

Creativity in Medicine

Gautham Harichand Nair

Rhodes College, USA

gauthamnair32@gmail.com, gauthamnair@aol.com

Siddarth Harichand Nair

New York Institute of Technology, USA

Abstract

Science fiction, one of the more intriguing and imaginative genres, implements an inquisitive nature that is all but lost in modern science. Once considered the product of genius or divine inspiration, creativity — the ability to spot problems and devise smart solutions — is recognized as a prized and teachable skill. Creativity and novel thought are the backbones of civilization and progress, yet the study of creativity is unfortunately not part of the formal curricular instruction in most academic healthcare settings. One may contend that medicine loses its touch with humanity as technology becomes more involved in the process, but human ingenuity and our ardent desire to improve outdated solutions and reduce the pain, time, and stress of a treatment or test illustrates how creativity is spurred in junction with technology. Chance, Competition, Collaboration, Crisis, Curiosity, Culture, and Convergence are the critical forces that play a pivotal role in shaping our creative destiny in both our personal lives and organizational functions. This cycles back to the collaborative section above as people with

unique abilities and expertise can congregate to solve endless problems, but it is reliant on communication, proximity, and one's own intrinsic desires. When we mix non- medical contexts with medicine it can help uplift productivity, versatility, and passion. Ultimately, convergence can enhance medicine in unexpected and innovative means, seeping into research, clinical care, and public health.

Keywords: Academic healthcare facility, clinical care, collaboration, creativity, medicine

Introduction

Science fiction, one of the more intriguing and imaginative genres, implements an inquisitive nature that is all but lost in modern science. From Frankenstein to space expeditions, these novels and creators seem to have some prescient nature. These tales seemed unreachable when written, but several advances in technology, medicine, and resource generation make these fantasies almost tangible. Once considered the product of genius or divine inspiration, creativity — the ability to spot problems and devise smart solutions — is recognized as a prized and teachable skill. Creativity and novel thought are the backbones of civilization and progress, yet the study of creativity is unfortunately not part of the formal curricular instruction in most academic healthcare settings. Creativity moves beyond mere synthesis and evaluation and is indeed the missing "higher-order skill." Creativity positively impacts clinical care, teaching effectiveness, and breakthroughs in research. However, time constraints, limited opportunities for fresh observations, and emotional exhaustion seem to have restricted our ability to cultivate creativity in our chore filled and task-oriented lives. Creativity thus becomes a valuable survival tool to navigate the challenges of being a 21st-century Psychologist. Being creative helps us

build sacred spaces for reflection and unleash the power of metaphor and analogy in our discourses.

When intrinsic motivation, acting as a catalyst, is paired with knowledge, experience, and passion, developments rapidly ensue. Spiro (2005) contends that creativity emerges when there is a coalescence across disciplinary thought, yet creativity is quite mysterious as its processes are intricate and unique. Despite the veil that rests on creativity's mechanism, Lawley and Thompkins (2008) indicate that serendipity garners productivity and innovation. If one master the ability to hone serendipity and command bisociation, progress will naturally occur. Medicine tends to be labeled as a regurgitation of facts and an inflexible replication of solutions; however, medicine has a plethora of depth, a propensity to dissecting the unknown, and a keen versatility to handling diverse scenarios.

As the digital age dominates several vectors of business, entertainment, and other media, its role in medicine fosters unforeseen advances through novel experimentation and perception of new problems as information quickly disseminates. One may contend that medicine loses its touch with humanity as technology becomes more involved in the process, but human ingenuity and our ardent desire to improve outdated solutions and reduce the pain, time, and stress of a treatment or test illustrates how creativity is spurred in junction with technology. Investigating the clues left by patients, scanning through computerized tomography or magnetic resonance imaging, and combining those outcomes to determine potential treatments or diagnoses requires the patience of a sculptor, the precision of an artist, and the perseverance of a dancer. Medicine is truly the confluence of intelligence and curiosity, yet many sacrifice their creativity or drive for security. Exploration is the foundation of medicine, and I asseverate that the kindle of trial and error fuels the fire of medicine. Like a passionate flame, medicine cannot suffice on a strict,

tedious attitude; the spark that ignites future medical discovery, research, and solutions begins with the contemporary philosophers of health.

