interest. In mind-body medicine, there are two intervention aspects that can be measured for adherence: class or instruction and home practice.

In a class setup, adherence to instruction can be evaluated through attendance records. These data, however, are rarely reported. In a PISTA study of 30 participants, for example, assigned class hours were noted in the report instead of actual participant attendance.

On home practice, on the other hand, wherein the participants engage themselves in the PISTA Therapy at home, adherence to instruction is usually assessed through a self-made report. Similarly, this is rarely accounted for. Participants can also easily alter the document. For this reason, the self-report from home practice must be carefully interpreted. There is currently no objective measure that would validate its accuracy.

This observed inability to measure and assess objective adherence is a chief issue. There will always be uncertainty in the results from home practice because of the unknown parameter of how much the PISTA users practice at home.

One of the obstacles in learning which educators encounter with learners is lack of motivation. Students expect to see results materialize immediately or in a short time frame and this has made teaching harder. The PISTA programs are designed in such a way that the user will see the immediate use of what he or she learns in every session. The immediate results motivate him or her to continue therapy. PISTA uses this principle in devising the time frame for the user to achieve the desired results.

Objective Adherence and Measurement

Objective methods to measure home practice adherence are being identified. The next step in PISTA research is to explore various methods that assess adherence objectively. PISTA conducted a study at Nova Palm Foundation, which attempted to independently measure adherence to the home practice of PISTA. This method was used in a mind-body clinical trial and may be replicated elsewhere.

PISTA's objective adherence measurement program was developed for a randomized control trial examining the mechanisms of mindfulness in 30 combat veterans with post-traumatic stress disorder. The participants were randomly divided into four groups namely mindfulness meditation, slow breathing, mindfulness meditation and slow breathing, and a book on tape. They were required to have one laboratory training onsite per week for 6 weeks and to practice PISTA Therapy at home for 20 minutes each day.

The activity done in the laboratory equipped them for practice and self-administration at home. Onsite, each participant performed the PISTA activity and was given verbal instructions and a brochure as a guide in choosing the entry point. The groups were asked to practice PISTA according to their group themes while listening to the PISTA audio recording.

Limitations were encountered as the participants monitored PISTA practice at home with an iPod system. They were unable to play the appropriate track for each day even if they were trained how to use the device. Moreover, the iPod only recorded the beginning time the track was last played. Data was lost if each track was played more than once. Lastly, some participants did not turn off the iPod after use, so the track played repeatedly and resulted in excessive play counts. These results highlighted the need to ensure the accuracy of the tracking system.

A software application was developed for use in an iPod Touch to address these limitations and to more accurately track home practice adherence. The application is launched from an icon on the iPod device to initiate the 20-minute track. Participants of the succeeding

studies used the application, and each of them was given a participant ID. They used the application every time they practiced the PISTA method and were able to put the track on pause whenever they needed to.

The new application solved many of the previously identified issues. All user-performed actions were recorded by the application even as more entry points were given at each training visit. Recorded data for each participant was imported into an excel file and included a daily summary of feelings and other statistics for study. Recorded results were collected and submitted easily and were viewed via email. There was a reported ease of use and the participants adhered to the activity. The average home practice time was objectively reported as 40 minutes over 6 weeks.

Non-Resistance and Follow Through

The success of the PISTA therapy relies on the patient's readiness to undergo therapy and acceptance of the method. Because the PISTA approach is essentially a self-help technique, the patient must agree with the method and understand how it works before proceeding with the program. He or she must be motivated to attend the sessions, commitment to finish the program and follow through, and energy to devote the self to the procedure.

Starting the PISTA program is also a challenge. Studies show that the motivation and commitment of PISTA users are not very strong in the beginning. They have the tendency to discontinue the program despite encouragement. This is where the guidance of a coach is very crucial. The coach helps PISTA users stick to the program and follow through until these patients have slowly integrated the PISTA method with their daily activities.

Although designed as a self-help program, applying PISTA Therapy to some behavioral problems, like fear of managing social situations, achieves better results when done in a small group setting. In this set-up, the group coach or facilitator keeps track of each individual's

progress and manages the ongoing group work in order to reap good results.

When applied to depression management, PISTA Therapy is successful in conditions that are difficult for one-on-one sessions to manage. Group work, in this case, achieves better results.

Self-management is most effective in alleviating pain or managing terminal illnesses. PISTA cases showed patients who have tried other types of therapies but failed in achieving their desired results. They were more motivated and willing to work on their conditions with PISTA, which allowed them to take charge of their emotions and pain and to improve their conditions.

PISTA for Long-Term Treatments

PISTA studies that reviewed the first month of therapy showed that individuals who have used PISTA Therapy for more than one month have better chances of continuing their treatments. Users were given different entry points that further developed cognition and self-awareness. They were asked to use different modalities that suit them in various situations. Using PISTA, they learned how problems can be surmounted.

PISTA studies also showed that those who continue using PISTA therapy for 5 to 25 years engage in the program extensively have friends of families who practice the PISTA method as well. Children who use PISTA with the assistance from their parents also have high success rates because their parents also benefit from the program.

On the other hand, PISTA success rates are lower for those on psychiatric medication because many of them choose to continue with medication for daily support.

Part III: Resiliency Over Challenges-- The Applications of the PISTA Method

Challenges in life are normal. People encounter one or more issues, sometimes repeatedly, over the course of their lives. They spend a lot of energy resolving these issues and some suffer great stress, get sick, or develop shaky relationships as a result of these trying situations.

What most people do not know is that life challenges are usually rooted in deep, unexpressed fears that originate from childhood experiences. These concerns are also products of harmful messages that were repeatedly communicated by parents or other people and beliefs that may have been formed in the mind after a traumatic experience.

The truth is, depending on one's perspective, core life challenges either cause a variety of problems or open up many opportunities for transformation. Choosing to look at a life challenge as an opportunity could be the start of transforming one's fear into a learning tool that leads to a better life.

Life challenges arise or recur because of the lack of acceptance of some truths and a deep feeling of being disconnected with the self or others. Once the root of one's fear has been identified and the person has chosen a course of dealing with it, transformation occurs and the fear disappears. The individual feels alive again and more connected with himself or herself and the surroundings. If a person is constantly aware of his or her power to change things starting from within, he or she learns to develop balance and strength in life and becomes a catalyst that could help bring constructive change in the world.

The Emotion Called Fear

Fear is an unpleasant emotional state caused by the anticipation of an unwelcome event or situation that will bring danger, pain, or harm either physically or emotionally. It is a natural reaction of humans protecting themselves from perceived threats. As Witte and Allen cit-

ed, fear is a negative valence emotion accompanied by a high level of arousal (Witte & Allen, 2000).

According to Begley, the brain's fear circuitry is more powerful than the brain's reasoning faculties (Begley, 2007). This makes fear more powerful than reason. Human fear is so strong that fear appeals are commonly used as a motive to prod people into specific actions. It is this commanding influence of fear that led advertisers and marketers to leverage fear appeals in delivering target results in a range of needs and situations.

Humans have a primary instinct to preserve the self at the perception of threat. This is where fear becomes valuable because it protects people from harm and teaches them to prepare for unwanted circumstances. It is essential to keep individuals feel safe and secure. According to Kaylene Williams, an understanding of death and an instinctive drive for self-preservation provokes great terror. Because the realization and awareness of human mortality is terrifying, individuals naturally safeguard themselves from the uncertainties of fear (Williams, 2013).

Survival Mode

A basic survival mechanism, fear tells the body to respond to danger with a fight or flight response. It prepares people to react to danger. Once the brain senses a potential danger, the body releases hormones that slow or shut down functions that are not needed for survival, like the digestive system, and sharpen functions for survival, like eyesight. The heart rate increases and blood flows to muscles for faster movement in a case of fight or flight response. The body also sends more hormones to the brain to help focus on the impending danger. The brain processes this information and stores it in the memory. Once fear is triggered, the brain creates more rational processing paths and reacts immediately to these signals. This over-reactive state makes the brain perceive events unconstructively and remembers these events in such way. When in this overactive state, the brain perceives events as harmful and recalls them in an unconstructive way.

To Mind and Mend

The brain stores danger details—like sights, sounds, odors, time of day, and weather, among others—so the bad memories are likely to be strong however fragmented these may be. Eventually, the sights, sounds, and other contextual details of the memory or event trigger fear and may scare even without consciously knowing why it creates fear. These signs become associated with danger and threat.

Fear Appeals Work

Fear appeals are persuasion tools built upon the powerful human feeling of fear, and they rely on threats to an individual's well-being in order to motivate a person towards action. Kim Witte (1992, 1994) defined fear appeals as "persuasive messages that arouse fear by depicting a personally relevant and significant threat, followed by a description of feasible recommendations for deterring the threat" (Gore et, al, 1998).

There are three main concepts in a fear appeal, namely: fear, threat, and perceived efficacy. Fear is a sensation usually accompanied by heightened physiological provocation. The threat is the external stimulus that creates a supposed message of an impending peril and a feeling of being susceptible to some wretched situation or outcome. Lastly, perceived efficacy is a person's belief that message recommendations can be applied and will successfully reduce the described threat (Gore et al., 1998).

For a fear appeal to be effective, Witte and Allen asserted that the message needs to communicate a meaningful threat or an important problem and to present direct actions that will address the conveyed message (Witte & Allen, 2000). The individual should feel that there is a way to stop the threat and that he or she can perform that action (Eckart, 2011). It is also important that the message is clear through evoked fear, perceived threat, and valued perception; that there is a productive attitude towards the message; and that there is an intention to accept it (Cauberghe et al., 2009).

Too Much Fear is Unhealthy

Fear is good because it helps in survival. However, living in constant fear weakens the immune system and can lead to cardiovascular damage, gastrointestinal problems, like ulcers and irritable bowel syndrome, and decreased fertility. Fear can impair the formation of long-term memories and cause damage to certain parts of the brain, such as the hippocampus. The affected individual may be left feeling anxious most of the time and may find it more difficult to regulate fear. To people suffering from chronic fear, the world could look scary and their memories would confirm that.

Moreover, fear can interrupt processes in the brain that allow for the regulation of emotions, reading of non-verbal cues and other information presented to individuals, reflection before action, and behaving according to normal ethical standards. The experience of fear likewise dangerously impacts thinking and decision-making, leaving individuals vulnerable to intense emotions and impulsive reactions.

Therefore, people who live in constant fear, whether from physical danger in their environment or perceived threat, can become incapacitated. If untreated, chronic fear may lead to fatigue, clinical depression, accelerated ageing, and a general decline in the quality of life and relationships.

There is a wide range of fears that affect human lives every day. Most of them are rooted from childhood encounters and traumatic experiences. Fears also arise from a deep concern that needs might not be met. Smaller children fear being left alone and taken away from their parents. School children are afraid they would not find their place in the bigger environment of the school. Teens face the fear of not being accepted by the society and their peers. Adults and the elderly are afraid of losing their careers, health, loved ones, and purpose in life. The next sections discuss some of these fears and give a guide on how to manage and overcome each.

Social Phobia and Anxiety

"*I was 23, a millionaire and had everything, yet I was never unhappier in my life. I felt extremely isolated from my friends and family because I couldn't explain to them what I was feeling. I had no idea what was wrong with me*." - R. Williams

Ricky Williams is the Heisman Trophy-winning running back who became a celebrity overnight after being selected as the fifth NFL draft pick out of college. Williams' fears heightened at the start of his professional football career with the New Orleans Saints. A lot was expected from his performance as he stepped into the limelight. He was portrayed by the media as aloof or even weird and was known for conducting interviews with his helmet on. Williams, who shies away from his fans, could barely interact with his young daughter and could not leave his house to do errands. What most people did not realize is that Williams was struggling with a social anxiety disorder (Anderson, 2010).

Social anxiety disorder, also known as social phobia, is an intense and persistent fear of social situations. It is one of the most common anxiety disorders and is more than just shyness. It is overwhelming and may be felt over simple everyday activities, like shopping or speaking on the phone (Social anxiety disorder, 2015).

A type of complex phobia, social anxiety disorder has an unsettling or disabling impact on an individual's life. It can severely affect confidence and self-esteem, interfere with relationships, and impair performance at work or school. While many normal people sometimes get anxious about certain social situations, an individual with a social anxiety disorder will worry excessively about social situations before, during, and after the event has transpired. People with this disorder fear doing or saying things because what they say or do may embarrass or humiliate them. They do not like being caught blushing, sweating or appearing incompetent (Social anxiety disorder, 2015).

Signs and Symptoms

The overwhelming sense of fear, apprehension, and anxiety resulting from a social situation may lead to a panic attack. Some of the physical symptoms that are manifested include feeling sick, sweating,

trembling, and palpitations. Although alarming, these symptoms are often experienced briefly and do not cause any physical harm (Social anxiety disorder, 2015).

Some of the symptoms are felt weeks or months before an event and may be triggered by simply thinking about an upcoming social situation, according to the American Psychiatric Association (Zimmermann, 2014).

People with social anxiety disorder may also have other mental health problems, like depression, panic disorder, and post-traumatic stress disorder (Social anxiety disorder, 2015). Because social phobias severely inhibit a person's ability to make and maintain friendships, the Anxiety and Depression Association of America (ADAA) explains that many of these affected individuals will completely avoid situations or severely limit their activities. They will rarely attend events alone and need to bring someone they know along for security. If they do attend a social gathering, they will fade into the background. People suffering from social anxiety phobia also avoid activities such as talking on the phone or speaking in a group (Zimmermann, 2014).

The triggers for social anxiety disorder typically involve situations where the person thinks of the possibility of being judged or of doing something potentially embarrassing. High levels of stress are experienced during birthdays, graduations, or other occasions because of the dislike of being the center of attention. Some sufferers may be able to cope with many situations with ease but will fear specific events, such as giving a speech or interacting with a salesperson, the ADAA noted (Zimmermann, 2014). Still, others cope by engaging in substance or alcohol misuse (Zimmermann, 2014).

According to the ADAA, most of the 15 million American adults with this disorder started experiencing symptoms during their childhood or early adolescence. More than one-third of those with social phobia wait 10 years or longer to seek help (Zimmermann, 2014).

Children with social anxiety disorder may cry more than usual, freeze, or have tantrums. They may fear going to school and to participate in classroom activities and school performances (Anxiety in Children, 2016). Teens and adults with social anxiety disorder, on the other hand, may dread meeting strangers, talking in groups or starting conversations, and talking to authority figures. They may also have low self-esteem, feel insecure about their relationships, and avoid eye contact (Social anxiety disorder, 2015).

Causes of Anxiety Disorder

Like many mental health conditions, social anxiety disorder is most probably the result of a combination of genetic and environmental factors. Cheryl Carmin, a psychiatrist and director of the Clinical Psychology Training Program at the Ohio State University Wexner Medical Center, explained the effect of serotonin on social anxiety disorder. According to her, there may be a deregulation of neurotransmitters, like serotonin, that are related to social anxiety disorder. However, serotonin levels are also associated with several anxiety disorders and not specific to social anxiety disorder alone (Social anxiety disorder, 2015).

While the National Institute of Mental Health (NIMH) noted that there may be a genetic component to social anxiety disorder, some experts believe that the disorder is at least partly caused by environmental factors. Carmin also explained that a parent or a significant adult figure may model that it is all right to be anxious in situations where your performance will be evaluated. A parent who, for example, is commenting on being nervous about a performance review or who tells their children to not be anxious before their first show may be preparing the children to be anxious in that situation. Moreover, children who witness discomfort of a parent or another significant adult during a social situation may believe awkwardness in the situation is a typical behavior (Zimmermann, 2014).

Since many sufferers have difficulty in group settings, some end up consuming alcohol or abusing drugs alone. Others report that their

primary means of coping is to use alcohol, especially when it is not possible to completely avoid stressful situations. According to the publication Social Anxiety and Alcohol Abuse, about 20% of those with social anxiety disorder also abuse drugs, alcohol, or both (Book & Randall, 2002). It also pointed out that, ironically, some may also consume alcohol or use drugs to fit in.

Social Anxiety Disorder Among Adolescents

Anxiety is one of the most common disorders among young people. It has been reported that rate of anxiety disorders is higher in adolescence than in childhood. A study by led Newman in 1996 found that the prevalence of anxiety disorders increased from 7.5% to 20.3% at 11 years to 21 years of age, respectively. A similar study by Conradt and Petermann in 2000 also reported that the rate of anxiety disorders increased with age (Sauter et al, 2009).

Although separation anxiety disorder is less common in adolescence relative to childhood, other anxiety disorders, such as generalized anxiety disorder and social anxiety disorder, are more prevalent in adolescence (Sauter et al, 2009).

