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The Utility of Deep Divergence in Applied Creativity

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The Utility of Deep Divergence in Applied Creativity

by

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An Abstract of a Project
in
Creativity and Change Leadership

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

May 2023

Buffalo State University
State University of New York
Department of Creativity and Change Leadership

ABSTRACT OF PROJECT

The Utility of Deep Divergence in Applied Creativity

If applied creativity seeks the generation of novel and useful ideas for a real-world goal, wish, or challenge, then my concept of theoretical creativity can best be described as the generation of ideas that are novel and not yet useful. I assert that the employment of deep divergence is the best tool for producing ideas within a theoretical creativity framework. Deep divergence is defined as divergent thinking to its most extreme levels, far beyond what is probable, beyond what is possible, and into an unplumbed realm of what is currently impossible and unknowable. However, for this project, my aim was to determine if there is utility in exploring deep divergence in matters of applied creativity and, in particular, within the construct of a creative problem-solving ideation session. What follows is 1) a foundation of the considerations and precautions one must address prior to the implementation of deep divergence in an ideation session, and 2) a proposed methodology for exploring deep divergence, including tools, facilitation prompts, and suggestions for establishing a productive creative climate.

Keywords: creativity, divergent thinking, applied creativity, theoretical creativity, deep divergence, creative climate, ideation, creative problem-solving

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_____

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_____May 6th, 2023_____

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Dr. Susan Keller-Mathers
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___ May 6th, 2023___ 

Kevin Molesworth
Student

Dedication

For Keith. I did it, bro.

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SECTION ONE: BACKGROUND TO THE PROJECT

Purpose and Description of Project

In early 2021 I formulated a concept that I dubbed "theoretical creativity." If "applied creativity" is the coin's obverse, then "theoretical creativity" is the reverse side of that same coin. Similar to the oppositional relationship between applied physics and theoretical physics, where the former is rooted in the basic concepts of physical sciences and the intersection of known principles of practical devices and systems (e.g., engineering, technology, etc.) and the latter, in stark contrast, employs hypothetical models and abstractions to predict natural phenomena and behavior rather than the study of extant knowledge and its application, applied creativity and theoretical creativity are diametric. Borrowing from the definition of theoretical physics, theoretical creativity must also employ hypothetical concepts and abstractions rather than any existing knowledge, understanding, or experience. It is my position that this can be achieved by exploring the deepest depths of divergent thinking (Molesworth, 2022). So, the question is, just how far can the human brain go in its divergence?

In asking this question, I have added another term to my lexicon as it relates to theoretical creativity: "deep divergence." Deep divergence is defined as divergent thinking to its most extreme levels. It is more than the ideation of the novel and useful (Runco & Jaeger, 2012), it is an exploration of novelty that may not yet be useful, or that might even never be of use or any tangible value. Deep divergence may sometimes meander outside the bounds of good taste and polite conversation, perhaps even outside of the realm of all reality, beyond the law of physics and spacetime, into a world of dreams that far exceeds existing technology where dematerialization makes invisibility and teleportation commonplace. If physicists versed in Bosonic string theory

can claim twenty-six dimensions, then deep divergence should also enjoy the freedom to dance between the raindrops on the wings of human imagination.

In relating back to my question, while the employment of deep divergence is essential to theoretical creativity, my original aim with this project was to determine if there is value in the utilization of this tool in applied creativity. To examine this, I intended to host a series of ideation sessions based on the creative problem-solving process. These sessions would have included a mix of individuals with widely diverse backgrounds, experiences, and career paths, and they would have operated within a modified set of rules for brainstorming (Osborn, 1953). As I was preparing for this undertaking, I quickly realized the massive hill I was about to climb. A mentor pointed out to me that a project of this scale, with the lofty goal of proving the value of deep divergence in applied creativity within a timeframe of just fifteen weeks, would be improbable at best and more likely impossible. Thus, I have modified my goal and the outcome of this project to be that of laying the foundation for what will be years of research and experimentation. Proving the utility of deep divergence and the value of theoretical creativity is truly a journey of 1,000 miles, and this project is the first step.

I have an additional, monumental goal for this project as well, and that is to leave a legacy contribution to the field of creativity while also encouraging a societal shift towards the broader, more sincere acceptance of divergent thought and, more importantly, divergent thinkers and those labeled as medically neurodivergent. I am reminded of a quote, one that is nearly always misattributed to Steve Jobs but was actually crafted by advertising executive Rob Siltanen and his creative team at TBWA\Chiat\Day:

> Here's to the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently. They're not fond of rules. And they have no respect for the status quo. You can quote them, disagree with them, glorify, or vilify them. About the only thing you can't do is ignore them. Because they change things. They push the human race forward. And while some may see them as the crazy ones, we see genius. Because the people who are crazy enough to think they can change the world are the ones who do. (Siltanen, 2011)

Suppose my exploration of deep divergence finds evidence that there is a place of value within applied creativity. In that case, I believe this will provide a bedrock platform where I can invigorate a movement of greater support for innate divergent thinking abilities and a better appreciation of the merit of that skill. This could inspire an enhancement and expansion of the use of divergent thinking in individuals and organizations, building truly creative environments where novel ideas, divergent thinking, and unpopular opinions are encouraged and rewarded.