Chance, Competition, Collaboration, Crisis, Curiosity, Culture, and Convergence are the critical forces that play a pivotal role in shaping our creative destiny in both our personal lives and organizational functions. I believe that these facets of creativity are discernible in medicine and can be consciously employed to become more efficient and effective. Each creativity component has a distinct characteristic that builds upon the other like parts of a car; without each element, the creative process, or car, sputters as it tries to perform. There may be sections that are more crucial for the creative process to flourish, but in medicine, each part is paramount to generate the most significant output.

Creativity

Creativity is considered the output of an original concept or an individual's maturation (Batey & Furnham, 2006); in medicine, both aspects are applicable. Creativity is a valuable asset that is the catalyst for innovation and diversity in medicine (Waddel, 1998). As pointed out by Uzzi and Spiro (2005), it consists of any creation of novel alternatives and enhances problem-solving through new mechanisms, processes of thought, and perspectives). Similarly, it encompasses characteristics of the creator, external analysis of a creation's creativity, cultural influence, and environmental pressure (Batey & Furnham, 2006).

Initial studies of the relations amongst creativity and intelligence indicated that creativity and intelligence are not synonymous. Although this is valid, ingenuity is considered an essential tool for creativity, yet that alone is incapable of honing one's creative potential (Batey & Furnham, 2006). Waddel (1998) mentioned that since wit is a component of creativity,

there should be no surprise that virtuosos and scientific adventurers were labeled creative and were included in the realm of professors, producers, and artists.

Sadler-Smith (2015) stated that the five creative sectors- preparation, incubation, intimation, illumination, and verification- are the journey through producing a masterpiece, uncovering the unknown, or manufacturing a monumental solution. Preparation relies on previous knowledge and is dependent on expertise and awareness. The acquisition of more experience enables the seeker to link unexpected events and achieve a desirable outcome. Sadler-Smith also mentioned that incubation is similar to a nesting ground for thoughts to develop and emerge. Ease from work encourages the incubation stage for more difficult tasks, and mental concentration on less demanding work is ideal for more manageable tasks, considering that the degree of effort is subjective. Two preeminent examples of the Incubation stage relate to Alfred Russell Wallace and Charles Darwin, and their adversity compelled them to recover from their mentally taxing work and generate ideas. Then, Intimation transitions between Incubation and Illumination. Illumination is the surfacing of profound work through seemingly useless conscious work that augments and improves through the unconscious system. Verification is the culmination of the creative process and the outcome through conscious work.

Batey and Furnham (2006) pointed out that education, coupled with motivation, can engender progression and apply creativity to medicine. Before the rise of current procedural practices, curiosity dominated medicine (Eakin, 2015). If the mentality shifts away from the fear of failure and ridicule, medicine with a flourish, and productivity will soar. Ingenuity deters visceral blunders and promotes confidence during turbulence (creativity and innovation in times of crisis). Likewise, in the face of a quandary, imagination induces astute decision making and mitigate stress, embarrassment, or anxiety (creativity and innovation in times of crisis).

Curiosity is vital for “medical students, and several outlets espouse that “student state curiosity” may not be sufficiently nurtured, and this disparity should be further explored. “Medical” faculty assert that “curiosity” serves a vital “role” for “intellectual progress,” retainment, application, and “lifelong learning” (Sternszus, Saroyan, & Steinert 2017). One potential enhancement seeks to implement “constructivist approaches” for education because faculty suspect that they are “suppressing” latent talent by not “engaging” students using “active” techniques ” (Sternszus, Saroyan, & Steinert, 2017). Similarly, medical education could “employ” individualized training to target “individual distances”, or personal drive known as “trait curiosity”, and produce “deeper learning strategies” ” (Sternszus, Saroyan, & Steinert, 2017). Curiosity is stimulated by “deprivation”, through “uncertainty and tension, or “interest”, through “arousal” and “pleasure” (Litman & Jimerson, 2004). “Drive theorists” posit that the motivation stems from a desire to escape distress; on the other hand, “optimal level theorists” proclaim that “organisms” push to sustain “arousal” and “[pleasure]” (the measurement of curiosity as a feeling of deprivation). In actuality, these two models intertwine (Litman & Jimerson, 2004). Ultimately, education can seek to find an optimal balance between curiosity as a feeling of deprivation (CFD) and curiosity as a feeling of interest (CFI). This happy medium can challenge students while maintaining impressionable students’ enthusiasm.