Anxiety in adolescents can be complex, chronic, and severe. Anxious adolescents may also be diagnosed with other disorders, like depression, conduct disorder, and alcohol abuse. As these youngsters go through the developmental phase of adolescence, a lot of transitions in the family and in school occur simultaneously, including intraperson-al, interpersonal, and contextual facets of their lives. The biological, socio-emotional, psychosocial, and cognitive development also take place during this transitional stage.

Developmental factors such as these are important to the development, maintenance, and presentation of anxiety disorders in adolescence (Sauter et al., 2009). Studies found that a peak in an incidence of social anxiety coincides with normal increases in fears of negative evaluation and social embarrassment (Ollendick & Hirshfeld-Becker, 2002). At the same time, growing independence may result in avoidance behaviors and unwillingness to seek and

receive help. This makes it important to consider the unique developmental characteristics during adolescence when designing interventions for anxious adolescents (Sauter et al., 2009).

Age and Anxiety Treatment Outcomes

One of the variables suggested to be associated with treating anxiety is age. Studies that investigated psychotherapy (Durlak, Fuhrman, and Lampman, 1991) and cognitive behavioral approaches (Cobham, Dadds, and Spence, 1998) for studying disorders and anxiety indicate that younger age is associated with poorer response to intervention. Other studies investigating the outcomes of anxiety treatment in young people have found that older age is associated with poorer treatment outcomes post-treatment (Southam-Gerow, Kendall, and Weersing, 2001).

In another study comparing individual and family-based methods for anxious youth, participants 7 to 12 years of age achieved significantly better outcomes than 13 to 18-year-old participants (Bodden et al., 2008). However, there are also studies that reported that age has no effect on treatment outcomes (Kendall, Hudson, et al., 2008).

These studies show that the association of older or younger age with enhanced outcomes remains unclear (Hudson et al., 2002). There is a lack of clear and consistent age-related patterns in treatment response. One of the factors that result in this deficiency is the type of treatment that influences outcomes. Younger children, for example, seem to benefit from therapy with parent or family involvement (Barrett, Dadds, and Rapee, 1998) while adolescents seem to find individual treatment more helpful (Cobham et al., 1988).

Another factor is how researchers use small samples with broad age ranges, and then group these ages into single categories. Sometimes, researchers compare age categories derived from the sample mean or median, rather than apply theoretically driven age-related distinctions (Stallard, 2002 and Kendall & Williams, 1986). Other studies noted that most treatment outcome studies on cognitive behavioral therapy

(CBT) for anxious youth are underpowered, reducing the reliability and validity of statistical analyses used to examine age effects on treatment outcome (Creswell & Cartwright-Hatton, 2007).

Moreover, the relationships currently observed between age and treatment response merely reflect factors associated with age instead of developmental processes (Daleiden et al, 1999). There is no consideration for large individual differences in developmental pathways and developmental capacities, which are characteristics of adolescence (Oetzel & Scherer, 2003). Because the number, nature, commencement, and length of the transitions experienced by young people vary even within the entire adolescent period and among adolescents of the same age (Holmbeck et al., 2006), chronological age is regarded as a proxy for these developmental processes and as an imperfect index of developmental level (Shirk, 1999).

Developmental Factors that May Influence Engagement in Treatment

The developmental processes that characterize adolescence give the opportunity to alter unsafe developmental trajectories (Cicchetti & Rogosch, 2002). These processes, however, can influence the way adolescents engage themselves in the treatment process. In turn, the extent to which a young patient engages in the therapeutic process may influence the success of the treatment (Chu & Kendall, 2004).

For example, the adolescent may find it difficult to acknowledge the need for help and treatment because he or she is at a stage where the need for autonomy is slowly being recognized and sought for (Edgette, 2002). This struggle during treatment can lead to resistance, detachment, or disengagement (Rubenstein, 2003) and result in a damaged therapeutic alliance and the adoption and generalization of skills outside of treatment (Sauter et al., 2009).

The behavior of adolescents with anxiety disorders may be challenging to clinicians, parents, and school staff who are part of the treatment process. Their conduct is the effect of a complex interaction between anxiety-motivated avoidance and defiance as they strive for autonomy (Garland, 2001). It is possible that high levels of anxiety

combined with this strife may lead some adolescents to resist acceptance of support when it is time to confront a feared stimulus. It may even contribute to ambivalence towards engaging in treatment and evading exposure tasks.

The phase of identity development that adolescents undergo also influences engagement in treatment. Young people who are in the foreclosure phase, when they are preoccupied with adopting the values of figures they identify with, may benefit from a slower tempo in sound treatment sessions, for example (Marcia, 1994). This phase is crucial because the exploration of personal issues may reactivate anxieties during identity formation. With reference to young people's engagement in therapy, Kendall and Williams suggested that for adolescents' engagement in CBT, strategies such as self-monitoring may help advance the knowledge of the self in the process of identity development (Kendall & Williams, 1986).

The way a patient interprets, organises, and acts on experiences, or develops ego may also have implications on adolescents' engagement therapeutic techniques (Kroger, 2004). Swensen suggested that given the tendency of young people to view behavior in terms of external causes, the most appropriate approach for young people below the conformist ego stage is behavioral-based treatment, that is, contingency management. Adolescents who are already aware of multiple perspectives and have achieved the self-aware stage may benefit from cognitive therapeutic techniques, such as the questioning of irrational beliefs (Swensen, 1980).

Lastly, socio-emotional development may also have an impact on the adolescent's engagement in therapy. Rohde and colleagues found that depressed adolescents (aged 13 to 17 years) with good coping skills recovered faster with therapy than those who had less insufficient coping skills. They suggested that excellent basic coping skills affect treatment outcomes (Rohde et al., 2006). The overlap between therapies for anxiety and depression (Weersing, Gonzalez, & Lucas, 2008) makes it reasonable to expect that anxious adolescents with more ad-

vanced coping methods also benefit more from engagement in therapy (Weersing et al., 2008).

The level of a young person's emotional development that is, emotion recognition and regulation skills, can also considerably impact participation in therapy. Emotional recognition and differentiation are essential for understanding and applying the cognitive model. A more developed regulation may allow young people to accept the adaptive coping strategies learned in therapy more quickly (Kingery, 2006).

Some studies (Holmbeck et al., 2006 and Kendall & Williams, 1986) highlighted the importance of asynchrony between physical development and other areas of adolescent development. According to the studies, treatment content and delivery should be tailored to the adolescents' abilities, not their appearance. It is important to keep in mind that physically mature adolescents may not necessarily have acquired the cognitive, verbal, or emotional capacities of peers in the same age range. Clinical experience suggests that the physical development of adolescents may have practical consequences for engagement in treatment. If young adults are reluctant to attend treatment sessions, parents often report that they cannot pick them up and carry them to the car as they might do with younger children.

The Fear of Judgment

I am now realizing that my fear of people has engulfed my life to the point that I settle for less than I deserve. I need help from others to overcome what's inside of me. I've never had anyone there for me emotionally. I acted out as a teenager and eventually became a teen mom. My son is now 14 years old. I can't imagine what life would be like outside of the box. I don't have any health issues other than anxiety. I don't even know why I care what others think really—but I'm unhappy.- Bev

Some argue that the greatest fear one could experience is to be incorrectly judged. Maxine, a PISTA user, recalled that she could not be herself in public for fear that people would point and laugh at her. She was unable to voice her opinions because she was afraid of sounding stupid. When she was at her most depressed state, simply walking down the street became a struggle. Maxine imagined people laughing and talking about her while she walked by. She lived a half-life and admitted missing out on a lot of things. She knew in her heart she has a lot to share with the world, but she was stumped by her fear.

This fear is why people keep mistakes and difficulties secret. People are afraid of getting adverse reactions, bad judgment, or unfavorable treatment from friends, family, and the society. Some are anxious about getting sympathy, which they are not prepared to deal with, or questions, which they are not ready to answer (Walker L., 2016). They know that they will be subject to more stress if their problems are revealed, so they go out of their way to look normal and in control of everything.

Building One's Own Sanctuary

Keeping secrets is like building a sanctuary where one could hide and seek refuge. When secrets are kept, an individual feels safe, seemingly away from judgment and unharmed by shame. According to psychologist and columnist Cathy Eck, people hide secrets by intentionally keeping records in the unconscious mind. Thoughts are piled in a heap, so secrets are buried (Eck, 2012).

Maintaining a secret requires a lot of energy. In a person's frazzled state, he or she would prepare armaments against any question that may be asked or any judgment that may be passed on to him or her. Sometimes, individuals in this state of stress lose their guard and fall in the process. They turn moody, sometimes more irritable. They may become sad and unable to enjoy themselves even when everybody else is relaxed and having an enjoyable time.

Even traits and behavior of other people become bothersome to secretive individuals. Some experience physical reactions, like headaches, weight gain, and fatigue, from the burden of carrying their secret (Walker L., 2016). They get into a decision to accept all the discomforts of keeping their secret in the hopes of avoiding the possible pain of judgment (Eck, 2012).

Children and Rules

Children have pure, fearless hearts that are driven by curiosity. This is seen among babies who precariously climb the stairs and reach for cupboards and shelves without minding the danger. Toddlers sing with their hearts, unconcerned about singing out of key or looking silly as they twist their faces in a host of odd ways. They do not fear to break the rules and being judged for behaving unconventionally.

However, at some point during childhood, children get conscious and afraid of making mistakes. They start hesitating to sing in front of a group and learn to keep events like breaking mom's vase a secret. They know that grabbing another child's toy without permission merits its punishment and are afraid of getting reprimanded for misbehaving in the supermarket. They discover that keeping any misdeed a secret could probably spare them from a possible penalty.

The tendency to keep secrets as a response to rules has deep roots in childhood. Although there are experiments that show humans have an undeveloped moral sense from the very start of life (Bloom, 2010), there are claims that people are not born with a sense of right and wrong and that the rule for good and bad is man-made and subjective (Bloom, 2010). Because children acquire rules from adults and figures

of authority, they accept what authorities define as right (Crain, 1985). While children do not know that the guiding rule for right and wrong is subjective, adults are fully aware of this prejudice. Unfortu-nately, when under stress, adults tend to forget that judges and their judgments are sometimes wrong.

Children follow their feelings naturally. Eventually, they learn from experience that going after their curiosity gets them judged. It starts during those times when children play and have fun, but later on get into trouble for being passionate in their play. Children may arrive at a conclusion that following love, curiosity, and passion gets one judged adversely. If this situation happens too often, children may start to associate fun with punishment. This will be repeated later in life when the circumstances may be more serious, but the feelings and emotions will be the same as those during the previous experience (Eck, 2012).

In the book *Quirkology: The Curious Science of Everyday Lives*, Richard Wiseman, Ph.D. illustrated the phenomenon of secrecy and lying by discussing an experiment that involved children aged three and five years. In the experiment, the child was asked to face the wall while a toy was set up behind him. The child was asked not to look behind. A few moments into the setup process, the facilitator told the child that he had to leave the laboratory and asked the child not to turn around and peek.

The facilitator returned after a few minutes and asked the child if he or she peeked at the toy. The hidden camera recorded that almost all the 3-year-old participants tried to turn and sneak a quick look. Half of these young ones also lied about peeking. On the other hand, all the 5-year-old participants peered and lied about not following the rule (Lewis M., 1993).

Based on common knowledge, the children in this experiment have broken two social rules—they disobeyed, and they lied about disobey-ing. However, these children did not consider the act of peeking at the toy as an offense. To their young minds, there is no harm in peeking.

They were just curious and having fun playing hide-and-seek. They have no idea that curiosity and fun would get them into trouble. They lacked blind judgment or the ability to predict the judgment and consequence of their actions. To children, the idea of peeking is completely harmless that is why disallowing them to do the act is confusing and does not make sense (Eck, 2012).

Later, children learn that there are consequences for disobeying the rules set by adults. They are taught that obeying these rules make parents and adults happy. It is during childhood when people are trained to trade curiosity for obedience and innocence for rules. And because they are conditioned to have the need to please, people spend their lives trying to fit into other people's selective definitions of good (Eck, 2012). Consequently, people allow themselves to be subjected to the rules and judgment of others and thus, are highly prone to stress.

How to Be Free from One's Fear of Judgment

Judgments should not be taken too seriously. Because these are based on subjective rules of the society or a person, any sentence cast on an individual may have nothing to do with him or her but with the critic who has a prescription of what he or she should be like.

Judgment passed on a person is more of a preference of the critic evaluating the person. The critic may say that the speaker in a conference, for example, does not look good in a gray jacket. However, it is only the critic's opinion that the speaker would look more pleasing in, say, a black jacket. Because judgments are preferences, allowing one's self to yield to these assessments is like giving more value to other people's valuation than to the true merits of who an individual truly is. When this happens, an unhealthy message and appraisal of one's self are sent to the subconscious and damages self-esteem (Seda, 2013).

In addition, people are afraid of being judged on the things that they themselves judge others on. They judge how people dress because they are concerned about how people will regard the way they are

dressed. Being less critical of one's self also frees a person from the anticipated scrutiny of others. This is the reason why every time a person judges someone, the cycle of judgment is perpetuated (Seda, 2013). If a person stops being critical of him or herself, there will be no need to measure the self against others. The cycle of judgment will be prevented.

Instead of casting judgment, people can get curious about what caught their attention. This way one chooses to accept rather than reject what is initially regarded as unconventional. Besides, what people categorize as normal is just what is personally common to them. Conventional is what people expect; it is predictable.

Uncommon people, things, or behaviors seem abnormal because they are different from another person's own world. Judgment stops when people become curious. Curiosity tries to understand those that are different to make them familiar. Thought processing does not stop at the observation of something strange. It continues to wonder at the observed strangeness by finding any cultural norm or the medical fact that explains it. Respect is given, and pertinent respect is received in return.

Live to Tell: Help from Sharing Secrets

To some, sharing one's private stories is natural and liberating, but to most people, it is a daunting task. Somehow, keeping secrets give a sense of safety and protection. However, the stress that is experienced from preserving and hanging on to one's dark stories may slowly call for attention. It could take a toll on one's health and quality of life.

People need an avenue to express their hurts and fears, but are afraid of rejection and being subject to the rules they have grown to accept. When this reality is kept a secret, the person also holds on to his or her fear for as long as the secret is locked within. The fear of judgment becomes the wall that separates him or her from peers and the society. This discomfort from the act of keeping a secret affects his or her mental, physical, and social status. Most importantly, it destroys

faith in the self. When this happens, it is beneficial for the individual to get support from a professional or a trusted confidant.

Although frightening, sharing one's vulnerability can be beneficial when done with the right channel at the right time. By sharing one's own story, a person starts to honor his or her identity; a feeling of pride and confidence in one's own real self is attained. Healing is found, and dignity is reclaimed (Rosenblatt, 2016).

People who have conquered their fears and accepted their characters attest to the benefits of coming out and sharing their secrets. They became advocates of sharing struggles and successes. Elaine Manfield's story started as a memory game with her husband Vic. She and Vic would share a distant memory every night until they slowly unearthed affective stories from their childhood. The memories reopened the wounds they carried and worked so hard to hide—things that made them feel ashamed and hopeless. But with every story, Elaine and Vic trusted each other more. The inner hurts they learned to hide since childhood finally found a place to rest. Their sharing became a means for healing throughout their marriage.

In her article, "The Memory Game: Sharing Our Secrets and Wounds," Elaine recalls:

> "*When Vic had cancer, I saw his bravery every day. Every day, I saw the price he paid and tended his emotional wounds. Because of our habit of honesty, there was space for me to admit my exhaustion and fears about life without him. We didn't wear masks of bravery for each other. We shared all our feelings and fears, acceptable and unacceptable*" (Mansfield, 2015).

The Dangers of Sharing

Psychologists, however, warn about the harmful consequences of sharing secrets. They are contesting the popular assumption that telling secrets in various ways and avenues is morally superior to keeping them and that it automatically results in healing. According to them, telling secrets in the wrong way or at the wrong time can be harmful and even destructive (Imber-Black, 2016).

When ready to share, one of the best ways for an individual to reveal confidential information is to tell an objective listener like a therapist. A patient's relationship with the therapist—or another support provider like a minister, priest, or rabbi—can be an excellent platform for shedding off unproductive feelings, finding empathy and acceptance, and getting the right resources for support and strength.

It is also important to understand that sharing secrets with professionals alone could likewise have adverse effects on relationships. Therapy is not helpful when critical issues that require communication with the concerned party—like a family member, for example—are discussed in therapy more than at home. Instead, therapy should serve as a ground for practicing good communication, including sharing secrets within relationships.

The Choice to Keep Silent

PISTA therapy is a platform where personal emotions and fears are accepted without receiving judgment. PISTA users and coaches communicate with respect and facilitate the acceptance of one's self and the past. Individuals learn to work with their pain and to live with their real selves. They learn to forgo the burden of mistakes from childhood through adolescence and to make peace with the self.