Rationale for Selection

Two significant and very personal reasons serve as my greatest motivations for undertaking this project. Throughout my entire life, I have contended with the brunt of countless slings and arrows aimed squarely at my divergent thinking brain. From early childhood, where I was labeled a "freak" and "weirdo," into adulthood, where I was branded a "rogue" and "idealogue" for my radical thoughts, I would like to build a safe space for those like me whose mindset is in a default state of divergence the majority of the time. The shame and ridicule thrust upon those with genuinely novel ideas can be

paralyzing, and it saddens me to think of all the brilliant innovations denied a wider audience due to the vocal criticism of the masses. Right now, somewhere in the world, there is a college student in a dorm room with a plan to solve world hunger, a mid-level climatology researcher with a process that could reverse global warming, a janitor at a food manufacturing plant with an original concept for a salty snack that scads of savory-nosh fanatics would enjoy, and none of their ideas will be realized because they fear the potentially harmful judgment they could suffer.

The second motivation for undertaking this project resides in the love of my two neurodivergent children, who struggle daily to adapt to a society that makes little room to accept how their brains process information. While people might think it is adorable that my daughter has renamed cough drops "medicine beans," and my son refers to lasagna as "spaghetti cake," the patience of their teachers is tested when my daughter runs to the classroom window to watch a hummingbird gather nectar from the petunias, completely ignoring the lesson plan on the blackboard, or when my son wanders away from the lunch line to listen to the John Philip Sousa march emanating from the band that is rehearsing just down the hallway.

If I am able to provide evidence that deep divergence has value in applied creativity, it could lead to a movement where divergent thinkers realize that they are not abnormal, that they are enough, that they are good, and that they have purpose and a place in the world. This, in turn, could lead to life-changing discoveries and innovations with impacts, big and small, for the whole of humanity or local communities.

Regardless of achieving the grand, most-desired outcome I could hope for with this project, at a minimum, I expect to benefit from personal growth by pushing the very

limits of my creativity and ideation skills. My future research into deep divergence will also serve as a catalyst for further exploration of my concept of theoretical creativity. Those I will eventually enlist to be a part of my creative problem-solving sessions should also reap the rewards of being exposed to a new level of divergent thought and processes.

SECTION TWO: PERTINENT LITERATURE AND RESOURCES

While there is a considerable amount of seminal work and contemporary resources that I can cite and utilize in my examination of deep divergence on a foundational level, there is no existing research that I have found specific to my topic that I can lean on. This is not necessarily a bad thing, as I am excited to carve out a new path of research in the field of creativity. Still, a good deal of my writings on the subject will be anecdotal and the product of conversations with colleagues and mentors steeped in the wonder of imagination and curiosity.

Existing research and publications by respected creative leaders, academics, and psychologists such as Vlad Glăveanu, Anna Craft, Alex Osborn, Göran Ekvall, Mark Runco, Michael Kirton, and Gerard Puccio will be included as the basis for my hypothesis as they are largely the inspiration for my project and fascination with deep divergence. Additionally, I have colleagues that work for notably playful organizations such as LEGO and technologically advanced institutions such as NASA that have committed to assisting me with this endeavor. Rounding out my team of resources, I have innumerable friends who spent decades making their living as artists, musicians, and "weirdos" happily willing to join the fray.

Let us now sojourn into a bit of that academic research that serves as both a foundation and a springboard for this project's exploration. The term "deep divergence" is a construct of my mind as one that tends to understand concepts from a visual perspective. What de Bono (1970) described as "lateral thinking," something I imagine as a thought expedition on a horizontal plane, I proffer a different semantic approach. Whereas the word lateral is defined as "of, at, toward, or from the side or sides," I

picture deep divergence as a black hole, the depths of which knows no bounds. Allow me to share a divergent thinking assessment that I often use to illustrate my perspective. The Divergent Association Task was developed by three researchers (Olson et al., n.d.), and it asks test subjects to think of ten unrelated words. The goal is to submit words with the greatest "distances" between them. Now let us use those same criteria for a traditional word association game and look at the examples below where the beginning word is "white."

white – colorless

white – black

white – chartreuse

white – marshmallow

white – pumpkin

white – trampoline

white – pedagogy

white – tangential

white – petrichor

white – velleity

You notice that the "distance" between the word "white" and the response becomes greater as you go down the list. The greater the distance, the deeper the divergence. This is the most elementary means of explaining deep divergence to a broad audience. For audiences well-versed in an intellectual understanding of creativity, I utilize a different explanation based on the work of one of history's most extraordinary polymaths, Leonard da Vinci.

In the late 1480s, da Vinci designed a flying device that he dubbed the "aerial screw." This rotor-based flying device was essentially the precursor to our modern-day helicopter, which would not be a viable and practical invention until some 450 years later. Though there is no evidence that da Vinci ever constructed a physical version of his design, contemporary aerospace engineers that have studied his drawings have concluded that the aerial screw would fly. This is the essence of theoretical creativity. If applied creativity is "novel and useful," then theoretical creativity could be described as "novel and not yet useful." For one to see so far into the future requires a mind capable of deep divergence. When framed within the context of adaptors and innovators, as defined by Kirton (1976, 1980), deep divergence is the best tool for the latter.

I turn now to the scholarly research that I believe supports my postulation that the depths of divergent thinking are infinite. We know that creativity can be taught and learned (Puccio et al., 2006; Scott et al., 2004). Putting divergent thinking into practice is a vital component of the creative process; therefore, if creativity can be taught and learned, then a case can be made that an individual that devotes themselves to exploring the deepest depths of divergent thinking could demonstrate its unlimited possibilities.

Every individual has creative potential (Runco, 2004). The human brain is a wonderful tool that anyone can utilize for creative productivity. If we all have creative potential, then many of us must also have the ability to excel in our divergent thinking output.