Imagination and awe have an essential role in “child development and education” and contributes to “consumer behavior, job performance, and scientific” exploration (Sakaki, Yagi, & Murayama, 2018). People, especially new and involved doctors, can experience “flow,” which is a period of complete investment and “absorption” in one’s task; it relates to intrinsic motivation and the derivation of pleasure from one’s work (sdt). This energy, or persistence, seems to fade over time. Age and curiosity have a negative correlation “in at least some aspects”

(Sakaki, Yagi, & Murayama, 2018). Age does not necessarily result in a fall “in all domains” .“Aging” alters the brain’s “structure” and function as well as one’s drive (Sakaki, Yagi, & Murayama, 2018). The “dopaminergic and noradrenergic” processes, which can adjust “hippocampal activity”, are prone to “age-related decline” and leads to reduced “exploration” and “apathy” in “novel environments” (Sakaki, Yagi, & Murayama, 2018). In fact, the solution to combat the fall of recollection and memory is to embrace one’s curiosity and experience several moments of uncertainty or understanding, which tests one’s mental aptitude (Sakaki, Yagi, & Murayama, 2018) .The shock of new information allows one to recover “proximal information as well. People experience greater learning through new “stimuli,” and this can aid older adults to preserve their memory and protect against “age-related cognitive decline” (Sakaki, Yagi, & Murayama, 2018). With experience or expertise, leaders often face “functional fixedness,” which limits the ability to discern “alternative uses for familiar objects” or systems. To maximize productivity or success, one needs to “manipulate” components of a process that are often “overlooked” (McCaffrey & Pearson 2015). Every goal has a facet, and there are “‘hidden’ feature[s]” to become victorious and veer in a more efficient or desirable route. For instance, one researcher used the phrase ‘repel energy’ in the realm of concussions and discovered that there were a minimal amount of searches in that domain; as a result, he expounded upon magnets and their applicability to football helmets as magnets are able to repel each other (McCaffrey & Pearson 2015). This repulsion would significantly reduce the impact of two helmets, and therefore, hopefully, mitigate the likelihood of concussions. Karl Duncker, “German psychologist, tested “functional fixedness” with a task to place the candle on a wall without allowing the wax “drip onto the floor” using “a candle, a box of thumbtacks, and a book of matches” (McCaffrey & Pearson, 2015). Most subjects where puzzled because they blinded

by the perception of the box as a container for the thumbtacks; the key was to “empty the box”, position the ‘candle within “the box” using “melted wax”, and attach the box to the wall with a tack (McCaffrey & Pearson, 2015). However, “experimentation”, while necessary to uncover wonderful answers, may approve of some personal “biases” and inhibit “responsiveness” to critical “feedback” (Bouquet , Barsoux, & Wade, 2018). Ultimately, “openness” improves “life satisfaction” by offering “greater resilience” and versatility (Sakaki, Yagi, & Murayama, 2018). ‘If we are ever successful, will we be equally blind?’ (Catmull, 2008). Curiosity thrives from one’s hunger. If society became satisfied with their advancements, innovation would halt. “Wealth” is as ruinous as a “challenged economic lifestyle” since individuals lose their drive, “ambition”, and “their pride” (Gladwell, 2013). Medicine owes its foundation to creativity, so an appreciation and integration of its roots is the key to improving the fading excitement of the once impressionable, wide-eyed doctors.