More importantly, the PISTA method also promotes the healthy side of privacy and keeping secrets. When privacy is appreciated, a person's inner strength is discovered and is reinforced to help him or her live through mistakes and regrets. There is comfort in silence; there is no mandatory need to reveal your emotions to others. Individuals learn to enjoy and take refuge in their own private world, like young children discovering themselves and having fun in the process of self-discovery.

In understanding one's private thoughts and emotions, individuals resolve the inner conflict that arises from their fears independently. They discover their own inner support that comes from an acceptance of their real self. Past decisions and actions are understood, and judg-

ment, if any, is based according to their own goals and not on other people's opinions. Strength emanates from within and gives the courage to get on with life. People find beauty in who they really are.

As for Maxine, things began to change after a few sessions of PISTA Therapy. She was filled with an increasing realization that her life is not void of meaning and purpose. Then she started searching for answers and got determined to live a more fulfilling life.

Maxine made a commitment to face her fears and to rediscover and reconnect with herself. Every day she took small steps to live outside her comfort zone. It was not easy, but having crossed the gates of discomfort and fear made her realize what she can do. Months after her first PISTA session, she found the fulfillment that she had been searching for. Although she admits she still have second thoughts on what others think, she is confident she can see past those thoughts and accomplish things she wants to do.

Substance Use Disorder

Most days, especially during bad ones, Sean would drink early in the day and self-medicate. Because he is a quiet, low-key guy, Sean could hide this activity by not interacting much with family and other people. Gloria, his wife, knew that he was not well but she dismissed and kept mum, hoping things would get better on their own. According to her, Sean had always been responsible, and he did not actu-ally fit into her profile of an alcoholic.

However, Sean was unhappy in his job and got into a vicious cycle of getting depressed then drinking. His doctor had been checking on him for years, but Sean would not drink before his annual checkup in anticipation of the blood work that would be done.

On family road trips, Sean would pour all the contents of a six-pack into a big gulp cup and get behind the wheel. Gloria would notice but Sean would insist that he was fine and that she better keep quiet because the kids are in the car.

Gloria was repulsed on the night his family was supposed to spend the night out. Sean came home drunk. Their sons were very upset, so Sean told them about his problem the next morning. He said he was getting help and that he would not drink anymore. Gloria gave Sean an ultimatum and he willingly went to seek pro-fessional help (Bennett, 2012).

Substance use disorders (SUDs) are varied conditions where psycho-active substances are incorrectly and repeatedly used in response to significant distress and disability. These disorders are highly prevalent with lifetime rates of substance abuse or dependence estimated at over 30% for alcohol and over 10% for other drugs (Compton et al., 2007 and Hain et al., 2007). An individual is said to engage in substance use when he or she takes any prohibited psychoactive substance or uses any prescribed or over the counter medication improperly.

Symptoms of substance abuse are reflected externally with failure to fulfill role obligations, an encounter with legal problems, dangerous use of the body, and difficulty with interpersonal experiences. Inter-nally, the symptoms of substance dependence include physical withdrawal upon discontinuation of use and difficulty in cutting down or controlling the use of the substance (McHugh et al., 2010).

Kadden (2002) used a cognitive-behavioral conceptualization model in illustrating behavior associated with SUDs and described these behaviors as learned or acquired either through learning by association or learning by consequences. Because of this, SUD behavior can be modified by the application of learning-based interventions.

In the method learning by association, which is also called Pavlovian or classical conditioning, neutral stimuli can trigger the craving for and use of alcohol or drugs because of repeated associations between the stimuli and the use of alcohol or drug. Some triggers may be external factors like objects in one's environment, particular settings, and locations, or certain people whom the patients met regularly. Other triggers may be internal events like thoughts, emotions, or physiological changes.

If repeatedly occurring in close temporal proximity to each other, the associations between the triggers and alcohol or drug use can develop and intensify during the repetition. The user becomes subject to cravings that can be stimulated by a growing array of supposedly neutral stimuli that have become potential triggers (Kadden, 2002).

On the other hand, in the learning by consequences model or operant conditioning, drinking and drug use behaviors are strengthened by the consequences that follow their use. Substance use is likely to be repeated if the user experiences arousal, euphoria, or comfort around social situations because of helpful reinforcement that was felt. If substance use reduces anxiety, tension, stress, or depression, the likelihood of repeated use in the future is also increased. This process is called negative reinforcement because the unpleasant experience is reduced or terminated (Kadden, 2002).

It is also important to note that adverse consequences of substance use, like depression, anxiety, and withdrawal symptoms, can also re-duce the likelihood of continued use of the substance. However, the optimistic effect of the decrease may be minimal, because it is felt long after the individual started substance use. This delay gives rela-

tively less attractive results compared to the gratification from more immediate reinforcing consequences (Kadden, 2002).

These two models of the learning process are the bases of several treatment approaches, including the cue exposure concept, which attempts to reduce the impact of trigger events by breaking their association with alcohol or drug use. The cue exposure approach identifies the most powerful trigger events for an individual and attempts to reduce their impact by extinction. This is done by repeatedly exposing users to these potent triggers without proceeding to substance use. Because of the repetitive exposure, triggers to substance use are eventually supposed to lose their ability to elicit cravings and alcohol or drug-seeking behavior (Kadden, 2002).

Despite the popular appeal of this concept, studies made on alcohol and drug dependent patients have not been consistent in successfully exhibiting the effects of substance use. There have been mixed results, and studies show that the procedure is more likely to reduce the severity of a relapse than to prevent the initial lapse to alcohol or drug substance use (Kadden, 2002).

Cognitive-Behavioral Theory for SUDs

Several large-scale trials and quantitative reviews show evidence supporting the efficacy of the Cognitive-Behavioral Theory/Approach (CBT) for alcohol and drug use disorders (Dutra et al., 2008 and Magill et al., 2009). Whether used in a combination or independently, several unique interventions of CBT for substance use disorders can be administered in both individual and group formats and they can work to highlight different targets.

Motivational Interviewing

When considering treatment, motivation and adherence to treatment should be considered. Motivational Interviewing is based on principles of motivational psychology and it targets indecisiveness towards changing behavior regarding drug or alcohol use (Miller & Rollnick, 2002). It is intended to enhance the individual's intrinsic motivation

for change (Reynolds, 2006) and is applied to influence adherence to treatments for a variety of other disorders and behaviors, including increasing adherence to CBT for anxiety disorders (Simpson et al., 2008 and Westra et al., 2009). Treatments based on the MI model are employed either individually or in combination with other treatment strategies for SUDs.

Motivational interviewing approaches have strong empirical support for use in treating alcohol users, with several studies showing significant and durable effects (Carroll et al., 2009 and Otto et al., 2007).

Contingency Management Therapies

Contingency management therapies give incentives or rewards to patients for meeting specific behavioral goals, like verified abstinence from substance abuse. Based on the principles of behavioral pharmacology and operant conditioning, contingency management approaches believe that behavior, followed by affirmative consequences, will most likely be repeated. An example is to allow a patient to take home methadone doses on the condition that patient should present drug-free urine specimens. This strategy is associated with significant reductions in forbidden drug use and can be used to address a number of other problems (Prendergast et al., 2006).

This approach also supports the idea of encouraging incentives, where patients are given rewards for exhibiting good behavior. Contingency management approaches are more effective in improving substance use outcomes and in retaining patients in treatment compared to negative consequences (Stitzer & Petry, 2006).

Relapse Prevention and Other Treatments

Relapse prevention is another cognitive-behavioral approach that employs functional analysis of cues for substance use and systematic training of alternative responses to these cues. It identifies situations where the patient is at high-risk of engaging in substance use and prevents the occurrence of similar situations. Examples of high-risk situations include being in a favorite bar or encountering friends who

are also users themselves (Marlatt & Gordon, 1995). The patients' perception of an expected soothing effect of use is challenged, and they are educated on how to make more informed decisions during a threatening situation.

Like other cognitive-behavior approaches, relapse prevention is based on social learning theories and principles of operant conditioning. It emphasizes an understanding of drug use within the context of its antecedents and consequences, and advocates skills training through which the individual learns to recognize the situations that make him or her most vulnerable to drug use. The training helps avoid such high-risk situations and uses a range of behavioral and cognitive strategies to effectively manage such situations in case they cannot be avoided (Kavanah et al., 2006 and Vedel et al., 2008).

Furthermore, the skills acquired from relapse prevention and cognitive behavior therapy cannot only be used initially to foster abstinence but can also be applied to a range of co-occurring problems. This feature may be a factor in emerging evidence for the long-term durability of the effects of cognitive behavior therapy. Several studies have demonstrated that the effects of the cognitive behavior therapy are lasting and that continuing improvement may occur even after the end of treatment (Grant et al., 2009).

Couples and Family Treatments

Substance abuse disorders are strongly associated with a patient's social environment and are often treated in an individual or group format (McHugh, Hearon, & Otto, 2010). Couples and family treatments treat drug-using individuals in the context of the family and social systems in which substance use may develop or be maintained. Engaging social networks in treatment can be a powerful predictor of change, and the inclusion of family members may also be helpful in reducing attrition, especially among adolescents (Wells & Albano, 2005).

Other hopeful treatments, which utilize the support of the partner, family, and community in helping the patient achieve abstinence, have been developed. Like Contingency Management, the Community Reinforcement Approach (CRA) focuses on changing contingencies within the environment, like adding favorable non-alcohol related activities in the patient's daily schedule, for example, to make the sober behavior more rewarding than substance use (McHugh et al., 2010).

Efficacy of these approaches for adult and adolescent substance users has been strongly supported by meta-analyses. However, since these family-based treatments are very diverse and combine a range of techniques, it is unlikely that all approaches are equally effective (Sauter et al., 2009).

Behavioral Couples Therapy (BCT) is another treatment, which utilizes the support of a partner. It assumes that there is a reciprocal linkage between relationship functioning and substance abuse. It also acknowledges that substance use can have a detrimental effect on the relationship, and this relationship distress can lead to increased substance use (Sauter et.al, 2009).

BCT works to improve how a partner copes with substance-related situations and the overall functioning of the relationship. This approach commonly uses interventions, including psychoeducation, training on how to withdrawal from drug use, and the application of reinforcement on drug-free days. Non-drug activities, which are mutually pleasurable to both parties, are scheduled to decrease opportunities for drug use and to reward abstinence (O'Farrell & Fals-Stewart, 2006).

Meta-analysis shows considerable support for the use of BCT over individual counseling treatments excluding CBT in alcohol use disorders (Powers, Vedel, & Emmelkamp, 2008). Data explained that those who went through BCT condition demonstrated a reduced frequency of use, and consequences of use as well as greater relationship satis-faction at follow-up. Stanton and Shadish (1997) conducted a meta-

analysis and found that BCT was associated with strong treatment retention, possibly because of the successful incorporation of the patient's home environment and the desired support system in treatment.

The Fear of Ageing

"I am most afraid of losing my mental and physical independence and becom-ing a nursing case. The biggest problem for the elderly is living a solitary life." - Ingrid Foerster, 82

"I'm afraid that my children will hurt me, kick me out of my house and I will die alone. The biggest problem facing elderly Egyptians is the lack of health insur-ance and retirement pay like in civilized countries." - Egyptian farmer Mahmoud Hussein, 75

"I'm most afraid of losing my memory. With so many cases of Alzheimer's, it frightens me. I worry about remembering the past, people and friends and the things I have done and can't recall." - Sandra S. Harris, 67

- Associated Press, 2013

Ageing is a natural biological process that starts at birth. Because age holds many promises and serves vast possibilities for exploration, children dream of growing older and young adolescents long to turn eighteen. Ironically, as people grow older, a desire to postpone ageing and to hold on to youth arises. The idea of growing old gives birth to anxiety, a feeling of instability and dependency, and fear of death.

In a study conducted by Harris Poll in 2014, it was found that 87% of Americans have at least one fear when they think about getting old. The decline in physical ability is the most feared by 23% of Americans, followed by memory loss at 15%, and having a chronic disease or running out of money at 12% each. Only 10.1% of Americans are afraid of death (Get Old 2014 Fact Sheet, 2014).

A separate study also commissioned by Pfizer in 2014 highlighted an increased concern for death and ageing in social media. The study found that 62% of the 4.2 million Tweets posted about ageing in the last 12 months before the study was made were disparaging. It also showed that health and wellness were the most commonly discussed Tweet topics in 2014 at 48% (Get Old 2014 Fact Sheet, 2014).

What Scares Men and Women about Ageing

In her article, "5 Things Men Fear Most About Aging," Paula Spencer Scott cited a study about the things feared by men and women about ageing. The study showed that because it is common for males to feel embarrassed when things don't work as well as they did before, men find the prospect of declining performance or impotence scarier than cancer or death (Scott, 2010).

Men are concerned about losing their physical strength and the power that comes with it. Retirement makes them feel deficient and irrelevant because their career defines themselves and fills their time. Reaching retirement age tends to coincide with having men's opinion solicited less and becoming more invisible.

The idea of their inability to drive is also a concern. Cars represent freedom, independence, and the endless possibilities of the open road. The loss of this ability could also mean becoming dependent on others for their needs.

Lastly, men are worried about losing their minds; they fear the idea of getting Alzheimer's disease.

Scott also cited a study on what women fear about aging (Scott P., 2010). According to the study, women are primarily concerned about getting unattractive during old age. They dread looking old with canes, walkers, hearing aids, and a stooped posture. They associate appearance with social visibility and functional status.

Women are also apprehensive about financial destitution and uncertainty about the future because of the thought of never having enough. They do not want to be left alone and are afraid of the death of their spouse, including seeing their children die first or losing old friends when they relocate for retirement, move to be closer to family, become sick, or die.

Lastly, women are concerned about getting sick, especially with cancer. Because they are used to the responsibility of caregiving at home,

women also find the idea of role reversal when they do get sick uncomfortable. Like men, they do not want to be dependent on others.

The State of Today's Elderly

Contrary to these fears, growing old should not be considered a problem and should be dealt with optimistically. In his article, "Learning to Love Growing Old," Jere Daniel mentioned that there are worldwide research studies showing that many people nowadays may be ageing better than their parents (Daniel, 1994).

Daniel cited a study, started by Alvan Savnborg in 1970 on older people in Sweden, which showed that there is no measurable decline in many body functions until after age 70, and there is minimal decline by 81. Cognitive abilities were intact up to at least age 75, although the speed of remote memory has declined. Svanborg was quoted saying, "the vitality of old people in Sweden today, among the longest-lived people in the world, seems to be greater than it was only five or 10 years ago."

Daniel likewise mentioned American studies that compared ageing healthy people in communities and in institutions but failed to show evidence of a decline in intelligence, cognitive skills, and even memory that had appeared in all previous cross-sectional studies of aging.

Whether or not there is a decline in the physical, mental, and emotional state of the elderly of today, there is a pressing need to support this age group, which has been starting to swell in different parts of the world. In her introduction during the 66th World Health Assembly last 2013, Assistant Director-General for Family, Dr. Flavia Bustreo, of the Women's and Children's Health at the World Health Organisation (WHO), revealed that one in every nine people in the world is 60 years of age or older. This number is expected to increase to one in five people by 2050 and shows that ageing and responding to the needs of this group is an issue across the globe (WHO, 2013).

The Global AgeWatch Index, created by advocacy group HelpAge International and the UN Population Fund, addresses the lack of international data on the extent and impact of global ageing. According to the report, wealthy nations, in general, are more prepared for ageing than the poorer countries. The report ranks the social and economic well-being of elders in 91 countries, with Sweden coming out on top and Afghanistan is at the bottom. Data also showed that the fastest aging countries are the developing nations like Jordan, Laos, Mongolia, Nicaragua, and Vietnam, where the number of older people will more than triple by 2050. These countries ranked in the bottom half of the index.

In Vietnam, for example, Tien Thao runs a small tea shop on the sidewalk near his home in Hanoi. At 65 years old, Thao is very aware that he, like millions of others, is plunging into old age without a safety net. He wishes he could retire but could not because he and his 61-year-old wife depend on the $50 they earn every month from the tea shop (Press, 2013).

Thao rises early every day to open their store at 6 a.m. and works until 2 p.m. when his wife takes over until closing. He believes that people at his age should have rest but knows he still must work to make ends meet. He and his wife have no pension and no health insurance. It scares him to think of the possibility of getting sick because he has no means of paying for medical care (Press, 2013).

In Afghanistan, only elderly in the government is being offered pension. According to the UN data, life expectancy in this country is 59 years for men and 61 for women, compared to a global average of 68 for men and 72 for women (AP, 2013).

On the contrary, in Sweden where the pension system is now 100 years old, social support, education, and health coverage are well established. Sweden is followed by Norway, Germany, the Netherlands, and Canada in the list of top countries where the social and economic well-being of elders is being addressed (Press, 2013).

It is also observed from the UN research that prosperity does not guarantee protection for the old. Even the world's rising economic powers like Brazil, Russia, India, China, and South Africa rank lower in the index than some poorer countries such as Uruguay and Panama (Press, 2013).