Divergent-thinking training is demonstrably effective in enhancing creativity. (Baer,1994). "How do you get to Carnegie Hall? Practice, practice, practice." Much in

the same way that we teach young children convergent thinking skills, we can readily teach individuals of any age divergent thinking skills. Personally, I have observed and experienced this countless times. I have had the good fortune to travel around the globe leading workshops on creativity, and I often open with two information-seeking instructions: "Raise your hand if you believe that you are creative." Invariably about twenty percent of people will raise their hand. Next, I say, "Raise your hand if you do not believe that you are creative." The remaining sea of hands is raised aloft. Generally, about an hour later, after taking the entire group through a series of creativity exercises and divergent thinking challenges, I will ask once again that those believing they are creative raise their hands high in the air, and the response is very often one hundred percent of attendees.

Establishing a positive working climate increases creativity (Ekvall, 1996; Isaksen & Ekvall, 2010; Rhodes, 1961). Given the proper environment, an individual's ability to create is elevated. In a "perfect" environment (if one can actually be established), fear of judgment, fear of failure, fear of ambiguity, and any other obstacles to deep divergence could, in theory, be completely eliminated.

Creativity is an evolutionary trait (Lotto, 2017; Puccio, 2017). We are "wired to create." There is plenty of neuroscientific research indicating that the essential tools needed to be creative already exist in our brains. I believe that we can use those innate tools to explore the deepest levels of divergence. Years ago, I heard an interesting anecdote in the form of an African proverb. To paraphrase, it stated that a man who hears a rustling in the tall grass and believes it to merely be the wind will die, while the

man that assumes the rustling is produced by the footsteps of a hungry lion runs away and lives.

Individuals that demonstrate superior divergent thinking skills have the capacity to imagine future events (Thakral et al., 2021). You can draw a direct line from the findings in this research to Leonardo da Vinci's work in the 15th century. When working with groups on the alternative uses test or incomplete figures exercises from the Torrance Tests of Creative Thinking (Torrance, 1972), I encourage my participants to not simply think of what is but rather what might be. What are all the possibilities? …even those that might seem silly, impractical, or implausible? This opens the door to possibility thinking (Jeffrey & Craft, 2006) and possibility studies (Glăveanu, 2010, 2022).

Pulling together all of the evidence noted above, let us imagine that we combined all of that with the ideal creative environment for a particular individual, one that crystalizes perfectly with their unique personality. I will use myself as the laboratory animal for this hypothetical experiment. Assuming all of Ekvall's ten dimensions (1996) are already in place, we can add a few things into the mix that I find conducive to my creative output through an enhanced divergent thinking mindset:

- Nighttime. Preferably between 7 pm and 1 am
- A large, open office with large windows providing a panoramic view overlooking a bustling city
- A large table and a comfortable, ergonomic office chair on wheels
- A large television broadcasting a movie that I have seen numerous times with the audio muted

- Music playing. Typically, something in the "sludge" or "stoner metal" genres
- Dim lighting
- The availability of light snacks, caffeinated beverages, and perhaps a hard cider or two
- Solitude. No other people (especially young children) or outside distractions such as email or my cellular phone

This is my perfect physical environment for creativity.

One final intangible element that I must incorporate relates to one of the most important rules associated with effective brainstorming. Rather than merely deferring judgment, I attempt to detach from it wholly. When I find myself immersed in this safe space, my divergent thinking ability is typically at its acme. In those moments, I believe that my divergent thinking capabilities are infinite. I believe that everyone, provided they have received training in the science of creativity and the creative process, and that their unique requirements for the perfect environment are met, can also diverge infinitely. I contend that the only thing holding people back from exploring infinite divergence is their will to do so. I am reminded of the important research into intrinsic and extrinsic motivating forces (Amabile et al.,1994; Fisher & Amabile, 2023). A motivated individual can achieve just about anything.

SECTION THREE: PROCESS PLAN

Let us move from the theoretical to the hypothetical. As noted above, my original aim for this project was to prove, beyond any and all doubt, that deep divergence has a measurable value in applied creativity processes. In addition to time constraints, I have realized that there are innumerable questions that need first to be answered and concerns that would need to be addressed prior to implementing a study with live participants. I am reminded of an oft-ridiculed quote by former United States Secretary of Defense, Donald Rumsfeld, when he said, "Reports that say that something hasn't happened are always interesting to me because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say, we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know." (Wikipedia, 2023) It is the known unknowns associated with the undertaking of my project that give me pause and the unknown unknowns that stop me in my tracks. Chief among these unknowns is the effect that deep divergence might have on an individual's mental wellness, and I will address this later in this paper. All that said, I will now lay out a proposed methodology that I or others might utilize to ultimately show evidence that the use of deep divergence could make a measurable and valuable contribution to the creative process.

In order to test my hypothesis, the vast majority of my efforts would be focused on implementing deep divergence in real-world creative problem-solving sessions, which I would host and facilitate. While both diverging and converging processes are employed in each of the four stages of Creative Problem-Solving – clarifying, ideating, developing, and implementing (Puccio et al., 2005, Puccio at al., 2012) – I contend that

deep divergence is most useful, and arguably instrumental in many cases, during the ideation phase. Of the multiple sessions that I would facilitate, I would want to ensure that my participants represent a diverse array of knowledge, experience, careers/industries, and personality types. Some of the facilitation tools utilized during my ideation sessions would include brainstorming, stick 'em up brainstorming, brainwriting, forced connections, character excursions (Miller et al., 2001), and my model for divergent personas (Molesworth, 2021).