Chance

Serendipity consists of making fortuitous discoveries by accident and hinges on a keen awareness to identify unnatural or unique instances (Lawley & Tompkins, 2008). As mentioned by Rubin, Burkell, and Quan-Haase (2011), perception can be hindered by external factors, such as distractions. The science of serendipity has several pathways and has two requirements to intersect a deviation: timing and location (Lawley & Tompkins, 2008). Chance endows a provident individual with intellect from an array of resources (Sadler-Smith, 2015; Mitchell, 1999; Makri & Blandford, 2012). Distant connections can be formulated during that Incubation period, and that mental relaxation can induce powerful associations (Batey & Furnham, 2006; Makri & Blandford, 2012). Makri and Blandford (2012) noted that this bisociation is favorable through tolerance of unforeseen knowledge, a connection to one’s environment, and a rebellion

against the preexisting norms. Lawley and Tompkins (2008) wrote that a proper understanding and encouraging the desired effect is critical to harness serendipity. However, the peculiarity or instance should not be forced, or the association will not be as fruitful. Also, several occurrences may accrue before a grand outcome ensues, and positive cycles can provoke a magnificent consequence. Chance, while not only applicable to medicine, thrives when an individual is unwavering, dissatisfied, and artful (Lawley & Tompkins, 2008).

As mentioned by Lawley and Tompkins (2008), there are several examples of chance in medicine and science in general. Charles Goodyear splashed together a mixture and produced a coalescence called vulcanized rubber. Rubin, Burkell, and Quan-Haase (2011) stated that the unmasking of penicillin by Alexander Fleming is considered pseudo-serendipity as his chance coincided with an intentional desire to find a diminishing bacterial agent for staphylococcus. The finding of green fluorescent protein, relevant to jellyfish, was the result of several failed attempts of integrating enzymes. Then, a sudden incubation period, triggered by relaxing at a harbor, introduced the proposal that an enzyme is involved in a luminescent reaction (Shimomura, 2005). Another instance is Dr. Joseph Eng's immersion in the usefulness of Gila monster saliva, which looks at shatters the natural predisposition of the destructive elements of the poison. The chance may spawn seemingly fruitless products at first glance, but time paired with experience can utilize those resources.

Competition acts as a catalyst for creativity and sparks a greater determination to construct more efficient solutions. Motivation is a determinant of triumph (Batey & Furnham 2006)). Several scientists depart from their field because they fail to find work that's entertaining and meaningful to them (Allio, 2004). As stated by Uzzi and Spiro (2005), the true nature of motivation is intrinsic; if one's will stems from external factors, such as money, productivity,

and longevity of work will rapidly degrade and be inconsistent. Allio (2004) mentioned that inciting competition can be difficult, and one may struggle to find a perplexing problem to solve. Innocentive, a company that rewards solvers for discovering novel solutions to puzzling issues, demonstrates how competition, including “over 50,000” contenders, spurs creativity and success. The lasting effects of competition are powerful answers that are quicker, fruitful, and cost-effective (Allio, 2004).

Collaboration

Compensatory geniuses fortify one's weaknesses and offer support. When artists assemble for a common goal, the product's impact surpasses previous expectations. Referencing Innocentive again, they often look for alternative resolutions and seek unusual, new participants to gain possible solutions (Allio, 2004). If they failed to branch out, they would not find potential seekers that have the remedies. Innocentive amasses innumerable scientists in a plethora of disciplines that may originate from diverse countries or have expertise in distinct fields (Allio, 2004). As the variety of unique viewpoints increases, the breadth of thought improves the overall solution, increasing collective input (Batey & Furnham, 2006). In a similar regard, “unconventional allies” can be a necessary support line to achieve and excel (Bouquet, Barsoux, & Wade, 2018). As a result, the assembly or unit is like a jazz ensemble: each peculiar component has a purpose and can add to the dulcet whole. There are “three principles” that enable the rhythm and unison to flow: tolerance, gratitude, and respect (vanArk & Wijnen-Meijer, 2019). Each member transitions between “supporting and soloing” and serves to enhance the overall momentum and progress (vanArk & Wijnen-Meijer, 2019).