The 66th World Health Assembly also highlighted that the issue of the growing elderly population is not exclusive to high-income countries. Majority of older people live in low and middle-income countries where some of the fastest rates of aging are occurring. Patterns were also identified in developed countries, wherein many people will experience functional decline towards the end of life. These people may then require some form of long-term support, and much of the burden, therefore, is now with families, especially women (WHO, 2013).

It was likewise reported in the World Health Assembly that in the United States, specific issues relating to elderly care like fall prevention, medication management, assessment mechanisms, case management, and housing and transportation are being given importance by the government. Many Americans are still relying on families and informal support. Brazil, on the other hand, is currently undergoing an epidemiological, demographic, and nutritional transition. Non-communicable diseases account for 72% of mortality and they affect older people.

New Consciousness Challenges Stereotypes on Ageing

The general idea of old age starts in childhood when children are exposed to stories that portray the elderly as crinkly and weak, and as forgetful persons with declining strength of the mind and body. This idea persists as children grow up and are soon believed to be true.

Studies on how diverse cultures treat the elderly both affirm and challenge these stereotypes. In her article, "How the elderly is treated around the world," Martinez-Carter (2013) enumerated the different ways the elderly is regarded. In Korea, old age is deeply respected and celebrated. The 60th and 70th birthdays are important life

benchmarks and are thus celebrated with large-scale parties and feasts with the family. On the other hand, the Chinese and Japanese both believe in filial piety, and children are expected to care for parents when they grow old (Sung, 2004).

The Mediterranean and Latin cultures believe in the concept of one big, happy family. It is commonplace for multiple generations to live under one roof sharing a home and all the duties that come with maintaining one. The oldest generation is often relied on to assist with caring for the youngest, while the breadwinners labor outside the home. As such, the aged remain thoroughly integrated well into their last days. Meanwhile, in the Indian culture, the elders are the head of the family and are supported by the younger members of the family. They, in turn, play a key role in raising their grandchildren (Martinez-Carter, 2013).

Martinez-Carter also described that the U.S. and U.K tend to be youth-centric, emphasizing attributes like individualism and independence. She said that this behavior relates back to the Protestant work ethic, which ties an individual's value to his or her ability to work—something that diminishes in old age. As their health deteriorates, the elderly in these cultures often move to retirement communities, assisted living facilities, and nursing homes.

A New Consciousness in the Making

A group of concerned experts is now challenging myths and false ideas on ageing. They are working to encourage people to stop looking at old age as a problem and something to fear. They introduced the concept called Conscious Ageing that removes people's denial of ageing by helping them appreciate and embrace age.

Psychology Today quotes Stephan Rechtschaffen, M.D. explaining that Conscious Ageing is a new way of looking at and experiencing ageing that moves beyond our cultural obsession with youth towards respect and a need for the wisdom of age. This concept recognizes

and accepts the ageing process and everything that goes with it as a reality and a natural part of the life cycle that happens to all.

The concept's goal is to change the prevailing view of aging as something to be feared and of the aged as worthless. It also aims to reverse the view of aging as an affliction. Instead of spending billions to ward off ageing, it encourages to spend more to improve the quality of life among the aged.

Because people isolate themselves from the elderly, Daniel continued to point out that once segregated, Americans could no longer leverage the benefits of age, or even to recognize or acknowledge that there are any. This brings up the special brand of intelligence called wisdom, which remains a very special commodity. It is a great natural resource that is undervalued and is almost totally untapped in doing what it is meant for—to guide the young.

To get a renewed awareness and appreciation of age, Sherwin Nuland, M.D., author of *How We Die*, encouraged people to give their lives a purpose by embracing a more contemplative life. He asked them to pay more attention to those who have already crossed the border into old age, to value their experience, and to embrace their future selves.

The Fear of Memory Loss

At almost 74 years old, Joe was still working part-time. He noticed that he was becoming more forgetful at work and that finding the right words to describe some-thing is becoming frustrating. His boss informed him that he missed a couple of meetings. Joe started to wonder if he had a serious problem.

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Anna's mother was still going strong at 85 and kept herself busy with friends and church activities. Recently, Anna noticed that her mother was becoming more forgetful and confused, and spent a lot of time alone in the house. One day, her mom got lost on her way home from shopping. According to the doctor, Anna's mother had early-stage Alzheimer's disease.

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Al started having a difficult time remembering things. He did not sleep nor eat well and became confused and irritable. His wife took him to the doctor who said he was having a bad reaction to one of his medicines.

Memory loss is a condition in which an individual starts to lose the capacity to recall memory and facts that he would normally and effortlessly be able to remember. As one gets older, it is normal to be a bit forgetful of something that happened seconds or minutes ago, or of a memorable event that occurred in the past. Memory loss may start suddenly, but more importantly, it could be a symptom of some-thing serious especially if it gets worse over time (Memory loss, 2015).

Memory loss has a wide range of probable causes including anxiety, stress, and depression. It may be a result of poor concentration or lack of interest that also leads to the inability to regard things right away. Lack of sleep usually makes this condition worse (Memory loss, 2015).

What Leads to the Death of Brain Tissues?

Other common causes of memory loss are head injuries from acci-dents and strokes that may interrupt blood supply to the brain and

cause brain tissues to die. These may initiate sudden memory loss that could make the patient forget events that happened before (retrograde amnesia) or after (anterograde amnesia) the trauma.

The less popular causes of memory loss are:

- An underactive thyroid that does not produce enough hormones
- Medication like sedatives and some treatments for Parkinson's disease
- Long-term alcohol misuse
- Sub-arachnoid hemorrhage or bleeding in the brain
- Vitamin B1 (thiamine) deficiency, possibly as the result of a digestive problem
- Transient global amnesia, a problem with the blood flow to the brain that results in sudden episodes of memory loss
- Psychogenic amnesia, in which a memory is blocked out and important information is forgotten after a stressful or traumatic event, and
- A brain tumor

Memory loss is not a sudden condition but is instead a mental form that may gradually get worse over time. Some fear that this condition may be a sign they may already have dementia. However, not all cases of memory loss are signs of dementia.

A person with dementia is not usually aware of his memory loss or may deny it. He may struggle to remember immediate or recent events, but can still recall events that happened a long time ago (Memory loss, 2015).

Dementia, a Loss of Efficient Cognitive Functioning

Dementia which is sometimes referred to as cognitive impairment or amnesia usually occurs in people over the age of 65. It is not a disease but a collection of symptoms that result from damage to the brain. It is the loss of cognitive functioning—which is the ability to think, remember, or reason—and behavioral abilities to such an extent that it interferes with a person's daily life and activities.

According to the Dementia Guide (2015), different conditions bring about symptoms of dementia. The most common are similar to the signs of Alzheimer's disease, including difficulty in recounting recent events, remembering names and directions, and asking questions.

Symptoms and Causes of Dementia

Some of the early symptoms of dementia are often mild and not easily noticeable. As it slowly gets worse, there is an increased difficulty in performing tasks and activities that require organisation and planning, in finding the right words in conversations, and in handling numbers and money. Patients with dementia also experience depression, become confused in unfamiliar environments and have sudden changes in personality and mood.

The brain of an individual with dementia becomes more damaged and starts to do less optimal work over time. The symptoms develop at a speed that varies among individuals, depending on the cause or type of dementia that they are experiencing. People with vascular dementia may experience symptoms similar to that of stroke including muscle weakness or paralysis on one side of their body.

Patients experiencing dementia with Lewy bodies experience symptoms similar to those of Alzheimer's disease, including periods of alertness or drowsiness, fluctuating levels of confusion, hallucinations, and slowness in physical movement (Dementia Guide, 2015).

There are also some types of dementia that do not share similar symptoms with the others. Frontotemporal dementia, for example, exhibits

early symptoms like changes in emotion, personality, and behavior. Patients with this type of dementia become less sensitive to other people's emotions and may also lose some inhibitions, make impulsive and inappropriate comments, and behave out of character. Language problems—such as finding the proper words, talking less or not speaking at all—may also be observed.

As dementia advances, memory and communication deteriorate further. Because the ability to speak is becoming increasingly difficult, not to mention the possibility of eventually losing the ability to speak altogether, communicating with patients with advanced dementia is important. Also vital is the recognition and use of other non-verbal means of communication, like facial expression, touch, and gestures.

During the late stage of dementia, patients are unable to look after themselves and already require constant care and attention. They may no longer recognize close family and friends nor remember where they live or know where they are. Understanding simple information, carrying out basic tasks, or following instructions may already be impossible.

Many people in this late stage also experience mobility issues, becom-ing less able to move around without assistance. They may appear increasingly clumsy when performing daily duties. Some may eventu-ally be unable to walk and may become bedridden. They may also need help in eating meals because they could no longer feed them-selves and make sure they eat enough. Many have trouble eating or swallowing, which could lead to choking, chest infections, and other problems.

Because dementia patients may have problems eating, they also start to lose weight. Some of them may even acquire bladder or bowel incontinence.

What Are the Risk Factors for Developing Dementia?

There are several disorders and factors that contribute to the development of dementia. Age is the primary risk factor, as dementia

usually occurs in people over the age of 65. Neurodegenerative disorders such as Alzheimer's disease, frontotemporal disorder, and Lewy body dementia result in a progressive and irreversible loss of neurons and brain functions (Dementia: Hope Through Research).

The presence of certain proteins in the brain is also a factor for developing dementia. Studies show that several major dementias are commonly characterized by an excess of some proteins or protein fragments in the brain that have taken abnormal forms and thought to be toxic to brain cells. Some of these protein abnormalities can be detected in cerebrospinal fluid.

In Alzheimer's disease, the protein called tau twists and combines into abnormal bundles called neurofibrillary tangles found inside the neurons. Thus, the exchange of nerve signals is disrupted causing cell death and impaired cognition. Disorders that are associated with this tau buildup are called tauopathies.

Abnormal plaques of another protein, called amyloid, eminent in spaces between brain cells are also characteristics of Alzheimer's disease. Both tau and amyloid are believed to be factors that reduce brain function and increase the death of nerve cells in the disease. Neuroscientists are finding ways to understand if the plaques and tangles cause the disorder, or if their presence triggers another process resulting in neuronal death. Researchers are also identifying the neural pathways that are affected by beta-amyloid and that contribute to the development of Alzheimer's pathology and symptoms.

The other kind of protein that contributes to the growth of dementia is called alpha-synuclein, which gathers inside neurons. Brain disorders associated with this protein are called synucleinopathies. Lewy body dementia, which is a type of synucleinopathy, involves protein aggregates shaped like balloons and found inside the nerve cells. Scientists hope to determine what causes alpha-synuclein to form irregular combinations that are toxic to nerve cells, and to understand why the aggregation is an age-related phenomenon in Parkinson's disease and other disorders related to synuclein.

Injuries that affect the supply of blood to the brain are also factors to dementia development. Multiple strokes or injuries to small vessels carrying blood to the brain cause cell damage and lead to vascular dementia and vascular cognitive impairment. The risk of having dementia may be considered even when the patient suffered only small strokes.

There are some studies indicating that mixed vascular-degenerative dementia is the most common cause of dementia, especially in the elderly. Autopsy studies that examined the brains of people who had dementia suggested that a majority of those aged 80 and older probably experienced a mix of processes related to neurodegenerative and vascular diseases. In one study, approximately 40% of people who were thought to have Alzheimer's were found to have some form of cerebrovascular disease. Several studies have also found that many of the major risk factors for vascular disease are similar to the risk factors for Alzheimer's disease (Dementia: Hope Through Research).

Researchers are still working to understand how underlying disease processes in mixed dementia influence each other. It is not clear, for example, if symptoms are likely to be worse when a person has brain changes reflecting multiple types of Dementia. It is also not certain if a person with multiple dementias can benefit from treating one type, for example, when a person with Alzheimer's controls high blood pressure and other vascular disease risk factors.

Recent Studies on Age-related Memory Loss

In 2013, Nobel laureate Eric R. Kandel, M.D. led a team of researchers from Columbia University Medical Center (CUMC) and published a study that confirmed that deficiency of a protein, called RbAp48, in the hippocampus is a significant contributor to age-related memory loss (A Major Cause of Memory Loss, 2013).

The hippocampus plays an important role in memory being part of the brain where several sub-regions are interconnected. Studies have shown that Alzheimer's disease debilitates memory by primarily

acting on the entorhinal cortex, which provides the major input pathways to the hippocampus.

Age-related memory loss was previously thought to be an early manifestation of Alzheimer's disease. However, the study led by Kendal presented the strongest causal evidence that age-related memory loss is distinct from Alzheimer's and that it is a process that affects the dentate gyrus, the sub-region of the hippocampus that receives direct input from the entorhinal cortex.

The study was performed on individuals with healthy brains and aged 33 to 88 years. The team analyzed cells from the dentate gyrus and entorhinal cortex of the individuals' brains and identified 17 candidate genes that might be related to aging in the dentate gyrus. The most remarkable changes occurred in the gene called RbAp48 whose quan-tity decreased gradually with aging across the study subjects.

To validate the effect of RbAp48 in age-related memory loss, the research team studied the brains of aged mice and confirmed that there was a reduction of the said protein in the dentate gyrus. The team validated further by genetically inhibiting RbAp48 in the brains of healthy, young mice and found the state of memory observed in aged mice. When RbAp48 was not held back, the mice's memory returned to normal.

The CUMC team also conducted functional MRI (fMRI) studies that reduced RbAp48 in mice and found similar results. The fMRI profile and mechanistic defects of the mice with inhibited RbAp48 returned to normal when the inhibition was turned off.

Another experiment that increased RbAp48 in the dentate gyrus of aged mice using viral gene transfer showed that increasing the protein improves the mice's performance on the memory tests and that age-related memory loss in mice can be reversed. Unlike Alzheimer's where there is no significant loss of neurons, age-related memory loss is due to functional changes in neurons (A Major Cause of Memory Loss, 2013).

Lastly, the research data highlighted the PKA-CREB1-CBP pathway and suggested that the RbAp48 protein partly adjusts its effects through this pathway, which was earlier found to be important for age-related memory loss. Researchers posited that RbAp48 protein and the PKA-CREB1-CBP pathway are suitable targets for therapeutic intervention and may be enhanced to improve age-related hippocampal dysfunction in rodents.

Dementia Among the Young

Memory loss is not only a growing health problem among the elderly as a by-product of old age. The survey done by researchers at Gallup and the University of California, Los Angles found that some lifestyle factors could lead to the early onset of memory loss.

They studied over 18,500 individuals ranging from ages 18 to 99 and proved that memory problems were more prevalent as people aged, however, it also found that the condition is experienced early even by young adults. According to the study, 20% of the respondents had memory issues and that 14% of those who had memory problems were young adults, 22% were middle-aged, and 26%were older (Rivas, 2014).

The lifestyle factors that were highlighted to contribute to memory loss were depression, low educational attainment, physical inactivity, high blood pressure, diabetes, obesity, and smoking. Dr. Gary Small, director of the UCLA Longevity Center, expressed that the study confirmed that these risk factors may also suggest early memory complaints, which are often precursors to more significant memory decline later in life.

Among all the factors identified by the study, it was depression that affected all age groups the most. Because depression is characterized by a severe state of apathy, depressed individuals do not have the energy to take notice and be mindful of all the events surrounding them. This may result in the stagnation of cognitive processes involved in memory processing.

Moreover, a study at Brigham Young University found that people experiencing depression were more likely to see the difference if a set of objects are similar, the same, or different from previous sets of the test (Hadfield, 2013). The participants in the study were put through a computer-aided memory test where they viewed a series of objects on the screen. Each of the participants was asked to respond whether or not they saw the object or something similar to it in the previous test.

The participants with depression did just fine with old and new items but often got it wrong when looking at objects that were similar to something they had seen previously. The most common incorrect answer was that they had seen the object before.

A study also showed that among younger adults, stress could be the more prevalent factor that overwhelms the brain with anxiety and emotion, giving it fewer resources to consolidate memory. Researchers said that this, along with the tendency of millennials to overuse cell phones, may cause memory problems as these youngsters no longer pay much attention to the world beyond their gadgets (Rivas, 2014).

Treatment and Management

Although there is currently no cure for progressive neurodegenerative disorders, other types of dementia can be terminated or reversed with treatment. Normal pressure hydrocephalus, for example, is commonly treated by draining excess cerebrospinal fluid in the brain with a shunt and rerouting it to another part of the body. Cerebral vasculitis, on the other hand, responds to aggressive treatment with immunosuppressive drugs. In other cases, drugs, vitamin deficiencies, alcohol abuse, depression, and brain tumors that cause neurological deficits that resemble dementia respond to treatment (Dementia: Hope Through Research).