To best illustrate my hypothesis, I will compare and contrast a few elements of three variations on the creative problem-solving process: the Osborn-Parnes Creative Problem-Solving process (Osborn, 1953; Parnes & Noller, 1972; Firestien, 1990; Puccio et al., 2020) at its current state of evolution and as it is being taught at Buffalo State University in the Department of Creativity and Change Leadership, the creative problem-solving process that I currently use with my clients which is based on Osborn-Parnes with some slight modifications, and lastly, a third version of the process that I have designed, also based on Osborn-Parnes, that I believe can spur deep divergence.

The first issue that must be addressed is that of press (creative environment) for each individual involved in the ideation. The Osborn-Parnes process promotes due deference to Ekvall's ten dimensions, though I would say that in sessions with my clients, I give special attention to many aspects of the physical environment and how it affects each individual's five senses. I have always thought it was critically important to be within your physical comfort zone if you were to ideate outside of your day-to-day mental comfort zone. For a session looking to achieve deep divergence, I believe it

would be necessary to survey all participants to make certain that their physical environment was best suited to enhance their creative output. This would mean that different groups would likely need to be formed. e.g., one group for those that prefer bright, natural lighting and another group that prefers dimly lit surroundings.

Another key component to a successful foray into deep divergence would require modifications to several of the "rules" of brainstorming (Miller et al., 2001) that include:

1) seek wild and unusual ideas

2) defer judgment of ideas

3) combine and build upon the ideas of others

4) strive for quantity

- In accordance with the instruction of Dr. Roger Firestien, the professor that taught me the Osborn-Parnes creative problem-solving process, the facilitator's job is to make sure that the session does not "go off the rails." It is not the facilitator's job to "steer the ship." This means that the facilitator should not actively participate in suggesting ideas for the goal/wish/challenge, but instead encourage the participants in the room – the stakeholders and creative catalysts – to do that work. The facilitator's role is that of a resourceful guide, not an autocratic leader. I understand the reason behind this rule as it might unduly influence the group or bias each individual's thinking if the facilitator were to suggest ideas. In sessions with my clients, I will occasionally break this rule when the ideation fails to launch, and participants are hesitant to engage or offer suggestions. Furthermore, I will demonstrate how one might build on the ideas of others in the session, and I will propose some of my own. I am always cautious

and mindful of what I say so that I do not exert too much influence over the trajectory of the group's ideation. I fully acknowledge that it is a very fine line to walk. Still, I do believe that it is necessary at times, especially when a client is investing their precious time and money in my skills and expecting high-quality, implementable ideas and measurable results. The distinction between a facilitator and a consultant can be murky, so I tend to tread lightly when setting foot in that gray area. For the purposes of a deep divergence ideation session, I ignore all of those restrictions on the facilitator. When chasing deep divergence, it is my belief that a facilitator must not only have the freedom to participate in ideating actively, but they are duty-bound to put forth their ideas to the group. You never know where the next brilliant idea might come from, so the notion of silencing any voice in the room seems counterintuitive to me, especially when that voice has extensive training in creativity and divergent thinking. That would be an inexcusable waste of a precious resource.

- In a typical brainstorming session, participants are encouraged to seek wild and unusual ideas. To achieve deep divergence, this notion must be brought to the extreme. From the silly, ridiculous, and implausible to the irresponsible, unethical, and even illegal ideas, all should be explored. Tolerance for a mélange of outrageous ideas increases the odds that you will unveil a novel and useful one. For example, if I prompt an ideator to tell me about a new form of transportation and they say "rocket bicycle," they have only combined an existing mode of transportation with an existing mode of propulsion. Not very divergent. Deep divergence would seek a response such as "We should construct a hollow cube

of iridium and rhodium alloy, measuring ten' x ten' x ten' and outfitted with several liquid crystal lasers which decompose the atoms of the human body, then, using the gravity of the Gaia BH1 blackhole, we send those atoms through a wormhole powered by the nuclear energy we can extract from a pulsating quasar in the Markarian 231 galaxy, thus transporting our human subject to any location in the universe in seven zeptoseconds." Additionally, as I just suggested, yes, even unethical and illegal ideas need to be considered. Remember, it was not that long ago that doctors appeared in advertising for cigarettes, Coca-Cola actually put cocaine in their beverages, and most banks refused to issue credit cards to women. Laws change and ethics evolve.

- Next, I look to another tenet of brainstorming which is striving for quantity. I highlight the rule of thirds that I have heard referenced countless times in ideation sessions. Let us say that an ideation group generates sixty ideas for a goal, wish, or challenge. The argument is that the first twenty ideas will be the same common answers that nearly any group would offer and likely not novel at all. The following twenty ideas might be a mix of common responses and some that are slightly novel. The final twenty responses are typically the ones where you have the best chance of striking gold, though that is not guaranteed. For deep divergence, a group must go well beyond sixty ideas. I believe that a minimum of two-hundred ideas should be generated for every 30-minute ideation session. It is simply a matter of casting the widest net. If your goal, wish, or challenge requires more than two-hundred ideas, you should extend the time devoted to ideation and come up with another set of two-hundred ideas, and so

on and so on. Anecdotally, it is worth noting that in a recent session with a client of mine that was seeking novel ideas for the marketing of a new product, we produced 648 ideas in twenty-five minutes. Put simply, when ideating, more is better. When ideating with the goal of reaching deep divergence, more is essential.