. Even the proximity from a field can aid in “novel” contributions. For instance, differing teams of “carpenters, roofers, and in-line skater” were more successful at solving problems in dissimilar “fields” such as “the design of carpenters’ respirator masks, roofers’ safety belts, and skaters’ kneepads” respectively (Bouquet, Barsoux, & Wade, 2018). With this knowledge, organizations uncover latent potential by amassing “diverse knowledge” through their unique employees and extracting further truth from the “Internet”, creating depth through the amalgam of people and resources (Bouquet, Barsoux, & Wade, 2018)). However, each portion of the organization should be acknowledged despite one’s “discipline” or standing. There may be some sections or tasks that are “perceived” as more important, but this arrogance can erode any comradery that is a prerequisite to “a common understanding” (Catmull, 2008; vanArk & Wijnen-Meijer,2019). In the same manner, the executive or head of an operation “plays with the band” and gives a guideline for the others to follow, performing within the “framework”. “Interprofessional education” is essential for the medicine to grow, and like a “jazz” band “different backgrounds” are beneficial to produce some of the greatest works (vanArk & Wijnen-Meijer,2019).

Uzzi and Spiro (2005), noted that there is a limit, or threshold, where collaboration has detrimental effects for productivity; oversaturating the supply for creative thought can be worthless and disperse known, unnecessary interests. Greater unity can reduce the likelihood of novel ideas and distinct perspectives because bias and grouping occur amongst the overall team. Similarly, if the congregation is not passionate or has low creativity with the subject, the potential declines (Batey & Furnham, 2006). As a result, the “small-world network” model is the more efficient means to maximize creative output (Uzzi & Spiro 2005, p.448). This mold relies on minimized networks and “clusters” to garner latent creativity (p. 449). Likewise, the various

conglomerations, or groups, can ultimately combine their discoveries to produce a final solution (p. 449). In medicine, this technique is beneficial to reduce unproductivity and enhance the hands-on nature of the practice.

Crisis

Throughout a grueling tribulation, hope and innovation “pierce the darkness” (How imagination). "Risk" creates stress and pressures that activate crucial creative thought and is fundamental for original production (Raichle, 2015, p.11). Batey and Furnham (2006), pointed out that varying dilemmas require different applications of creativity and contain unique patterns, principles, and processes. As a result, complete cognizance must be applied to one's cause because creativity is nourished by a conscious focus on the apparent issue. An inquisitor must be able to “navigate” unfamiliar terrain (Bouquet, Barsoux,& Wade, 2018). Connection, or "bisociation," can be stimulated by several random factors, and the impact of dissimilar fields can be crucial to form that link (Makri & Blandford, 2012; Uzzi & Spiro, 2005). An association can be affected by a present, past, or future disorder, and it could be an arbitrary occurrence (Makri & Blandford, 2012). The crisis in creativity is often unruly and piques one's curiosity, and its constant state of wonder has an aura filled with mystique that attracts those seekers that apply their twist, their perspective (Kaufman, 2015).

However, society's mentality can thwart development. HIV and AIDS “related stigma” preserves and fosters “the epidemic”. “Stigma” is an unpleasant connotation that is applied to “individual, system, or condition” (Neema, et al., 2012). This ignorant perception can postpone health services, extend the “risk of transmission”, reduce “treatment” care, and heighten the “risk of disability and drug resistance”. As a physician, one should “empower” their “clients” (Neema, et al., 2012). “Language” and semantics are critical for a “client” to grasp their “condition” and

their “position in relation to others” (Neema, et al., 2012). Another means to better patient condition during harsh times is to utilize creativity to entertain, inform, and improve. “Creativity Initiative” organized by “Friends” is a group that offers “activities” to clients “wait[ing] to be seen by healthcare professionals”. The awkward tension collapsed through the “large board games, music and dance”. One team began to practice “entrepreneurial skills” to garner “productive employment” while “others” uplifted the “social and spiritual support”. These enticing developments created a safe space that generated “smiling faces and encouraged” the clients (Neema, et al., 2012).