Therapies to stop or slow common neurodegenerative diseases such as Alzheimer's disease have largely been unsuccessful, however, there are some drugs that can treat or manage certain symptoms of memory

loss or dementia. Some drugs can temporarily improve or stabilize memory and thinking skills in some people by increasing the activity of the cholinergic brain network. Others prevent declines in learning and memory, while there are drugs that regulate the activity of the neurotransmitter glutamate. Unfortunately, none of these drugs can stop or reverse the course of the disease (Dementia: Hope Through Research).

Ways of Preventing Memory Loss

Prevention is still the best way to fight memory loss. To prevent memory disorders, it is vital to maintaining a healthy body and mind, a wholesome lifestyle, and even beneficial social relationships. The Harvard Health Publications presented strategies on how to preserve one's memory (Preventing memory loss, 2009).

Keep fit with regular exercise. Establishing a good habit of exercise can reduce the risk of illnesses that might affect memory and keep from the likelihood of taking medications that could likewise encroach on memory. Daily exercise is not only beneficial to the physical well-being, but to mental health as well. People who get regular exercise also tend to stay mentally sharp in their 70s and 80s. Because exercise is also good for the lungs, people who exercise have memories and mental acuity that remain strong in old age as a result of excellent lung function. Even illnesses that could entail memory loss, like diabetes high cholesterol, high blood pressure, and stroke, could be prevented with exercise.

Stick to a healthy diet. Having a nutritious diet rich in fruits, vegetables, and good fats from fish, nuts, and whole grains is essential to keeping the body and brain in excellent shape. Fruits and vegetables are reliable sources of antioxidants and nutrients that could protect against diseases and disorders in the body brought by old age. Chances of encountering stroke, including the small undetectable ones that can damage brain function, can be decreased by avoiding foods with saturated fats and trans fats that clog arteries and escalate cholesterol levels. Watching calorie intake also helps maintain a normal weight

and lowers the risk diabetes and hypertension, which can both impair memory.

Consider taking vitamins. Findings from different research studies suggest that some antioxidants might have some benefits in the treatment of age-related memory loss and some forms of dementia. According to experts, antioxidant vitamins, such as vitamins C and E and beta-carotene, neutralize free radicals that destroy healthy tissues in the body, including the brain. This is a possible benefit to memory loss and some types of dementia, but unfortunately, Alzheimer's disease is not included.

Love your lungs. It also pays to take care of the lungs by not smoking. Having healthy lungs is another characteristic of people with good memory during old age. Although studies show that smokers are not able to remember people's names and faces as good as non-smokers do, there is no certainty whether smoking can directly impair memory. The fact is, smoking is associated with memory loss simply because it causes or aggravates illnesses, like depression, stroke, and hypertension, which all contribute to memory loss. Other than damaging the lungs, smoking constricts the blood vessels to the brain, depriving it of oxygen and possibly harming neurons.

Never stop learning. A continuous interest in learning is also a characteristic associated with a good mental function. Experts believe that advanced education may help keep memory strong by getting people into the habit of being mentally active. To be active, lifelong learners, some people take adult education classes or advanced degrees even late in adulthood. Regardless of your level of education, you, too, can be an active, lifelong learner. Reading regularly, keeping up with current affairs, learning a new hobby, and playing challenging games, all exercise the mind, and, therefore, possibly preventing or delaying memory loss.

Ensure a complete, good night's rest. Sleep is essential for memory consolidation as well as overall health. Although people vary widely

in their individual sleep needs, research suggests that six to eight hours of quality sleep a night is ideal.

Cultivate and nourish social relationships. Close ties and social support of relationships can improve the mental performance of older people, especially if these bonds promote self-confidence and motivation. Social support can come from friends, relatives, or caregivers, but to be truly supportive, relationships must make people feel good about themselves.

Fearing the Loss of a Loved-One

Ellen was the single mother of a 12-year-old boy who was hit by a train because his shoe got stuck on the tracks. In the year after her son's death, Ellen had obsessive thoughts and nightmares about the accident. Her depression was intense, and she often thought of suicide. She took a disability leave from work because she could not concentrate nor function well. Anti-depressant drugs and talk therapy did not help and she felt more hopeless and distressed even while it has been 13 months since her son's death. (From the PISTA Stories)

Grief is deep sorrow that commonly results from the death of a loved one, and dealing with it may bring difficult times to any individual. People experience grief in different ways and in varied intensities. Some struggle with their grief and experience prolonged, intense, or problematic reactions. Others are devastated and never regain their psychological equilibrium.

On the other end of the scale are those who emerge from the loss relatively well and perhaps even strengthened. These people have resilience over their loss and do not require special interventions.

Despite being a complex emotion, grief is a natural and normal reaction to a loss of a loved one. When a person is enduring this immeasurable sorrow, he or she naturally experiences thoughts and feelings of anger, sadness, guilt, worry, or fear. Grief is not a finite situation where, after some time, a person expectedly returns to what used to be a normal life. It can change a person forever and even sometimes takes years for healing to take place if this person would ever be able to heal completely at all. People just have to come to terms with the fact that grief brings an array of changes and that they need to adapt to these new situations.

The Work of Mourning

The current popular understanding of grief may be the result of the array of theories that have been formulated over the years to explain

how people cope with grief. One of the most influential of the theories is that of Sigmund Freud, which posits that the main task of mourning is the slow submission to psychological attachment to the deceased (Arkowitz & Lilienfeld, 2011). Freud believed that there is a painful internal struggle as a bereaving person relinquishes the love object. There is an intense yearning for the deceased, yet the person is con-fronted with the reality of a loved one's absence.

Freud introduced the work of mourning, which is the process where ties to the loved one are gradually withdrawn as thoughts and memories are reviewed. At the end of mourning, the bereaved individual is believed to have worked through the loss and to have freed himself or herself from the strong attachment to the unavailable person. Freud maintained that, at the completion of the process, the person in grief reclaims ample energy to invest in new relationships and pursuits.

This idea of people needing to work through grief is pervasive and usually involves expressing feelings about the loss, reviewing memories of the deceased, and finding meaning from the loss (Tatelbaum, 2009). According to this view, those who did not get the chance to explore their emotions will suffer consequences later.

Stage Models of Grief

In Bowlby's Attachment Theory, ideas from psychodynamic thought, the developmental literature on young children's reactions to separation, and work on the mourning behavior of primates are integrated to understand human grief (Bowlby, 1969 and Shaver & Tancredy, 2001). The theory asserts that individuals form instinctive affectional bonds or attachments during normal development—initially between child and parent, and later between adults. Bowlby believed in the key impact of the natural bond between the child and mother or caregiver on subsequent relationships. He proposed that when this bond is threatened, powerful attachment behaviors like crying and angry protest are activated.

Unlike Freud, Bowlby believed that the biological function of these displayed behaviors is not withdrawal but rather a reunion from the

loved one. However, in the case of a permanent loss, the biological function of the security of being close to the attachment figure becomes dysfunctional. As a result, the grieving person also struggles between the contrasting forces of activated attachment behavior and the reality of the loved one's absence.

To deal with these divergent forces, Bowlby maintained that the mourner goes through four stages of grieving, namely: (1) initial numbness, disbelief, or shock; (2) yearning or searching for the lost person; (3) despair and disorganisation as the bereaved gives up the search; and (4) reorganisation or recovery as the loss is accepted and the individual gradually returns to his former interests.

Another popular and probably the most influential is the model developed by Kübler-Ross to explain how dying persons react to their own impending death (Kubler-Ross E., 1969). The model speculates that individuals go through the stages of denial, anger, bargaining, depression, and lastly acceptance in coping with grief. This model has been taught in medical, nursing, and social work schools, and is firmly ingrained among health care professionals (Wortman & Boerner, 2012). Because Kübler-Ross's model also appeared in articles in newspapers and magazines for bereaved persons and families, stage models have strongly influenced the common understanding of grief in our society.

Myths and Other Theories on Grief

However, there are studies that show results contrasting with this stage model. The studies reveal that people's reactions to loss vary considerably from person to person and that only a few people go through the stages in the expected manner (Archer, 1999 and Attig, 1996). It was found that the stages cannot explain the unpredictability of the response that follows a major loss and that the grievers are made to take passive roles. Stage models also fail to consider the social or cultural aspects that influence the process. Moreover, there is a great deal of importance given by stage models on emotional responses to loss compared to the focus on cognition and behaviors.

Finally, stage models tend to pathologize people who do not pass through the stages (Neimeyer, 1998).

Arkowitz and Lilienfeld proposed two big misconceptions on grief. The first is that bereaved people unavoidably experience intense symptoms of distress and depression. The second is that unless the grieving person works through his or her feelings about the loss, delayed grief reactions will surely be experienced in the future (Arkowitz & Lilienfeld, 2011). These reactions may be triggered by events that may or may not be related to the loss, even long after the occurrence of the demise.

A group of psychologists from Columbia University led by George A. Bonanno conducted a prospective study that was published in 2002. The group studied about 1,500 married elderlies over several years (Bonanno & Galatzer-Levy, 2012). During this period, 205 subjects lost a spouse and were tracked continually for 18 months. About half of the subjects unexpectedly experienced no significant depression either before or after the loss. There was also no serious distress displayed by the subjects, although some did feel sad for a short time. Eight percent of the participants were depressed before the loss of their partner and remained the same after the loss. The 10% of the subjects had reported being very unhappy in their marriage and the death of their partner brought relief from their pre-existing depression.

Still, there was some 27% of the subjects whose spouse's death led to depression. Of these individuals, a substantial proportion of about 11% of the total started improving after six months and became symp-tom-free within 18 months. The conditions of the rest of that subgroup did not improve, however, more than 70% of the study's participants neither developed depression nor became more depressed because of their spouse's death. The results of this study show that in losses where an elderly partner is concerned, most people are resilient and do not become seriously depressed or distressed when someone close to them dies.

Integration of Different Theoretical Approaches

More recent models not only focus specifically on bereavement but also attempt to integrate different elements from diverse theoretical approaches into a comprehensive model. These are Bonanno's four-component model (Bonanno & Kaltman, 1999) and the dual-process model (Stroebe & Schut, 1999).

Bonanno wanted to understand the differences in grief among individuals through a conceptually sound and empirically testable framework and identified four principal components of the grieving process. First is the context in which the loss occurs; second is the subjective meanings associated with the loss; third is the changes in the representation of the lost loved one over time, and fourth is the role of coping and emotion regulation processes that can ease or exacerbate the stress of loss.

What makes Bonanno's model different from other models is that it considers the social and functional aspects of emotion. When these aspects are considered, it is possible to predict that recovery is most likely when ill grief-related emotions are regulated or minimized and when affirmative emotions are instigated or enhanced. Although entirely different from the psychodynamic approach, this hypothesis has generated considerable interest and support in recent years (Wortman & Boerner, 2012).

The dual-process model of coping with bereavement, on the other hand, indicates that after a loved one's death, bereaved people alternately cope in two ways: loss-oriented coping and restoration-oriented coping (Stroebe & Schut, 1999). In loss-oriented coping, the bereaved person makes effort to process or resolve some aspects of the loss itself. Meanwhile, restoration-oriented coping involves attempts to adapt to or master the challenges of everyday life, including life situations that may have changed because of the loss.

Stroebe and Schut proposed these coping orientations entail costs that can be minimized by alternating between these two types. According

to them, most people focus mainly on loss-oriented coping at the start of the process. Over time, people shift to a more restoration-oriented coping. With this model, individual differences in coping are better understood.

To give an example, Stroebe and Schut (2001) pointed out that considerable evidence indicates that women tend to be more loss-oriented than men. This leads to a possible explanation for gender differences in responses to loss. One of the most important features of this model is the provision of an alternative view that grief is resolved solely through confrontation with the loss.

The PISTA Method of grief management does not adhere to these different stages and models. It focuses on the emotional healing process of the patient as he or she touches on vital parts of life and works towards self-actualization. The approach recognizes that each patient has his or her own manner of processing their emotions at different phases in life.

How Children Cope with Loss

Children, just like adults, experience loss and grieve. Their grief can be manifested in many ways depending on their age, developmental stage, and life experiences. Unlike adults who withdraw into preoccupation with thoughts of the deceased person, bereaved children often immerse themselves in activities that employ play, drama, art, school work, and stories. They may be sad one minute and then playing outside with friends the next. Families often incorrectly interpret this behavior to mean the child does not really understand or has already gotten over the death (Grief, Bereavement, and Coping, 2014).

In her article “5 Grief Myths about Children and Teens,” Angela Morrow asserts that the idea of children not grieving because they could play is not true and is a myth. Children’s minds protect them from thoughts and feelings that are too powerful for them to handle. According to Morrow, one way to increase the awareness of the unique needs of grieving children and adolescents is to dispel myths like this.

Children's reactions to grief are intermittent because they cannot explore all their thoughts and feelings as rationally as adults can. Additionally, children often have difficulty articulating their feelings about grief. A grieving child's behavior may speak louder than any words he or she could speak. Strong feelings of anger and fear of abandonment or death may be evident in their behavior. Children often play death games as a way of working out feelings and anxieties in a relatively safe setting. These games are familiar to the children and provide safe opportunities to express their feelings (Grief, Bereavement, and Coping, 2014).

Children's Emotional and Behavioral Responses to Loss

Reviews made by Rodie Akerman and June Statham (2014) on childhood bereavement following parental death report that children in grief experience a wide range of emotional and behavioral responses, which may include anxiety, depressive symptoms, fears, outbursts of anger, and regression in developmental milestones (Akerman & Statham, 2014). Other responses also include lower self-esteem and a sense of greater control of events affecting them.

Children have different developmental grief responses as they go through the experience of loss. These young people, including preschool children, are irritable and confused, and they experience bedwetting after the death of a loved one. School-age children become more aggressive, tend to have problems in school, withdraw from friends, and develop sleeping and eating problems. Older children get depressed, do not want to comply, and may have suicidal thoughts.

Akerman and Statham (2014) also reveal that children often experience an increase in anxiety from concerns about further loss, the safety of other family members, and fears about separation. Mild depressive symptoms are frequent and can persist for at least a year (Akerman & Statham, 2014). Some are concerned about being the cause of their loved one's death and if they will also die soon.
Children are anxious about who will take care of them (Grief, Bereavement, and Coping, 2014).

Help for Grieving Children

According to the U.S. Census Bureau, approximately 1.5 million children are living in a single-family household because of the death of one parent. One out of every 20 children aged 15 and younger will suffer the loss of one or both parents. These statistics, however, do not account for the number of children who lost a parental figure, such as a grandparent or other relatives who care for them (Morrow, 2016).

Similarly, the paper prepared by Akerman and Statham showed that among a representative sample of children in Great Britain aged 5 to 16 years, 3.5% had experienced the death of a parent or sibling (Akerman & Statham, 2014). Since many of these children were still young, the likelihood of losing a parent or sibling over the whole of childhood is bound to be higher. These numbers reflect the critical need for adequate support and counseling of bereaved children.

Communication using the correct language may help facilitate and support the grieving process in children. A child's questions should be answered, and the child's processing of the information should be confirmed. Death should be discussed with a child with simple, honest, and direct explanations. Children need to be told the truth in as much detail as his or her age and stage of development can understand. Because they frequently worry that they will also die or that their surviving parent will go away, they also need to be reassured about their own security (Adjustment to Cancer, 2015).

Although death is a difficult conversation to initiate with children, any discussion about it must include proper words like cancer, died, or death. Euphemisms like "he passed away," "he is sleeping," or "we lost him" should never be used because they can confuse children and lead to misinterpretations (Grief, Bereavement, and Coping, 2014).

The good news is that there is a growing awareness of this need to support grieving children. Physicians, nurse practitioners, nurses, social workers, and chaplains recognize the needs of these children. Methods that employ modern means of alleviating grief are being utilized. There are therapists who use music in helping children express

how they feel and cope with the loss. Some use musical instruments, including tuning forks, and ancient instruments like gongs and Tibetan bowls as part of their therapy sessions. Others incorporate bio waves and different sound frequencies in the healing process.

Grief among Adolescents

Adults who experience the death of a loved one often face intense challenges in the grieving process as they learn to cope with denial and isolation, anger, bargaining, and depression (Kubler-Ross E., 1983). Children undergo the same process, but the way they cope and behave is different. Some children regress developmentally, experience psychological and emotional changes, and display alterations to their normal eating and sleeping patterns. Strong emotions, panic, guilt, self-blame, regret, and emptiness are some of the sentiments they may go through. Some even experience declining grades in school (Hilliard, 2001).

Most teens can fully understand the meaning of death in circumstances such as an automobile accident, illness, and even in disasters like calamities. They may seek out friends and family for comfort or may withdraw to deal with their grief. Teens and some younger children with a history of depression, suicidal behavior, and chemical dependency are at a risk for prolonged and serious grief reactions, and they may need more careful attention from home and school during these difficult times.