- Building on the ideas of others is an essential component of brainstorming. The Osborn-Parnes process encourages this, as do I with all my clients. However, when striving for deep divergence, I believe this should be a separate section of the ideation process. While it will surely occur organically within the response time allotted for each prompt, it should also have a life of its own in a segment explicitly devoted to building upon the responses of others within the group. I refer to this as "springboarding" or "diving deeper into the black hole."
- Now I arrive at the last and what I believe is the most important and significant modification to the guidelines of a traditional brainstorming session if deep divergence is to be reached. Instead of "deferring judgment," participants must wholly detach from judgment. While it might seem like an insignificant semantic choice, it is actually a powerful distinction. "Deferring" implies that judgment is only delayed until a later time. "Detaching" from judgment gives no indication of future conversation about the merits of each proffered idea. To put it another way, if I know that my ideas will never be judged or criticized at any time in my presence, then my risk of being embarrassed or having my feelings hurt is minimized to nearly zero. On the other hand, if I know that judgment is only deferred for a short time and that I will be openly criticized (positively or

negatively, to be determined) by my peer group, I could very likely hesitate to offer my most outlandish and unconventional ideas. Allow me to be resolute in clarifying that detaching from judgment is neither simple nor easy and unlikely achievable in most situations by the vast majority of people. I fully acknowledge this massive stumbling block on the path toward deep divergence. Yet, while difficult, improbable, and perhaps unattainable for many, it is possible.

In terms of the potential concrete results of my project work and hypothesis, I confess that it is a sticky wicket. Not only is the concept of deep divergence and its value yet to be determined, but the value of any original idea is subjective. I imagine that the notion of selling "pet rocks" was initially deemed entirely foolish with no merit. Yet, advertising executive Gary Dahl did just that in 1975 and consumers bought more than one million of them at $4.00 each. As Alex Osborn is purported to have stated, "A fair idea implemented is better than a good idea kept on the polishing wheel." Therefore, we will only have a sense of the value of deep divergence in applied creativity when we see it properly implemented in various settings in pursuit of solutions for a multitude of problems and challenges.

Another consideration in attaining my goal of proving the viability of deep divergence is related to the willingness of others to adopt the practice. While I do believe that I will, one day, find viable evidence that deep divergence has a place within applied creativity, I acknowledge that even if its value and effectiveness are proven beyond reproach, that does not mean that individuals will choose to engage with the tool and its methodologies. Deep divergence is an acquired skill, and I have no misconceptions that everyone exposed to it will be capable of or interested in mastering

it. The same can be said for playing piano. You could become pretty good at it if you practiced eight hours each day for a year, but that does not mean that you have the desire to do so.

Next, I arrive at my project timeline. While I have several existing clients where an exploration of deep divergence could potentially produce actionable solutions to challenges related to their businesses, time constraints and a lack of other necessary resources do not allow for such an endeavor. Instead, what I might see myself doing in the future would be to host numerous ideation sessions with clients, colleagues, and creative catalysts in pursuit of deeply divergent ideas and determining if they provide value to the creative problem-solving process. Realistically, examining the potential merits of deep divergence would require many years of work and analysis. All that said, here is a rough timeline that I would like to follow over the few months of this Master's project:

February 17th – Submission of concept paper

March 2nd – Review of data collected from previous ideation sessions with "client one" to examine and determine if any of the ideas generated approach the level of deep divergence.

March 9th – Review of data collected from previous ideation sessions with "client two" to examine and determine if any of the ideas generated approach the level of deep divergence.

March 21st – Submission of the final version of sections 1 – 3 of the concept paper

March 23rd – Review of data collected from previous ideation sessions with "client three" to examine and determine if any of the ideas generated approach the level of deep divergence.

March 30th – Review of data collected from previous ideation session exercises seeking novel solutions to hypothetical challenges with members of my Master's degree cohort to examine and determine if any of the ideas generated approach the level of deep divergence.

April 23rd – Submission of the final version of sections 4 – 6 of the concept paper

May 1st – Submission of the final version of the Master's project

May 15th – Submission of the final version of approved Master's project to Digital Commons

Lastly, I shall discuss my evaluation plan for my project. I am a person that is obsessed with divergent thinking assessments. However, it is almost universally accepted that adjudicating the exercises completed by test participants is subjective to some degree. Assessing creative ability is not as simple as determining that the response to 2+2 = X has correct and incorrect answers. Correct answers: X = 4, X = two squared, X = the square root of 16. Incorrect answers: X = 8, X = -17, X = potato. Much like divergent thinking assessments, the value of deep divergence and its place within applied creativity will be largely subjective, potentially based on or biased by opinions, and so-called evidence or proof of merit may be anecdotal. Even the verification of my personal learning goals will be difficult to measure as I may fall victim to confirmation bias.

The looming question of when a response to a prompt has reached the level of deep divergence versus just an idea that is derivative of something creative that came before it (adaptive) is subject to the assessor's knowledge base and exposure to the topic being explored. In the case of one of my particular clients, I have a relatively high degree of confidence in evaluating the quality and novelty of each idea offered as a solution to her challenge because I am immersed in the same industry as she is. However, that will not always be the case with future clients. The quantity of ideas can be measured easily, but the quality and the level of deep divergence face the same conundrum of judging divergent thinking assessments. Additionally, even more difficult than determining originality may be assigning a value to the level of usefulness of a deeply divergent idea.

In reflecting on the future and the potential success of my project, ultimately demonstrably proving the value of deep divergence, I cannot tether my conclusions to my clients' development or implementation of the new ideas presented to them. I seek to understand the intrinsic value of deep divergence in producing novel solutions, not my clients' ability to effectively utilize them in their overall business strategy. That is a variable beyond my control for the scope of this project.