A phase of intellectual drought conduces “boredom” - varying from “indifference, calibrating, searching, reactant, and apathetic”- spurs progress on the severity of the monotony; if an individual takes initiative and harnesses their desire to assuage discomfort, productivity ensues (Camire, 2020).. There is a “silver lining: this irritation or helplessness urges one to “alleviate” their agitation, “motivat[ing]” the sufferer to improve the status quo (Camire, 2020; Carmull, 2008). As stated by Lawley and Tompkins (2008), in the same regard, a crisis can be eye-opening to a seeker that maintains an open mind; the shock can shift one’s view on the world’s systems or a pre-existing law, or a mystery waiting to be found. However, one must accept chaos with a caveat: success stems from a foundation and the overwatch on “creative talent and risk”. Similarly, one should subsume a degree of “uncertainty” for a revelation to be genuine and impactful (Catmull, 2008). A conundrum is like a balance, and a doctor must accept that challenge and be upright even if they wobble "off-balance" from time to time (Lawley & Tompkins ,2008, p.25).

Curiosity

Curiosity sprouts as a question within one's thought that blossoms and is applied to "reality" as "creativity" (Kennedy, 2016). Perception continuously transforms as our experiences, adversity, and growth reshapes our perspective on our environment (Carson, 2010). Associations can be spurred by one's attitude and by external pressure, such exposure "outside one's comfort zone" (Makri & Blandford, 2012, p. 693). One characteristic of curiosity is when a person desists from demanding thought, which allows thought to explore and be free of restraints. When the mind rests, it can be a powerful creator that is fueled by its passions (Pillay, 2017).

As noted by Rubin, Burkell, and Quan-Haase (2011), intrinsic motivation is the kindle for curiosity, and those that venture into the depths of the unknown tend to discover. The potential of curiosity is distinct for each person and can be cultivated by pursuing one's desires or questions. Mitchell (1999) pointed out that, doctors should chase after an encounter instead of shying away from shattering conventional standards. Medicine has a basis produced by inquisitors; those that wish to hone that nature must have an unquenchable drive to experiment with a seemingly impossible "hypothesis and stand tall in the face of "making a fool" of oneself (p.627). Leonarda Da Vinci was a profound contributor to several fields, including medicine, because he nourished his "creativity" to produce anatomical sketches, invent futuristic devices, and stroke some of the most beautiful works that revolutionized art itself (Eagleman & Brandt, 2018, p.2).

The motivation to uncover a perplexing dilemma is ingrained within the concept of medicine. One instance is Dr. Omalu, who risked his credibility to research the underlying cause of mental degradation after playing in the NFL. His team knew the reason for the players' demise, but he wanted to unearth the process because there had to be an answer (Laskas, 2009). He ultimately concluded that chronic traumatic encephalopathy was the effect of the constant

bashing between the players, which caused the brain to reverberate inside the skull; while the players' skulls were protected, the brain was in motion. Similarly, Dr. Joseph Eng's revolutionary finding of the Gila monster saliva matured from his guidance from "Dr. Yallow," who encouraged him to seek a creation that could "benefit society in a sweeping way" (Eng, 2007). Dr. Eng would examine standard animal subjects, but his innate curiosity led him to seek more strenuous work, directing him to the Guila monster. Mirroring Einstein, these doctors were intractable and unwavering; their "contempt" for the status quo and the "acolytes" of public health empowered them to produce their masterpieces and integrate their style to medicine (Isaacson, 2017, p.1).

Culture

Culture sets a precedent for creativity, and it serves as the birthplace for diversity. An intellectual depression can amass a coalition of innovators to propel a society out of hardship (Camire, 2020). Different cultural environments, or backgrounds, have distinct practices, traditions, and expectations—for instance, the Japanese belief of "ma" values "space" that is essential for maturation and "enlightenment", freeing the individual from the constant strain from overexertion that burdens many in the workforce (Bouquet, Barsoux, & Wade, 2018).