The confusion and emotional unrest following the loss of a loved one can be a difficult experience to process and can be even more challenging for a child. The death of a parent during childhood or adolescence sets confusing emotions and shakes the stability of their well-being, family, current and future relationships, and other aspects of their lives. These may provoke fears of the unknown and result in an extraordinary amount of anxiety (Kuehn, 2013).

During bereavement, individuals undergo a reconciliation process where they learn to accept the loss as a real event, fully experience the

pain of that event, adjust to life without the loved one, transition from thinking of the lost person as a present participant in their life to a memory, and find meaning from the passing.

Because of the trauma and a naive understanding of death, it is harder for children to complete the reconciliation process. It is also important to note that not all children experience this kind of complicated bereavement upon the death of a parent. There are children who can go through basic, uncomplicated grief, experience few trauma responses and suffer few disapproving impacts in their emotional development (Kuehn, 2013).

Grief among adolescents, like adults, is to be properly managed. If not amply guided, an adolescent's grief can escalate into a destructive course with consequences that could affect every aspect of well-being, including physical, mental, and social. No matter the length of time the young adult might be suffering, the effects of grief can be debilitating if not treated or addressed professionally. Understanding how grief may affect distinct aspects of life can encourage adolescents to get the help they need and deserve.

Unfortunately, lack of communication skills makes the verbalization of demise and coping with grief difficult. This is where symbolic or non-verbal alternatives for expression play an important role in the treatment of grief in children and even adolescents (Hilliard, 2001). Some of the alternatives that successfully helped bereaved adolescents understand loss and express emotions include the use of play, storytelling, and art.

Music therapy is also a powerful tool for improving condition and has been used successfully in developmentally delayed children, behaviorally handicapped children in public schools, and in the treatment of children with attention deficit disorder. Music therapy also effectively improved the emotional health in elementary schools, homeless shelters, and health centers.

The PISTA programs empower the adolescents with their connection to music which facilitates self-expression and emotional control. Ado-

lescents experience a sense of freedom, which they all desire, in contrast to feeling lost. By using powerful emotions, such as freedom and sense of loss, PISTA draws a roadmap of life stages and creates a book of self. The programs help them adapt and find images of the most relevant events from their past. Images connect music and body movements to create hope and enjoyment to the adolescent PISTA user.

Mourning in Adulthood

In his book Attachment Theory, Bowlby described the process of mourning by adults using the studies made by Parkes and Glick and Weiss on adult widow and widowers (Bowlby, 1980). The four phases identified in the studies are numbing, yearning and searching, disorganisation and despair, and greater or less degree of disorganisation. Bowlby explained that these phases are not clear-cut and that an individual may advance or regress between any two of them.

The immediate reaction of adults to a spouse's death varies greatly. It could be shock, rejection, or anger. During the numbing phase, a widow may carry on with a normal life almost automatically and may suddenly be broken with an outburst of intense emotion. Some grieving adults experience overwhelming attacks of panic and seek refuge from friends. Widows may occasionally feel sudden elation from the thought of reuniting with her dead husband (Bowlby, Attachment and Loss: Loss Sadness and Depression, 1980).

The phase or yearning and searching for the lost loved one is common and happens when the bereaved alternately shifts between believing and disbelieving that death has occurred while experiencing pain and hopeless yearning. Disbelief may be accompanied by hope and an urge to search for and recover the lost person. Anger is triggered both by the person or event deemed responsible for the loss, as well as by the frustration of unsuccessful search (Bowlby, Attachment and Loss: Loss Sadness and Depression, 1980).

The experience of grief varies among individuals. Some give in to the impulse to search while others choose to stifle the urge regarding it as irrational and absurd. According to Bowlby, regardless of one's attitude towards the urge, bereaved individuals are nonetheless impelled to search and to recover the person who has gone.

Parkes took interest in Bowlby's hypothesis and asserted:

> *"Although we tend to think of searching in terms of the motor act of restless movement towards possible locations of the lost object, [searching] also has perceptual and ideational components… Signs of the object can be identified only by reference to memories of the object as it was. Searching the external world for signs of the object, therefore, includes the establishment of an internal perceptual set de-rived from previous experiences of the object."*

Parkes further explained that this searching behavior is observed in both men and women (Bowlby, Attachment and Loss: Loss Sadness and Depression, 1980).

Once a mourning person can endure the pining, searching, perpetual questioning of the loss, and anger, and then he or she can gradually acknowledge and accept the truth and permanence of the loss and becomes aware of the need for change. This phase of disorganisation, despair, and reorganisation is when the person identifies old patterns of behavior that must be dismantled.

Bowlby explained that because it is necessary to shed old patterns—i.e., ways of thinking, feeling, and acting—before new ones can be formed, the bereaved person will most likely lose hope and fall into depression and apathy. Fortunately, if recovery goes well, the bereaved may soon begin to progress to a phase where he or she starts to find himself or herself in the new situation and to consider ways of living in it. This entails a redefinition of the self and the situation.

The adults in the studies also showed the persistence of the relationship with the lost loved one even until they no longer feel the confusion of hope and disappointment, search and frustration, and anger and blame that they used to feel. This may take a few weeks to become firmly established and then persists with its original intensity.

Dreaming of the spouse still being alive reportedly occur in about half of widows and widowers in the studies. The dreams are extremely vivid and realistic and are described by the majority as comforting. The people also found themselves doing things in the same way that the lost person did them. Some did the activities that the dead typically performed despite their having never done them before.

Unhealthy Mourning

Bowlby suggested that the urge to search and to recover among bereaved people undergoing healthy mourning is often intense in the early weeks and months and slowly diminishes over time. This experience, if short-lived, is compatible with healthy mourning. It is important to remember, though, how Bowlby emphasized that this experience varies greatly from person to person. Even those going through healthy mourning have a continuing sense of the dead person's presence, either as a constant companion or in some specific and appropriate location.

Disordered mourning, on the other hand, leads to many forms of ill physical and mental health (Parkes, 1970 (B)). A bereaved person's capacity to organise life and to establish and maintain love relationships may become impaired or get worse if already impaired.

In a study of London widows, Parkes established that the criterion that most clearly distinguishes healthy forms of mourning from pathological is the length of time that grief continues to persist and the extent of its partial influence or complete domination of mental functioning (Parkes, 1970 (A)). Mourning is healthy when it takes control only episodically. In contrast, mourning is no longer healthy if it becomes rigidly established and lead to a prolonged inhibition of all the normal responses to loss.

Symptoms of disordered mourning can be observed as a deviation from the normal progress along the normal grief process. An example of maldevelopment is when a bereaved person feels a continuing compulsion to imitate the dead person despite having neither the

competence nor the desire to do so. Another is when the person's continuing sense of containing the deceased results to an elated state of mind or leads the person to develop the symptoms of the deceased's last illness (Parkes, 1972).

Another sign of unfavorable development is when the grieving person locates the lost loved one within another person, or even within an animal or a physical object. This behavior that Bowlby called mislocation, if persistent, easily leads to actions that are not in the best interests of the bereaved. It may also bring damage to another person if a child, for example, is regarded as the incarnation of the dead person.

Chronic mourning is characterized by depression that often combines or alternates with anxiety. At first, there is a prolonged absence of conscious grieving. Life for the grieving person seems to continue normally as before. However, the person is quickly troubled with a variety of psychological or physiological ailments and may suddenly become acutely depressed.

Parkes found similar characteristics of chronic mourning in his study. Some individuals who subsequently develop chronic mourning show little or no response during the weeks immediately after their loss. Mourning will start abruptly within a month or two and could be more intense and disruptive than in healthy mourning (Parkes, 1970 (B)).

Anger and resentment persisting long after the early weeks is another symptom of chronic mourning. Parkes correlated this with the persistence of tension, restlessness, and intense yearning (Parkes, 1972). For example, Mrs. J, a 60-year-old widow whose husband died of cancer nine months before the interview was held. When reminded of her husband's death, Mrs. J burst out in anger asking why her hus-band left her and how she wished he would have known her grief. Later, she denied her anger and remarked that it is wicked to be angry.
Three months later, on the anniversary of her husband's death, she recalled every moment of the unhappy day.

Guided Mourning among Adults

The studies already mentioned all show that mourning process is complicated and some of the bereaved may get stuck and fail to return to normal life. Hefren and Thyer (2012) reviewed seven studies including adults who were intellectually healthy but had suffered the loss of a loved one because of natural illness or violent circumstances (i.e., homicide, suicide, fatal accident). One of their study's recommendations is that practitioners need to be aware of effective interventions in addressing complicated mourning. According to Hefren and Thyer, guided mourning can be effective in helping an adult move through the mourning process. They emphasized, however, that the practitioner must understand the mourning process and what prevents the bereaved from progressing through the process of grief (Hefren & Thyer, 2012).

Guided mourning addresses two issues: the possible role of family and friends in perpetuating grief and exposure to stimuli that evoke and mildly upset grief (Rando, 1993). It works in the same manner that exposure therapy is thought to work on post-traumatic stress disorder. Prolonged exposure to external and internal stimuli, like photographs or memories of the loved one, evoke grief reactions that speeds up the grieving process in such a way that normal psychosocial functions are restored (Hefren & Thyer, 2012).

According to Hefren and Thyer, guided mourning may be appropriate if grief is being avoided, repressed, or delayed. It is not effective if patients express their grief in self-punitive ways or as an excuse to avoid developing a new lifestyle.

Clients of guided mourning, according to Sireling et al. (1988), are encouraged to expose themselves repeatedly to avoided cognitive, affective and behavioral stimuli to bereavement. On the other hand, clients of anti-exposure therapy are encouraged to get on with living, not to think about the loss, and to think about the future rather than dwell on the past (Sireling et al., 1988 p. 123).

Fear Reduction Therapies

There are many handy tips for reducing fear. These include taking timeouts, welcoming the worst, not expecting perfection, visualization, exposure to the fear, or talking about the fear with a general practitioner.

There is also a variety of therapies that help manage fear. A considerable amount of evidence suggests that treatments that have successfully improved anxiety disorders involved some form of systematic exposure to the feared stimulus (Marks, 1973). Fear reduction by exposure or exposure therapy is a specific type of cognitive-behavioral psychotherapy technique, which is intended to help the patient face and gain control of the fear and distress that was overwhelming in the trauma. It is a technique wherein there is a decrease in an individual's response to cues to which he or she is repeatedly exposed to, specifically if subject to prolonged periods.

Exposure therapy must be done very carefully so as not to re-traumatize the patient. In some cases, trauma memories can be confronted all at the same time (flooding), while other cases are best worked on gradually starting from the least upsetting experiences up to the most severe trauma using relaxation techniques, one memory at a time.

In many randomized controlled trials (RCTs), treatments that lacked exposure were ineffective (e.g. relaxation, modeling without exposure, encouraging avoidance, reassurance), while the efficacy of exposure variants was unimpaired when non-exposure elements, such as relaxation, were omitted (Marks & Dar, 2000). However, there are also studies that reveal the shortcomings of the exposure therapy and several studies providing converging evidence that show non-exposure methods reduced fear in many cases.

Another method, called memory or emotion therapy, diminishes emotional responsiveness to an aversive recollection or a past event after repeated exposure to it. This therapy resembles a person's anxiety response (that is, tensing of muscles, feeling of discomfort, uptightness)

to the real situation. is successful when the images and recollections do not evoke anxiety anymore. If the individual feels entirely comfortable and relaxed when thinking of the target behavior, the image or thought of the real-life target, the situation will progress with less anxiety. Patients who have experienced memory therapy have proven this method effective.

PISTA Therapy for Fear

PISTA Therapy incorporates some elements of exposure and memory therapy approaches in helping individuals fight off fear. It engages the patient in an indirect exposure to the fear-inducing event or memory using stimuli to help the individual re-live the experience and slowly arrive at self-actualization and learning. Each session takes the patient back to the exact experience along with their fear, even pain or anxiety, and later comes out of the session feeling better and relieved.

The PISTA method aims to remove the fear response of a phobia with the help of a PISTA therapist. Patients are given a PISTA treatment guideline and an assigned brainwave frequency that will help patients to bring past events to the present moment.

With the right brainwave frequency, patients will have the emotional response that corresponds to the past event. This process lasts for 20 minutes during which patient will successfully separate the fear that comes with the recalled event and observe that his fear has slowly subsided.

When the patient returns for a follow-up session two weeks after, the PISTA therapist makes an assessment and measures the treatment's success based on the results that the patients achieved. In general, the fear and discomfort that the patient experienced with an image or memory is no longer a problem. If, for example, an individual has a significant fear of heights, flying, or leaving the home, PISTA could help him or her gradually increase tolerance and management of fear.

Stress Management

A 25-year-old female patient with bipolar disorder exhibited recurring manic behavior for three years. After seeking professional help, she was officially diagnosed with Post Traumatic Stress Disorder (PTSD) using the DSM-IV criteria. Her score, which was 52 on the Clinician-administered PTSD scale, showed that she has a moderate level of PTSD. This condition was attributed to the patient's unfortunate experience of being raped 10 years beforehand.

The patient underwent 10 sessions of PISTA Therapy for 4 weeks after hospitalization and maintained taking anti-manic medications. She continued using the PISTA method afterwards as an outpatient. This resulted in the complete resolution of her PTSD case and showed a CAPS score of 7.

One year later, the patient remained in complete remission for PTSD and con-tinued outpatient treatment for bipolar disorder.

(From the PISTA Stories)

Stress is the physiological demand placed on the body when one must adapt, cope, or adjust to situations (Turner, 2012). It produces emotional and mental pressure that results in feelings like worry, anxiety, fear, anger, extreme enthusiasm, and excessive energy, to which the body responds quickly and inefficiently.

People experience changes in life and encounter different life situations that may trigger stress. These include major life events, trauma, and abuse, and are sometimes related to the environment in the home, workplace, or neighborhood (McEwen, 1998).

Psychological stress can result in a variety of physical symptoms and diseases. According to the medical research of the Centers for Disease Control and Prevention, up to 90% of all illnesses and diseases are related to stress (Burrows, 2006). Findings show that stress contributes to the development of heart disease and high blood pressure. This is the reason most heart programs nowadays integrate stress management in the prevention of cardiovascular diseases.

Skin doctors have also found that hives, eczema, and other skin conditions are likewise stress-related. Even common pains like headaches,

backaches, stomachaches, and diarrhea, including loss of sleep and sex drive, are triggered by stress. A person under a lot of pressure may have a weaker immune system and is more susceptible to infections (Burrows, 2006).

Ironically, stress is induced not only by unpleasant, wearisome happenings and situations, but also by joyful life events like getting married, starting a new job, or being pregnant. In fact, stress naturally protects people from danger by training the body to react quickly during situations that elicit a fight-or-flight response. Unfortunately, the fast-paced lifestyle of today triggers this response more often and constantly even without impending peril. This sometimes leads to chronic exposure to stress hormones that can damage the body (Cooper, 2013).

Chronic stress from growing minor, day-to-day stresses and acute stress resulting from major life events or fight-or-flight situations can both have unhelpful consequences in the long-term. An unhealthy diet and the use of tobacco and alcohol can make these adverse effects worse, while moderate exercising can help prevent these harmful consequences (McEwen, 1998). Stress-reduction strategies, like meditation and relaxation, have also been shown to help reverse the harmful effects by increasing the number of infection-fighting T cells and feel-good chemicals called endorphins in the body (Burrows, 2006).

Different Strokes for Different Folks

Not all kinds of stress are unconstructive. Some facilitate learning and emotional growth and help individuals reach their goals (Cohen & Helquist, 2010). The reason for this is that the perception of stress is subjective and highly individualised. According to Berkeley psychologist Richard Lazarus, a situation is stressful only if the person in the circumstance perceives it that way. A situation that one person considers threatening may be taken by another as something challenging (Whitbourne, 2016).

Managing large data on customer website behavior, for example, may be viewed as a gargantuan task by an analyst. However, another analyst may have a passion to tackle all those website data in an efficient way and may even consider the task as a confirmation of his or her value to the company. This means that stressful events and situations and what these do to individuals do not matter. Of importance is how individuals react to what these events turn them into (Burrows, 2006).

Every person reacts to stress differently. The way a person responds to a potentially stressful situation is determined by the way he or she perceives an event and his or her general state of physical health at the time of the occurrence. A person's physical condition is a product of genetic factors, including behavioral and lifestyle choices. His or her perception of a situation will determine behavioral response to either fight or flee, and physiologic response to stay calm or experience heart palpitations and elevated cortisol levels (McEwen, 1998).

The way a person perceives a situation also determines his or her ability to adjust or habituate to repeated stress. Public speaking, for example, is a situation that commonly triggers discomfort in many people. The discomfort arises when the HPA axis is activated upon the presentation of the challenge to speak in public. However, as a person repeats this activity and as he or she becomes familiar with it, cortisol secretion stops increasing every time the situation presents itself (McEwen, 1998).