As someone trained in creative problem-solving, that has a very high FourSight (Puccio et al., 2005) preference for ideation, and who thoroughly enjoys the facilitation process, I am confident that I will be able to change paths as needed during this lengthy exploration of deep divergence. Ambiguity does not bother me, and failure is not a dirty word. I will encourage and sincerely consider all feedback provided to me by my clients

and all the individuals involved in each ideation session, and I am supremely confident in the guidance of my esteemed project advisor and mentors.

SECTION FOUR: OUTCOMES

The resulting product of this project is a hypothetical framework for how one might operate a creative problem-solving ideation session with the aim of producing deeply divergent ideas for a particular goal, wish, or challenge. Upon completion and analysis of several of these types of ideation sessions, one could ultimately determine if deep divergence is a tool of value in the practice of applied creativity. Let us look at this framework through the lens of the four Ps of creativity (Rhodes, 1961).

Person

Based on my examination of the data and ideas that I have collected from numerous creative problem-solving sessions with my clients and with members of my Master's degree cohort at Buffalo State University, I have determined that the individuals most likely to reach the level of deep divergence while ideating are those that are trained in the science of creativity, well-versed in the scholarly research in the field of creativity, and who exhibit above-average ability in divergent thinking based on their performances on divergent thinking assessments. This is not to say that a layperson, one who lacks broad exposure to creative processes, is incapable of deep divergence, only that it is less likely to be achieved.

In addition to the preference of building a resource group of participants with creativity training, there is a requisite need for each individual to be within a certain range of personality types, and they must demonstrate unquestionable stability in their mental health. I will elaborate more on this below as we explore the process.

Process

A brief summary of the modifications to the brainstorming process noted above are the essential precepts when deep divergence is sought. 1) The facilitator should actively participate in suggesting ideas and possible solutions for the goal, wish, or challenge. 2) Seeking wild and unusual ideas should be pushed to its acme. 3) Quantity of ideas is of supreme importance. Fifty to sixty ideas are not sufficient. Two-hundred ideas or more should be produced in a 30-minute ideation session. 4) While building upon the ideas of others will occur naturally during ideation, a separate section of the process should be carved out with ample time provided to produce "springboard" ideas. 5) All participants must wholly detach from judgment throughout the entire ideation process. Each participant must commit to eliminating judgment of the other members of the group (personalities, demeanors, appearance, political leanings, religious and ideological beliefs, etc.) and their ideas as well as judgment and criticism of themselves and their own ideas.

The next thing to consider as part of the process is the type of prompts that the facilitator utilizes when asking questions of the participants in the ideation process. Let us explore some of these prompts through a notional example. Imagine a small business owner was seeking novel ideas to better market their new product and increase profits. Some common prompts in the Osborn-Parnes creative problem-solving process typically include "What might be all the ways that I can better market my new product?" or "How might I market my product in order to make it exceedingly profitable?" In essence, these are just a restating of the goal, wish, or challenge. Simple questions generate simple answers, so if we are seeking novelty and deep divergence, then we need to pose more stimulating questions via inspiring prompts. One prompt in

particular that I have utilized countless times with my clients and my cohort that typically produces a considerable number of deeply divergent responses is a request for bad ideas. For instance, I frequently begin my ideation sessions with the following warmup exercise. "You are stranded on an island and need to construct a life raft if you plan to return to the mainland and survive. Tell me a series of bad ideas of things that we might use to build this raft." Responses might include rocks, concrete, wet sand, palm tree leaves, fish bones, etc. In one instance, a participant offered the idea of ice cubes. On the surface that might seem like a sufficiently divergent and perfectly bad idea if I were attempting to flee a tropical island, but it is actually a perfectly good idea if I were setting sail from the Aleutian Islands off the coast of Alaska in the middle of winter. It is this type of thinking and the embracing of seemingly bad ideas that led to the invention of pykrete. Pykrete is a frozen composite made from approximately 14% sawdust or wood pulp and 86% water. Not only does it float and have a very slow rate of melting, but it is as strong or stronger than concrete, weighs far less, and is much easier to repair if damaged. You can repair pykrete by simply adding more water and sawdust and it will quickly freeze, whereas concrete requires the laborious mixing of a dense slurry and needs a significant amount of time to cure.

Turning back to my original example of the small business owner, a few bad ideas for marketing their new product might include spray-painting your company logo on the tallest building in your city, visiting the local zoo and slipping your product through the fencing of the monkey's cage and letting them play with it to the delight and confusion of onlookers, or do no marketing at all and just hope the product finds a consumer base on its own. I think that everyone can agree that all three of these ideas

are bad, but they might inspire good ideas when reimagined in the "springboarding" portion of the ideation session where participants build upon the ideas of others.

There are several other prompts that I have utilized in past ideation sessions with my clients that have elicited a greater number of novel and deeply divergent responses. These include the following:

"Tell me some silly ideas."

"Tell me some ridiculous ideas."

"Tell me some implausible ideas."

"Tell me some irresponsible ideas."

"Tell me some ideas that are unethical."

"Tell me some ideas that are illegal."

"Tell me some ideas that defy the laws of physics."

"Tell me some ideas that would be offensive to the average person."

"Imagine you live 20/100/500 years in the future and tell me some ideas."