Dr. Joseph Eng's history enabled him to focus on venoms and its application because "his mentor" concentrated on "peptide hormones and urged him to explore the field (Eng, 2007, p.2). As mentioned by Hilts (1998), another case includes the innovative Plywood Palace, where researchers would "punch through boundaries" and modify the environment to solve complex problems (p.1). These seekers channeled the available resources in the building, including human ingenuity and passion, to generate the radar and various other discoveries during World War II (p.1). Their intuition, paired with their freedom from authority, created a haven for scientists to

exploit "water, electricity, and telephone communication"(p.1). This "autonomy" paired with intelligence and fueled by "intrinsic motivation" allows openminded thinkers to explore the unknown (sdt). The amalgam of scientists and the culture that spewed from the blend generated a genesis of passion, or "altar of creativity," that had a lasting impact on the entirety of the exploration of research and innovation (p.1). An atmosphere's mindset can endow a community with the volition to succeed, imbedding "restless[ness], conviction, and in some cases "desperation" (Camire, 2020).. In Pixar, there is a unity, or comradery, to build off one other, and each department "invests" in the "review process" to augment each development. They push "to improve" each idea through "frenetic cycles" of modification; as a result, they bolster their work environment to create a haven for "young new hires" to have the panache to contribute their novel thoughts (Catmull, 2008; Bouquet Barsoux, & Wade, 2018). To reinforce their creative strength, they monitor "innovations in the academic community". Pixar's culture is a paragon of embracing diversity, and the executives' desire to "touch the world" through "animated films" past their livelihoods should be subsumed into the essence of medicine (Catmull,2008).

For Einstein, he treasured his originality and creativity over his intellect; in his contemporary laws and dogmas, the "paradigm" could not elaborate "how to bend light" (how imagination). Another misconception about "advantages and disadvantages" is that the world is a positively sloped line; however, we reside in an "inverted U-shaped world" (Gladwell, 2013). While a lack of resources to nurture development is undesirable, an oversaturation of wealth and help can foster detrimental habits that regress an individual's potential. As a result, a perceived advantage, such as money or inheritance, may hinder success because many of the values earned from hard work and perseverance. Culture does not have to be one's background; culture can be

encouraged by one's field, one's interactions in the workplace, and a unified agreement to better existing conditions.

Convergence

Convergence assembles thoughts, principles, and practices to create a more efficient, more whole solution. It is considered the genesis of originality and improvement that includes a breadth of experiences (Eyre, et al., 2017). Da Vinci demonstrates how convergence promotes success and discovery; his knowledge came from “multiple disciplines” (Isaacson, 2017, p. 3). This amalgam of intellect, experimentation, and history enhances critical thinking and allows various perspectives to chip away at the problem (Eyre, et al., 2017). For instance, the Innocentive Company united several different cultures, beliefs, and customs to solve their high-complexity issues, and an individual with the key, or solution, may live in a completely unexpected area (Allio, 2004). “Diverse traditions” intersect at a similar “point of view” to modify or augment a system or process (Bouquet ,Barsoux, & Wade, 2018). Allio also stated that many of the victors are employed in dissimilar fields, and their insight can catch undetected flaws or notice patterns that the trained eye may overlook. As pointed out by Eyre, et al. (2017), convergence’s application to medicine is priceless: “computer science, engineering, chemistry, biology, industry, and government” are all sectors that have a profound influence in one’s practice. This transdisciplinary integration allows the conglomeration to be more efficient than the distinct pieces, like how a bike is faster than a unicycle (p.91).

Psychiatry incorporates awareness from one’s experiences and has three major components: “the mind, brain and behavior” (p. 91). As a result, the basis of psychiatry is a convergence of the components of thought, and convergence can aid in bettering one’s psyche. There are minimal treatments to disorders to the variety and society’s oblivious nature to mental

health (Eyre, et al., 2017). Convergence will naturally seep into psychiatry; however, we should take an effort to espouse it and nurture its implementation. When convergence propagates through medicine, in this instance psychiatry, more ideal treatments and patient care will solve difficult scenarios, including the growth of cases due to an elderly population, lackluster health programs, and dismal treatment alternatives. Typically, a combination in medicine is between particular fields, such as computer science and analysis of data (Eyre, et al., 2017).