Childhood Stress

Peter held his ground and refused to take his seat on the plane. His were arms crossed as he rocked back and forth the aisle. His mother firmly told him to sit down and a group of piqued passengers looked on.

He stomped his feet and continued ranting about wanting to watch television. "For the last time, Peter, sit down or else!" threatened his father, who picked him up and tried to secure him in his seat.

Peter responded by letting out a loud wail of protest and struggled to free him-self. His younger sibling began to cry as his mother begged him to stop his tirade. Then his father declares that Peter had lost all his video game privileges.

The flight attendant approached them and called out, "Is there a problem here?"

(Luband, 2013)

Children also naturally experience stress, as it is a normal part of the growing up process (Zolten & Long, 2006). Any situation that requires children to adapt or change may cause stress and bring anxiety about various things at different ages.

Separation anxiety, for example, is commonly experienced among young children from eight months to three years, especially when separated from their parents or caregivers. Fears and phobias often develop among pre-school children who start to dread some animals and insects. They get alarmed at the sight of water or blood, when staying in high places, or when experiencing thunderstorms. Many children also feel anxious when going to a new school or right before tests and exams. Others get shy in social situations. These are all normal stages in children's development and stop gradually as children grow older (NHS Choices, 2014).

According to Susan Kaiser Greenland, author of The Mindful Child, kids recognise stress and express feelings of being under stress as early as first grade. However, the effects and symptoms of stress can already be observed even in pre-school children (The Huffington Post, 2013).

A study cited by Bryner in 2012 showed how children under high levels of stress do not perform at par with other kids on spatial memory tests (Bryner, 2012). Another study showed that marital conflict of parents is a significant source of stress that may impair cognitive development among children (The Huffington Post, 2013). Greenland also explained that one of the reasons children feel stressed out is that their parents are under stress themselves. In this situation, younger children are more likely to pick up on the stress or the affect of the parent.

Other major stress triggers for children are pain, injury, and illness. Sometimes, even medical treatments lead to greater stress. Parental divorce, financial crisis, and death of a loved one also bring severe stress (Kaneshiro, 2014).

Children's responses to stress are learned from what they have seen and experienced in the past. The issues that bring anxiety to children may seem trivial to adults, but because these very young people have little experiences to learn from, situations that require minor changes can have an enormous impact on their feelings of safety and security (Kaneshiro, 2014).

Moreover, children have not yet learned effective ways to cope with stress, so they are more vulnerable to stress than adults. This makes it important for parents to begin helping their children acquire the necessary skills for dealing with stress early. These skills are very useful not only throughout children's growing years but as well into adulthood (Zolten & Long, 2006).

How to Help Children Cope

Being attentive to unconstructive changes in behavior helps parents recognise signs of stress that their children experience. Because young people, especially younger children, may find it hard to understand and express their experience of stress, their difficult condition may be manifested through changes in their behavior. Children become irritable and moody; they withdraw from activities that usually give enjoyment. Worries and complaints about school are expressed

more often. They cry, exhibit fear, and may eat and sleep too much or too little. These signs of harmful behavior are not always linked to excessive stress but are almost always clear cues that something is wrong (American Psychological Association, 2016).

To help children cope with stress, parents should encourage them to face their fears because dodging stress does not remove tension. When a child is allowed to face fear, he or she will learn that the anxiety slowly goes away naturally on its own because the body cannot remain anxious for a very long period of time. There is a system in the body that automatically calms it down and reduces anxiety within 20 to 45 minutes (Przeworski, 2013).

Preparing children for potentially stressful situations also helps them deal with challenging situations better. It is good to keep them informed of necessary and anticipated changes, such as parents changing jobs or the family moving (Kaneshiro, 2014). Parents could also develop an awareness of real scenarios and events that may be stressful for children. These include new experiences, fear of unpredictable outcomes, unpleasant sensations, unmet needs or desires, and loss (Kaneshiro, 2014).

Parents should also provide an environment with open communication and be available to listen when their children need to talk. Discussing situations that bring pressure to both child and parent creates increased awareness in children that stress is normal and manageable. If a child has a conflict with a friend in school, for example, parent and child could imagine having a conversation with the friend and practice a sample conversation that attempts to resolve differences. Parents should let children know that they understand the difficult time their children are having. A warm and supportive relationship between a parent and child is one of the best predictors of how well children cope with stressful situations during childhood (Zolten & Long, 2006).

It is likewise important for parents to encourage children to work hard, but also equally important is to accept and embrace mistakes

and imperfections. Hard work is most worthy, but it is perfectly okay to be imperfect (Przeworski, 2013). Parents should help children build their self-esteem and confidence in working out problems. They can delegate responsibilities to children, allow them to make decisions at an early age, and facilitate their discovery of interests in which they can succeed (Zolten & Long, 2006). Using constructive encouragement, affection, and reward instead of punishment build a child's self-worth despite imperfections (Kaneshiro, 2014).

Ample rest and a healthy diet also help children cope with stress by providing the energy needed to overcome their problems. Engaging in physical and relaxing activities, like playing with toys, sports, painting, having tea parties, or just being silly, have the same positive effect. Because children need predictability in their lives, a consistent schedule for meals, homework, bedtime, and activities sets their expectations, gives a sense of security, and consequently reduces stress (Zolten & Long, 2006).

Lastly, parents should model the appropriate coping skills. Because they learn from observing their parents, children are more likely to use appropriate skills for dealing with stress when they see their parents using them. Parents should try to demonstrate that stress is normal and can be dealt with in a calm yet effective manner (Zolten & Long, 2006).

Teens Under Pressure

Emma was tall and looked older than a normal 14-year-old middle school student. According to her mother, she used to be a fine, intelligent, and optimistic child who loved to spend time with her friends. She was a leader and a jokester among her peers. Everyone liked her until her father quit his stable job and started a small business that sent her family into a financial crisis. Their family situation got worse when her father had an extramarital affair and ran away with his mistress. The rest of her family moved into a small apartment in a satellite city, and she had to move to a new school. This series of stressful events put her in a state of depression and made her have suicidal thoughts. (From the PISTA Stories)

Teenagers, like adults and children, may experience stress everyday especially since most of them still do not have the resources for coping yet. Because teens are already experiencing imbalance from the many changes brought by puberty, managing stress could be very challenging for them.

According to a survey, 43% of 13 to 14-year-olds experience stress every day. By ages 15 to 17 years, 59% of the surveyed participants reported daily stress. The pressure that teens experience includes the difficulty in trying to fit in and be successful within their peer groups. Jobs and family economics were also identified triggers of stress among this age group, as nearly two-thirds of the participants expressed concern about their personal finances (Helping Teens Cope with Stress, 2009).

For Paul Stallard, Professor of Child and Family Mental Health at the University of Bath, the good opinion of the peers is essential to teenaged youth. These teens fear being ridiculed or unaccepted by their peers for being different or for not liking the same music or clothes. In this light, teenagers may be more likely to suffer social anxiety than the other age groups. Thus, they avoid social gatherings or come up with excuses to get out of these events (Anxiety in Children, 2014).

Other sources of stress among teens might include school demands and frustrations, lack of self-esteem and acceptance of themselves and their looks, changes in their bodies, and issues with friends. Still, others are changes brought by illness, separation or divorce of parents, moving or changing schools, or death of a loved one (Stress Management and Teens, 2013).

Keeping Teens Cool under Stress

Confiding and spending more time with friends than with the family is normal among growing teens. However, abandoning old friendships for a new set of peers, avoiding parents, or displaying excessive resentment towards family members may signal that the teen is experiencing a considerable amount of stress (Identifying Signs of Stress in Your Children and Teens, 2017).

Tuning in to the words and statements used by teen-aged children helps reveal signs of anxiety. They may express feelings of stress by saying disapproving things about themselves and their environment. Examples of these are “No one likes me” or “I’m stupid” (Identifying Signs of Stress in Your Children and Teens, 2017). Teens may find their own ways of coping with tension when stress becomes greatly unmanageable for them, especially when guidance from parents is not accessible. Unfortunately, the coping mechanisms they resort to may involve unhealthy behaviors such as drinking, smoking, using prohibited drugs, and engaging in other risky activities.

Parents can help teens manage stress and work on some healthy, productive coping strategies. Attentiveness to the needs and behavior of their teen-aged child helps detect early signs of tension. Parents need to make sure that the child gets adequate rest and proper nutrition. A teenager may show signs that his or her needs are unmet through the display of chronic moodiness, irritability, anxiety, and long bouts of sadness. A teenage daughter who is under stress may obsess about her looks or weight.

Having teens talk about their problems and pressures is a way to help them get relief from tension. Parents can also introduce healthy, en-

couraging coping strategies like exercising, listening to music, writing in a journal, and, possibly, asking help from a counselor. It is always a good idea to remind teenagers of their accomplishments.

Parents should also be mindful of their own behaviors and reactions to stress to be able to set a good example for their teen-aged children. Like younger children, teenagers often pick up their coping strategies by watching their parents. If a child sees parents drink an alcoholic beverage or smoke a cigarette every time they are overwhelmed, he or she is more likely to follow the same behavior.

On their own, teens can decrease their stress by learning and performing soothing exercises like abdominal breathing and muscle relaxation techniques. Teens should always remember that they are good and beautiful in their own skin. It helps to give themselves a pat on the back upon accomplishing a task no matter how seemingly small the accomplishment is, rather than demanding perfection from one's self and others. Pessimistic talk does not help. Young people should replace disapproving thoughts about themselves with alternative neutral or constructive thoughts. Instead of saying, "My life will never get better," they should say something like, "This is making me feel really hopeless now, but I'm sure that if I keep myself together, things will get better soon" (Helping Teens Cope with Stress, 2009).

Teens could also develop assertiveness and learn how to express feelings politely and firmly, but not in aggressive or passive ways. An example is to say, "I feel angry when you yell at me" and "Please stop yelling." Choice of friends is critical in developing teens' personalities and is also helpful when dealing with stress. Having a network of good friends who support and understand helps teenagers cope in an encouraging way.

Stress Management in Adults

Recent statistics from the American Psychological Association's Stress in America survey (2012) indicated that 39% of Americans reported increased stress levels over the previous year. Only 29% of the participants reported that they were doing an excellent or very good job at managing stress. According to the survey, the top sources of stress include money, work, economy, relationships, and family responsibilities. Others are family's health, personal health, job stability, housing, and personal safety (Turner, 2012).

The study also examined stress among ethnic minority groups with an assumption that additional burdens may increase stress. It found that perceived discrimination, racism, socio-economic status, acculturation, and family stress are factors to more chronic stress among racial and ethnic minorities (Stress in America Survey, 2012). Some signs of stress are tiredness or fatigue, difficulty in concentration, irritability or having short temper, and poor appetite. These signs are in combi-nation with unhealthy coping habits like smoking, drinking alcohol, and eating disorders (Turner, 2012).

Some adults respond to stress by quitting and withdrawing from the life problem they are facing. This response, known as learned helplessness, is a passive behavior produced by exposure to unavoidable, aversive events (Weiten, 2008). People who believe they have no control over events often display learned helplessness. Others blame themselves in response to stress, which, unfortunately, could lead to depressive disorders.

Venting stress is one of the common ways, which adults believe is a productive way of responding to stress. However, venting has been shown to increase and fuel anger. Some adults indulge as an attempt to reduce stress and end up developing unwise patterns like overeating, drinking, smoking, using drugs, and spending money (Weiten, 2008).

Still, others use defensive coping to protect themselves from the unpleasant emotions brought by stress. Defense coping offers adults a

way to avoid taxing situations by distorting reality to decrease or mask the experience of threat. Distortion of reality can be helpful on a low-level, but extreme or excessive distortion of reality is maladaptive (Weiten, 2008).

Transforming Stress into Challenge

Constructive methods of managing stress among adults include analyzing stress from a realistic point of view, confronting the problem directly, identifying unhelpful responses, and making efforts to reduce stress. Berkeley psychologist Richard Lazarus, in collaboration with Susan Folkman of the University of San Francisco, proposed that adults deal with stress in two ways. First is problem-focused coping where the threat felt is directly addressed by changing the situation, and the second is emotion-focused coping where a person deals with the threat by trying to feel comfortable or better about the situation.

The first approach is used when a person can change the situation, while the second is used when there is nothing that can be done to change the circumstance. According to Lazarus and Folkman, the best approach is whichever helps reduce an individual's stress successfully (Whitbourne, 2016).

Psychologists from the University of Connecticut, Kristen Riley and Crystal Park, provided insight on how people can transform the feeling of being besieged by problems into useful action that helps people convert threat into a challenge. Riley and Park studied the possibility that by redefining a threat as a challenge, a person can do a better job of feeling better (Riley & Park, 2014). They called this type of coping meaning-focused wherein a person changes the way he or she perceives a stressful situation and finds in it an opportunity for growth. In this way, the issue is processed more confidently by the individual and is no longer a source of stress (Whitbourne, 2016).

To cope with stress, people need to first understand the pressure they are experiencing. It is important to identify the situations that usually trigger stress. These circumstances may be related to children, family,

health, financial decisions, work, relationships, or something else. Healthy ways of managing stress, like exercising, spending time with family or friends, writing, and listening to music, should be practiced. Attending to one's own needs by eating well, getting enough rest, and making time for one's self by reading a favorite book or spending time on an enjoyable hobby helps manage stress (Turner, 2012).

Laura Markham, Ph.D. recommends counting one's blessings and cul-tivating optimism. According to research, adding up the things one should be grateful for at every onset of stress symptoms helps create an affirmative note that reduces stress, improves health, and spurs happiness (Markham, 2016). Rediscovering a person's inspiration brings spirit to life. A simple walk in the park or gazing at stars allows people to reconnect with themselves and the wonders of life that make it worth living (Markham, 2016).

Reaching out for support, instead of holding stress within, can help decrease stress. Even though talking about one's life problems to oth-ers is difficult, accepting support from friends and family improves one's ability to manage stress. Consultation with a health professional for guided stress management is recommended if a person continues to feel overwhelmed by stress (Turner, 2012).

Coping with Stress during Late Life

Because older people are often coping with chronic illness and disa-bility, the later years of life is thought of as a time of great and often uncontrollable stress (Rodin, 1986). Older adults have lost friends and family members, and are faced with their own impending mortality. However, there are studies that belie this thought and found that the elderly report fewer stressful life events than the young (Paykel, 1983).

According to the study of Carolyn Aldwin from the Department of Human and Community Development, University of California, most adult life events, like marriage, divorce, starting new jobs, or having children, are more relevant to younger adults. The events more relevant to older adults, like retirement and divorce of children, were

reported to reflect a few differences in age (Aldwin C., 1990). Older people experience the same number of life events, but the experience of the reported event may vary across life stages (Murrell, Norris, & Hutchins, 1984).

Aldwin, joined by Sutton, Chiara, and Spiro from the Department of Veterans Affairs Outpatient Clinic in Boston, studied these thoughts and attempted to identify the possible differences in how stress is appraised and coped by different adult age groups. According to their study, the elderly often appears to report fewer pessimistic emotions than younger individuals. One of the factors thought to contribute to this finding is that the decrease in the number of roles performed by the elderly may result in fewer strains in an older adult's life. An example is when active parenting has been handed over to children who have become adult parents themselves (Aldwin, Sutton, Chiara, & Spiro, 1996).

Aldwin et al. also speculated on developmental reasons that may lead to the appraisal of problems by older adults as less stressful. They found that because of their greater range of experience, older adults may have developed more coping resources and thus consider problems as less taxing. This and the fact that older adults have already experienced extremely stressful events, like the death of loved ones, can make everyday problems relatively easier to handle. On the other hand, the decrease in energy late in life may turn problems more stressful for them (Aldwin et al., 1996).

Another possible factor for age differences accounting to reported stress is the possibility that older individuals cope differently than younger adults. Theorists speculate that coping methods change with age. Gutmann (1974) suggested that the manner of handling tension by adults shift from active to passive from youth to midlife, then to magical mastery in late life. Meanwhile, Vaillant (1977) proposed a decrease in the use of immature, defensive styles and an increase in more mature, defensive approaches in midlife. Others have suggested that there is no systematic change in coping methods as one ages,

except when the situation calls for a change (Folkman, Lazarus, Pimley, & Novacek, 1987).

Aldwin et al. presented and studied more thoughts, but they summarised by saying that there are age-related changes in social roles and health status, which affect the coping mechanisms of people across age groups and the numbers and types of strains experienced. However, reporting biases or developmental processes make it difficult to identify why the elderly report less stress despite increasing disabilities and loss of family and friends as they age. Their study concluded by saying that studies generally have not identified many age-related changes in coping with stress, possibly except for a decrease in escapism (Aldwin et al., 1996).