Another tool that I have found to produce deeply divergent ideas is the utilization of character excursions. The way in which I employ this tool is different from the manner that was demonstrated by George Prince in his Synectics approach (Prince, 1970; Villiers, 2022) to problem-solving and the use of excursions. My version of character excursions is rooted in my personal experience as a former professional actor and director of live theatre. It is the basis for my model of divergent personas mentioned earlier. On two occasions, I have had the pleasure of meeting and speaking at length with Meryl Streep. She is lovelier than you can imagine. She is also nothing like the cruel and callous character of Miranda Priestly that she portrayed in *The Devil Wears*

Prada. She created that character and then embodied it. Granted, nobody other than Meryl Streep can boast of twenty-one Academy Award nominations and three wins, but the techniques she employs in building a character can be appropriated by individuals in a creative problem-solving environment. There are two ways of doing this: the first is to take on the identity of a real person, living or dead. This could be a celebrity like Beyonce, a politician such as Abraham Lincoln, a leader and social reformer such as Martin Luther King Jr. or Mahatma Gandhi, or even your very own grandmother. The second method is to invent a character that has never existed. Grape-Juice McPurpleface, age 25, born and raised in Detroit, MI, an online entrepreneur that has made millions of dollars selling custom designed socks and who enjoys eating popcorn with every meal. Whichever option you choose, the goal is to fully embody that persona and respond to the prompts as that person. This is a relatively easy and effective way of stepping outside of your own mind and into the thoughts of another being.

Saving what I perceive to be the most important element in the process for last, it is actually the thing that needs to be done first. If one is to recruit individuals for an exploration of deep divergence, it is nothing short of compulsory that each participant undergoes a thorough mental health evaluation before any work commences. There is a multitude of peer-reviewed studies that have suggested a connection between elevated divergent thinking ability and mental health issues, including anxiety and depression (Yamaoka & Yukawa, 2020) and even suicidal ideation (Mraz & Runco, 1994). As I have suggested the necessity to modify the standard brainstorming guidelines from deferring judgment to detaching from judgment during the ideation process, I believe it would be irresponsible and potentially dangerous to ignore the

worst-case scenario where a participant's foray into deeply divergent thoughts could negatively impact their mental health. For these reasons, if I am to undertake a real-world exploration of deep divergence in the future, I will partner with a clinical psychologist. I would insist that any other researcher that wanted to probe the concept of deep divergence do the very same. I would argue that it is non-negotiable.

Since I would be working with a clinical psychologist to ensure the mental wellness of ideation participants, I would also seek individuals that fit a certain profile. My preference would be to identify subjects that are open-minded, resilient, not overly sensitive, extroverted, and with just the right balance of healthy narcissism for your own ideas and empathy when considering the ideas of others. When I say the phrase "healthy narcissism" what I am seeking is someone who is confident, assertive, and exhibits an appropriate amount of self-love and pride in their talents and accomplishments.

One more consideration before embarking on the journey into deep divergence is the possible legal implications of research of this type. Because we live in a litigious society, I would strongly suggest that anyone conducting a study of deep divergence should require that all participants sign a waiver of liability and an attestation of their mental wellness and understanding of the possible dangers involved with the process.

Press

As mentioned above, the creative climate should be built around Ekvall's ten dimensions for creativity and innovation (1996), with special deference given to freedom and risk-taking. Above all else, it has been my experience that these two components are the greatest catalyst for deep divergence. Additionally, I recommend administering a

pre-screening survey to all participants to best determine their preferred physical environment. It is important to investigate how stimuli to all five senses affect each individual. e.g., lighting, temperature, room size, wall color, availability of food and beverages, pleasant vs unpleasant odors, volume levels of aural components, etc. Using this information, participants could be grouped accordingly based on their preferences and sensitivities.

Product

For the purposes of this project, I am defining the product as my hypothesis for a foundational process to explore deep divergence, and not the tangible, implementable results of a creative problem-solving session that achieves deep divergence, as the utilization of the latter in applied creativity is yet to be determined.

I assert that the methodologies I have put forth in this paper have great potential and are worthy of further exploration and research. Perhaps one of the most important outcomes of designing this product has been the long list of questions that have been generated since its inception (See Appendix A for full list).

SECTION FIVE: KEY LEARNINGS

The vast majority of my key learnings from this project revert back to my reference to the unknowns I have discovered. I have been ruminating on the concepts of deep divergence and theoretical creativity for more than two years. In that time, I have generated an extensive list of questions, most of which are still unanswered. When I manage to find an answer to one question, two or three more are raised. This is not a bad thing. I am happily embracing it. It is an essential component in this ongoing journey to develop a reliable process to achieve deep divergence. A complete list of these questions is included in Appendix A, but some that have a reserved seat at the forefront of my mind involve concerns of affecting mental health through engagement with deep divergence, preventing, or at the very least reducing, the likelihood of deep divergence being used for nefarious purposes, and making a strong case for implementing deep divergence in the creative problem-solving processes of established organizations.

Many of my key learnings fall into the category of personal revelation. Some of these are more benign than others. As the saying goes, you can lead a horse to water, but you cannot make him drink. I might very well demonstrate the value of deep divergence, but that does not mean that people will adopt the practice or process. When we limit ourselves to the familiar and plausible, we also restrict our discovery of truly innovative ideas, but unfortunately, some people sit quite comfortably in the status quo. While that is disappointing, I have to let go of that outcome.

I have come to acknowledge that deep divergence could be utilized to generate novel ideas for unethical and illegal interrogation techniques, or cruel new methods of

torture, or even devasting acts of terrorism. This prospect weighs very heavily on me. After all, somebody invented waterboarding. Somebody recognized the flaws in airport security systems and carried out the attacks of September 11th using only a few boxcutters rather than machine guns or a bomb vest. Malevolent creativity is real. I am reminded of Robert Oppenheimer's thoughts just moments after he witnessed the detonation of the first atom bomb that he helped to create as the director of the Los Alamos Laboratory. He reflected in a television interview on what he had done and how his contribution to the project would forever change the world. He stated that he was immediately reminded of a quote by Vishnu from the Bhagavad-Gita. "Now I am become death, the destroyer of worlds." I would rather not be saddled with the burden of something I created being used for evil and destruction, even though my intentions are benevolent.