As mentioned by Eyre, et al., (2017), “Pharmacogenomic” components can be channeled into medicine, chiefly patient care. Its principle goal is to use a variety of interdisciplinary techniques to tackle the brain’s enigma, and it harnesses its power from adept workers ranging from “neuroscience” to the “humanities” (p.96). Another application involves “RDoC”: a flourishing process that focuses on conduct, habits, and “genetics” to produce an analytical measure that diverges from “phenomenology” (p. 96). It has the capacity to sort medication in distinguished bins from a patient’s “pharmacokinetic and pharmacodynamic” classification, and this ability has improved clinical care and included cost-efficient techniques. “Socially assistive robots” are in high demand in the medical field and have latent influence that can be employed to revolutionize patient care (p.96). As the digital age advances, its potential in medicine skyrockets, and its application is essential to improve the medicine’s future. Convergence depends on the assembly of data from diverse fields to fortify a congenial interest. Technology has extended the scope of convergence and “blurred industry boundaries” (Bouquet, Barsoux, & Wade, 2018). Data storage, electronic imaging, and personal accessories are all burgeoning components that will only mature in the future. For instance, “companies” can form new connections from “insights” from even “online forums; one grouping ‘body hackers’, they utilize insertions, “LED lights”, and various “technology” to alter “human capabilities” (Bouquet

Barsoux, & Wade, 2018). This platform has inspired developments that could lead to an improved “pill-sized pacemaker” that relays “biometric feedback” and progress “lifelong care” (Bouquet Barsoux, & Wade, 2018). Information from previous studies, research and simulations will be used to illustrate more precise “predictive and prescriptive models” to prevent and treat disorders, symptoms, and conditions “without real-world error” ((Eyre, et al., 2017 ; Bouquet, Barsoux, & Wade, 2018).

Convergence is also like a jazz band in the sense that several components combine to form a rhythm, beat, and a creative product. “Artistic skills” can be implemented into medicine because medicine in itself is a craft, and the various instruments resemble the various perspectives and contributions throughout an ensemble or operation. One application relates to “improvisation” and when a member ‘hits a terrible note’ (vanArk & Wijnen-Meijer, 2019). “A surgeon” may take a course of action that is undesirable and carries “grave consequences”, but they should “manage” faults while remaining composed. Instead of fretting over the blunder one should keep the energy and elevate their team, moving the beat or focus “in an entirely different direction” (vanArk & Wijnen-Meijer,2019). Like jazz, medicine has a fundamental “structure” paired with situations of “uncertainty, instability, and disorder. In another regard, doctors and their clients interact in a ‘communicative space’, and the physician must adapt their interpersonal skills and “communicative” approach. One should optimize the conversation to maintain a patient’s ease and comfort. This confidence will allow a client to divulge potentially sensitive information and will make them more candid. The doctor acts as a “facillitat[or]” as well as a leader . Even though a doctor is an extreme medical maestro, one does not “practice” during a “session”; practical mastery and application come through repetition and experience(vanArk & Wijnen-Meijer,2019).

There are a plethora of resources to enhance the state of medicine, and it is important to branch out and embed possible practices to the current system. Incorporating these branches is an arduous task because it requires a great recollection of previous, esoteric knowledge and depends on a person awakening the relationship amongst medicine and the differing field. There are alternative methods to embed domain-specific skills, such as “collaborative- readiness” (Eyre, et al., 2017. p.97). This cycles back to the collaborative section above as people with unique abilities and expertise can congregate to solve endless problems, but it is reliant on communication, proximity, and one’s own intrinsic desires. When we mix non- medical contexts with medicine it can help uplift productivity, versatility, and passion. Ultimately, convergence can enhance medicine in unexpected and innovative means, seeping into “research, clinical care, and public health” (p.98).

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