How PISTA Helps Deal with Energy and Stress

Many people believe that stress is triggered by factors like the environment, life events, responsibilities, and the workplace. While this may be true for different cases, PISTA Therapy shows that most of the people's experiences with stress are generated in their own minds. People think of being under stress because of they have the idea of having a lot to deal with.

During stressful situations, the body generates the energy that it needs to accomplish all perceived tasks. People feel burned out only because they do not know how to manage the energy that their body has pre-pared for consumption. PISTA teaches that one does not need to have control over the external triggers to manage stress. With the PISTA method, staying in control during a stressful situation only requires a learned understanding of the self.

Studies reveal that the body is continuously in a cycle of high and low energy states (Schwartz, 1994). When in a low energy state, a person's impulse is to perk up with a cup of coffee, to give in to a salty or sweet craving, or to just carry on and keep pushing himself to complete a task despite fatigue. Doing this eventually leads to burnout. The brain also starts to feel work imbalance as most tasks are done by the prefrontal cortex.

PISTA Therapy helps regain balance by easing the tension that has built in the body. Less or no tension allows the body to readily open up and receive a fresh charge of energy. After the body and brain have recharged, the mind is refreshed and becomes receptive to new innovative ideas and resolutions.

For example, an employee who woke up late in the morning and on the wrong side of the bed might think that his scheduled presentation later in the day will fail because of the bad start that he had. This mentality makes him worry unnecessarily and overworks his thinking brain. Consequently, his brain goes on panic mode and puts his body in a state of alarm. His body's natural balance is lost, and he just might fail his presentation as he had depressingly projected.

On the other hand, an employee who calmly controls his mind in the same situation prevents his body from getting into a state of panic. He quiets his thoughts and is able to control how his mind will react to the bad start of his day. Because he can keep his body's natural balance, he delivers his presentation successfully. This is exactly what PISTA Therapy helps individuals achieve – control of the mind and an integrated and well-balanced mind and body.

As discussed in Part II, the human body is run by energy in the form of bioelectricity sent by the brain through the nervous system. These brain vibrations initiate and facilitate biological processes and muscle movement. PISTA Therapy teaches individuals how to manage this energy and how to channel it to the various parts of the body for healing and improved body function. PISTA users learn that stress is simply energy that is not properly managed. They know that inability to manage this energy will make them lose their body's natural balance. With the help of PISTA Therapy, they have learned how to channel energy and send constructive communication or signals to different areas of their body.

Because the human body has a natural healing ability, PISTA Therapy sends affirmative energy directly to body cells where healing starts.

The brain and body are synchronized. The cells' natural healing process is initiated.

Even control over emotions on different stressful life events is achieved with the practice of PISTA Therapy. The mind creates new constructive thought patterns that allow for an efficient flow of energy throughout the body. And because quantum physics explains that the universe is made up of energy, affirmative energy generated from within the body is emanated outward and toward one's goals and surroundings. Consequently, this constructive energy is bounced back to the body in the form of affirmative emotions, achieved goals, and healing.

Part IV: Successful PISTA Stories

Challenges are a normal part of people's lives. They vary across different life stages and bring fear that manifests in diverse ways and in various intensities. These fears put people in a cage. Over time, people get so used to being trapped in the cage of their fears that they begin to forget how good it is to be out of their confinement. They give up and continue living imprisoned with their fears, enduring pain and sadness.

PISTA helps troubled people attain freedom from their fears. By methodically taking purposeful steps to overcome fears, PISTA allows individuals to rekindle inner strength and slowly regain self-value that would help them break out from the confines of their fear. PISTA makes people realise that each and every person in this world struggle with his or her own fear. This fact makes fearful individuals very normal and not alone in their personal journey towards freedom from fear. PISTA heals and opens the gates to living life that is worry-free.

Case 1: PISTA Therapy for Depression and Anxiety

One of PISTA's cases is that of a 14-year-old student in middle school who experienced depression. The patient was tall and looked older than most kids of her age. According to her mother, she used to be a happy, intelligent, and optimistic child liked by everybody. She loved to spend time with her friends and was a leader among them. All these changed when her father quit his stable job and started a small business, which sent their family into a financial crisis. Their condition worsened when her father had an extra-marital affair, quit his business, and ran away with his mistress. She and her family moved into a small apartment in a satellite city afterwards; she also moved to a new school.

Process of treatment

The patient met her father twice before she sought help. She fainted in the first instance, but her father dismissed it and declared it was

staged. Around the time of the incident, she wrote a suicide note but took a step back from committing suicide. She had the same suicidal tendency the second time they met but held back from the act again. Being with her friends and doing academic work started to become difficult for her.

The patient did not understand why she could not carry out the intended suicide. She lost weight and had amenorrhea. She talked less, withdrew from interpersonal relationships, and developed a passive and evasive attitude although there was no history of a major trauma in her life. The superior academic achievement and stable interpersonal relationships that she used to have were reflective of a good premorbid state. Although she showed the biological symptoms of depression, her depression seemed to have a strong experiential component as a result of the separation from her father.

Both the patient and her mother turned to PISTA Therapy when the patient's symptoms worsened and were advised to undergo psychotherapy over pharmacotherapy. Her mother likewise stopped taking medications. The facilitator explained to the patient and her mother the nature of PISTA and its use for depression. Other treatment options were also explained. The therapy started as soon as the mother gave an informed consent to administer.

The PISTA facilitator assigned the entry point "I want to save my family." The following were the thoughts and images that came to the patient's mind during the therapy.

1. Have to move and be separated from her friends

2. Father's extra-marital affair

3. Father's decision to start a new career, which started the whole situation

4. A memory of her childhood house (This was maintained with an affirmative attitude but with a little anxiety.)

5. Weeping
6. Blank
7. Father's extra-marital affair came back (This time she felt anger towards her father.)
8. An image of mother affected by the affair (Anger escalated)
9. The memory of the patient's mother breaking her doll in a fit of anger when the patient was six years old
10. Blank
11. Blank
12. Patient felt better
13. Good memories with peers; meeting new people

Findings and Conclusion

The seventh and final session processed the patient's academic success as a future template. After the completion of treatment, she accepted that there was nothing she could do to change the fact that her father had an affair and expressed that she would leave that event up to God.

Towards the end of the therapy, the patient scored 3 on the Hamilton Rating Scale for Depression (HDRS), which was indicative of complete remission of a major depressive disorder, and 12 on the Beck Depression Inventory (BDI). On her follow-up visit three months later, the patient's HDRS score was 3 and her BDI score further decreased to 6.

Case 2: Grief during Adolescence

The patient is a 16-year-old high school girl with symptoms of depression. She worried about her future, had difficulty concentrating in

class, and lost her will and appetite. Her father died of liver disease in the previous year. The event did not shock her though. The death was rather a natural event for her and she felt neutral about it. She carried on with life normally and even showed improved academic performance in school.

She began to feel fatigue when she entered a boarding school. Going through daily activities became inexplicably difficult for her. She stopped relating to her classmates, lost interest in school, and was unmotivated to continue studying. She initially attributed this behavior to the change in her environment and the strain she felt from her studies.

She later transferred to a nearby school in the hopes of easing the pressure created by her studies, and so she could live at home instead of staying in boarding school. However, this move did not help and she even got lower grades in school. She reported remembering her father a lot in the recent times and the memories devastated her and often brought her to tears

Process of Treatment

The patient was evaluated against the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria and was diagnosed with Major Depressive Disorder (MDD). At the same time, the Hamilton Depression Rating Scale (HDRS) 16, 17 was administered to her. She scored 18, which was indicative of a moderate level of depression. To rule out the possible diagnosis of Post-Traumatic Stress Disorder (PTSD) from her father's death, the Clinician-Administered PTSD Scale (CAPS) 18, 19 was also administered to her.

The patient did not fulfill the A2 criterion as she did not react with fear, helplessness, or terror. Symptom evaluation also did not satisfy the DSM-IV criteria for PTSD, and her total score of 26 on the CAPS was under the diagnosable level.

Because the patient and her mother did not want to undergo pharmacotherapy, the psychologist observed that the depression from the loss of her father could be a target for memory processing and recommended PISTA therapy.

The use of PISTA treatment for depression and other treatment options were fully discussed with the patient and her mother as a point of reference prior to the therapy. After the mother gave her consent and agreed to the treatment, the patient was given three sessions of PISTA therapy.

During the first session, the patient was educated about the PISTA process. The patient's history was recorded and the safe place exercise was applied. Then a guided imagery was identified for the self-control of possible anxiety or distress between sessions. An optimistic resource was generated using her future as a successful career woman, and this image was reinforced with sets of sounds.

The entry point used to jumpstart the therapy was "I am in a cage" as the beep sound file was played a regular interval.

The second session directly dealt with the entry point "I am in a cage." Below is the succession of random thoughts that came to the patient's mind during the session.

1. The memory of her father's death
2. Flowers and candles
3. Playing with a man but cannot see the man's face; cannot recognise who the man is
4. Blank blanket with a stack of woods around it
5. The memory of viewing father's dead body at the funeral; she was crying
6. The face of her father, smiling at her

7. A ball bounces back and forth
8. Shortness of breath
9. Water flowing into the river
10. Being wounded during her early school days
11. A classmate bullying her when at school activity time
12. Nice garden with lots of flowers; a peaceful place
13. White and clean place lots of kids playing; felt relaxed
14. Blank; relaxed

The session almost had no problems and went smoothly until another distressing memory of being wounded at her elementary school came up towards the end. The therapy continued with this new image and the patient managed to overcome the feeling of being bullied by classmates. Relaxation was achieved afterwards.

The memory of her father's death was re-evaluated at the start of the third session. This entry point became the target memory once again. The association went from the funeral to the happy times they used to have as a family, and then to good memories of her father. The patient complained of having a headache later and the session was terminated at her will.

Findings and Conclusion

After undergoing the therapy of listening to the PISTA beep sound in a total of 16 sets, the patient reported that she did not think of her father as much as she used to. Even if she did think of her father, the patient no longer felt sadness. She made a follow-up visit to the clinic eight weeks later and the remission was maintained.

Case 3: Fear of Riding

The patient was a 32-year old man with a mild intellectual disability. He lived in a supervised apartment in a large city and worked in a sheltered workshop. A severe accident got him extremely frightened of riding, even just at the sight of a vehicular accident on television. He felt bad every year on the anniversary of his accident, and his mishap upset his stomach and gave him so much anxiety that he had to visit the bathroom more frequently. The patient is slow at work; he could not tolerate criticism. Riding used to be his favorite hobby, but he avoided horses all the same since his accident.

The patient lapsed into a coma after his mishap and did not remember everything about the incident. He denied and had no recollection of going against the traffic light, which is what he was accused of doing, and was agitated every time he thought of the accuser. Other similarly damaging life events were discovered in his files—his parents divorced when he was 12 years old, and he was accused and treated of sexual abuse when he was 22.

Process of Treatment

The patient was treated in two stages. The entry point for the first stage is “I am in danger. I am lying on the ground near a car.” The stimulus applied to the patient was the PISTA device. These are the images and thoughts that came to the patient’s mind during the session:

1. I saw the image of the scooter and it frightened me. My heart beat so fast.

2. A vehicle is coming towards me.

3. I feel frightened and distressed when thinking of the accident.

4. The memory of being in the hospital comes back to me.

5. Blank. It is very dark.

6. I can see the image of an approaching car. I feel my body.
7. I see a body washed with blood on the street.
8. I passed by the street where the accident happened and no longer felt fear.
9. I see an image of a car, but fear is gone.
10. I am relaxed even when the therapist mentioned the accident again.
11. I am walking on the street without fear.
12. Blank
13. I see happy kids riding the scooter. I did not feel fear.

This session treated the fear of the participant that resulted from the scooter accident. The thought "I am in danger" and the anxiety and distress he felt were gone. After fully reprocessing this traumatic memory, the patient declared that he felt like "I am riding again and I feel relaxed."

The participant also confessed suffering from outbursts of anger and revealed that there was another overwhelming event that bothered him much of the time. His girlfriend of four years called off their engage-ment. Enraged, he hit her and called himself a criminal and abuser afterwards.

The second session dealt with these events again using the PISTA de-vice as stimulus. The target image was of himself hitting his girlfriend, and the entry point is the thought "I am an abuser." These are the participant's thoughts and images during the second session.

1. The face of my girlfriend, the one I truly love.

2. I feel anger because I gave my whole life to a girl who broke her promises.

3. Blank

4. I feel lost and I cry as I remember my girlfriend.

5. I feel sorry for hitting the woman I truly love.

6. Blank

7. Blank

On the fourth month of follow-ups, the participant was no longer upset about seeing scooter accidents. After the accident, he avoided the route he took to work, but started taking the same route after the therapy. The anniversary of his accident passed without triggering anxiety. He was proud that he was riding again. Anger outbursts, as well as physical complaints, decreased. Work improved and became more efficient, and he succeeded in building a new and stable rela-tionship.

Findings and Conclusion

The patient successfully managed his fear of riding, including the anger and pain from his failed relationship. He graduated from the therapy with an improved quality of life. This shows that the strategies utilised by PISTA Therapy machine effectively help patients manage and overcome fears. In this case, after fully reprocessing a traumatic memory, the patient conquered his fear of riding.

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About the Authors

Françoise Béguin
PISTA Specialist – PISTA Ski Technique

Françoise Béguin, the inventor of the PISTA Ski Program, is a world ski champion with a national diploma from ENSA in Chamonix.

In the 1992 Winter Olympics, Françoise witnessed how her teammate incurred injuries from an accident on the slope. She found herself in an emotional knot of worrying about her friend and concentrating on handling her own race. This difficult situation highlighted to her the importance of psychological strength in managing one's emotion and fear during unforeseen events. Françoise felt that current teaching methods only focus on technique and physical training and does not prepare the student to deal with unknown and challenging situations.

This experience and a deep interest in Psychology propelled Françoise's advocacy in advancing performance in sports. She joined the PISTA Research Team and invented ski practices that help athletes in similarly difficult situations. With the PISTA Integrative Brain Entrainment approach, Françoise incorporates psychological elements with ski techniques in training athletes to achieve the mental strength needed to respond to unexpected tough conditions.

Françoise has been teaching the PISTA Ski Program for twenty years and is continuously working with PISTA experts in enhancing the PISTA Integrative Brainwave Entrainment approach in empowering more people in multiple fields and different life conditions.

As an athlete, Françoise won Championnat de France, Ski de Vitesse in Les Arcs (1992), Coupe du Monde in Val Thorens (1991), Mondial de Vitesse Ford in Les Arcs (1987), and Championnat De Monde De Ski De Vitesse (KL) in La Clusaz (1986), among many others.

Françoise has a diploma of Ecole Nationale National de ski et d 'Alpiniste. Bachelor of Law Faculty of Grenoble, and a Diploma de Professor National 2nd degree Alpine Skiing.

Selina Chan
PISTA Specialist – Business Soft Skills Management

Selina Chan specializes in the application of PISTA Learning in conducting business. Her excellent training and extensive experience in PISTA Integrative Brain Entrainment allow Selina to help managers, business owners and associates handle the daily challenges of doing business.

Selina understands the most common emotional and psychological needs of individuals in the corporate world. Using the PISTA Learning System, she trains managers to overcome the fear of making presentations and attending meetings. She has helped employers, managers, and executives meet targets, handle stress and resist procrastination.

Since she joined the PISTA Team in 1985, Selina has been supporting the Chinese and English communities in Hong Kong and China and continues leading volunteers who give aid to the less privileged. Her expertise in the practical use of PISTA in daily life also helps patients cope with the challenges in studying and in managing interpersonal relationships. She also works with homes for the aged by helping the elderly cope with dementia.

Selina has a Bachelor's Degree in Psychology from the University of Calgary and a Post Graduate Diploma in Counseling from Herm College.

Dr. André Stang
PISTA Specialist – Neurotoxicity in Sports and Corporate Sales

Dr. André Stang pioneered research in the field of cell study. His research includes developing and performing high-throughput methods for screening assessments with genotoxic impacts on human beings. He is an expert in toxicity and has broad knowledge on how modern-day chemicals and lifestyle create an imbalance in the human body and wellness.

With his extensive understanding of neurotoxicity, Dr. Stang supports the PISTA Integrative Brain Entrainment research team in discovering new approaches to promote best practices in daily work-life management. He introduced advanced research methodologies to study and measure the level of toxicity accumulated in the body and its effect on emotional wellness. One of his key contributions is the PISTA in Business Program which he

developed to train people how to manage stress and productivity in the workplace.

Dr. Stang also combined his expertise on human toxicity with his professional table tennis career and designed the PISTA Table Tennis Program which helps professional table tennis players learn different techniques easier and faster. This program increases alertness and the ability to manage stress level for top performance in competition and for keeping balance during life challenges.

Dr. Stang graduated with a Diploma Degree in Biology and a Doctorate in the Natural Sciences. He has authored scientific papers on biochemistry, environmental science, genetics, and toxicology, among others.