I acknowledge that ideas generated through deep divergence could have a "triggering" effect on some people. Ideation sessions that achieve deep divergence are very likely to produce ideas that certain individuals might find offensive. It is possible that some ideas could open the door to memories of traumatic experiences. When searching the darkest corners of our minds, there is a danger of unearthing repressed emotions. Once you do that, it is difficult to put the toothpaste back in the tube, so to speak. You see examples of this during the voir dire portion of jury selection. If you were the victim of an armed robbery last month, I can assure you that you will not be selected to sit on a jury by the defense counsel in an armed robbery case next month. This is why the idea of pre-screening participants with a full psychological evaluation is so important before commencing with any deep divergence.

The last of my key learnings comes in the form of a reminder, a bit of colloquial wisdom. Rome was not built in a day. Anything worth doing is bound to be complicated, and my penchant for skipping the development phase and careening headlong into implementation does not serve me well in undertaking this project. If I had my druthers, I would have already assembled numerous creative problem-solving sessions to test my hypothesis. Damn the torpedoes and full speed ahead is my default state. Fail fast and learn then try again. It took some time to overcome my stubbornness and relent to the fact that an endeavor of this magnitude should not be rushed. I realize now that proving the validity of what might be my seminal work cannot be accomplished in a single semester.

SECTION SIX: CONCLUSION

I have long recognized that divergence is my customary mindset, and this seems to put me in the minority of humanity. In my experience, I have observed that many people are comfortable in a convergent state and demonstrate a general preference for it. What confounds me is the reluctance to explore divergent thinking even within a safe space – one where the creative climate is optimal, supportive, and welcoming. As such, I recognize that the exploration of deep divergence is unlikely to be appealing to the masses. I accept that. Still, it is my belief that deep divergence has a place in creativity; both theoretical and applied, and I am eager and excited to partner with other respected members of the creativity field to investigate that assumption.

What I see myself doing next is spreading my ideas far and wide to those that are curious and willing to listen. The first step will be sharing this very paper with the esteemed speakers and attendees of the Possibility Studies Network conference taking place in Dublin, Ireland, this summer. I have accepted an invitation to take the stage and confer my thoughts on this subject that has consumed me for the past two years. As part of my presentation, I plan to invite anyone and everyone among the roomful of scholars, academics, and researchers to join me in the next phase of this mission.

An ongoing task will be to answer the many questions looming over this project. I intend to enlist members of my Buffalo State University cohort, colleagues in the live events industry, mentors, and friends. If I have learned anything in my time pursuing this degree in creativity and change leadership, it is that collaboration is king.

I expect that I will stumble. I expect that I will falter. I expect that I will fail. I expect that I will suffer through periods where I feel discouraged. Despite all of that, I

will pick myself up, dust off, and continue my voyage to better understand and more clearly define my concepts of deep divergence and theoretical creativity. From there, I aim to partner with businesses, academic institutions, and community organizations to help them find viable ideas for their goals, wishes, and challenges.

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APPENDIX A

Appendix A – List of Questions

Can the use of intoxicating substances enhance deep divergence?

Is the use of intoxicating substances the creativity equivalent of performance enhancing drugs (PEDs) in sports?

Is meditation a pathway towards deep divergence?

Could I trademark deep divergence to avoid its use for nefarious / unethical purposes?

What effect does mindfulness have on deep divergence?

Are individuals on the autism spectrum better suited to explore deep divergence?

Are neurodivergent individuals better suited to explore deep divergence?

Can schizophrenia be a gateway to deep divergence?

Do those suffering from dementia have episodes of deep divergence?

Mind / body connection: Can yoga enhance deep divergence?

What effect might exercise have on deep divergence?

Does diet effect one ability to diverge deeply?

Are their specific foods that might enhance deep divergence?

Is caffeine a deep divergence enhancer?

Is sugar a deep divergence enhancer?

Dreaming and REM sleep: can they be “activated” in a way that promotes deep divergence?

Can hallucinations induce deep divergence?

How might sleep deprivation affect deep divergence?

How might isolation affect deep divergence?

Do prisoners in extended periods of solitary confinement experience deep divergence?

Can deep divergence be achieved through “tough love” or positive punishment?

Can hypnosis aid in deep divergence?

Can people wholly detach from judgment?

Appendix A – List of Questions, Continued

Could complete detachment from judgment induce a mental breakdown?

Can a truly safe space ever be established?

Does perfect press / creative climate exist? Is it possible?

How best to utilize the Metaverse in building a divergent persona? …avatars? …anonymity?

What can be learned from the Central Intelligence Agency's research into spacetime transcendence and could that be applied to deep divergence?

Religion: In my experience, people with extreme religious beliefs seem to be close-minded / not open to new ideas. This seems counterintuitive since they have the very strongest of convictions and the fewest doubts in spite of the fact that there is no tangible evidence or proof of their beliefs. Is it possible that faith of that level could be an asset to divergent thinking and the exploration of the unknown?

How best to eliminate competition in a corporate ideation session where individuals seek recognition (versus team recognition) for the purpose of receiving raises, getting promoted?

Thinking outside the box: how best to eliminate the box completely?

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Kevin Molesworth

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Name

_____May 6th, 2023_____

Date