

CHAPTER EIGHTEEN

TODD LUBART: CREATIVITY ... A WORTHWHILE INVESTMENT

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ABSTRACT: Lubart is a leading pioneer in the field of psychology and creativity and has made his mark internationally by his research in some of the most important and exciting areas in the field. His work has included and continues to explore the multivariate approach to creativity, the creative process, ways to identify creative potential, and creativity across cultures all within what Lubart (2018) suggests as a seven C's framework. This chapter will explore Lubart's education and background, summarize his most influential work and contributions in the field of psychology and creativity, and zoom in on a handful of his most compelling collaborative concepts (see references) including the Evaluation of Creative Potential (EPoC) assessment, the Investment Theory, the seven C's of creativity, and creativity and computers. Lubart's past and present research stresses the importance of each individual's creative potential, the nature of these individual differences and examining environments that support and value creative work.

Keywords: Creativity, creative potential, creative process, creativity across cultures, creative environment, creative development, potential and creative giftedness, co-creativity and curricula, Investment Theory, multivariate approach and creativity with robots.

Introduction

“The topic of creativity ... is viewed as a capacity that can contribute to personal development, daily problem-solving, occupational success, and societal growth.”

- Lubart (2018, p. 134)

Todd Lubart, a professor of psychology at the University of Paris Descartes, has made a significant impact in the field of psychology and creativity in profound ways over the past 25 years. Marconi Institute for Creativity (2021) gives a brief yet important summary of Lubart's professional accomplishments and Lubart's (2021) impressive and comprehensive curriculum vitae fills in the remainder. His research is extensive and covers such areas as:

Creative potential, the creative process, cultural differences and the multivariate approach, and the impact of the creative environment.

Lubart is the current president of the non-profit scientific society, International Society for the Study of Creativity and Innovation (ISSCI) and has more than 200 publications on creativity including books, book chapters, and scientific journal articles. He continues to be acknowledged for his distinguished work in research, editorial activities and teaching in the field of psychology and creativity and is a leader among his students, colleagues, and vast audiences worldwide.



The Journey to Creativity

Lubart is an American and grew up in upstate New York. He graduated with his Bachelor of Arts in Psychology from Brandeis University in 1987, a Master of Science in Psychology from Yale University in 1990 and a Yale Master of Philosophy in 1991. He earned his doctorate of Philosophy (Ph.D.) in Psychology from Yale University in 1994 under Robert Sternberg's guidance. Lubart then headed to France to do post doctorate work at the University of Paris Descartes in the field of creativity in children which began his journey examining the creative potential in individuals. He was an Assistant-Associate Professor of Psychology from 1995-2001 before becoming Full Professor at the University of Paris Descartes in 2002 (Lubart, 2021).

Since this time, Lubart has been a prominent figure at the University of Paris Descartes being the director of the LATI (Laboratoire Adaptations Travail-Individu) from 2010- 2018, head of the individual differences teaching group in psychology (2002- 2015; 2019-2020), co-director of the Masters specialty program, Economics and Psychology (2011 – present) and director of the Masters Artistic Creation program (2015 – present). He continues to empower and make a huge impact on his Ph.D. students giving them the tools to be creative leaders and co-collaborators in the future. Lubart continues his own research and work on grants and projects involving the creative process, the environmental impact on creative work, and the evaluation of creativity and innovation in response to the COVID-19 crisis (Lubart, 2021).

Creative Potential

“...each person designs his or her life path and sculpts who he or she is, as an ongoing, life-long creative work.”

- Lubart & Thornhill-Miller (2019, p. 278)

Lubart, Barbot & Besancon (2019) explained potential as the “probability to develop, achieve or succeed to reach a desired future state” and creativity

“involves the generation of original ideas that have meaning and value in the context in which or for which they are produced” (p. 541). Furthermore, according to the multivariate approach, creative potential for a task is seen as the confluence of several specific but interrelated capabilities (Lubart, 1999, Sternberg & Lubart, 1995; Lubart, Mouchiroud, Tordjman & Zenasni, 2003), which will be briefly explored in this section and in more depth later in this chapter.

The resources for creativity or capabilities are referred to as ingredients (Lubart, 1999a; Sternberg & Lubart, 1995) and cover the aspects of: Intelligence, knowledge, cognitive styles, personality, motivation, affect, and physical and socio-cultural environmental contexts (Lubart, Zenasni, Barbot, 2013). These capabilities can be organized into cognitive factors, conative factors, affect-related characteristics and environmental factors (Lubart, Barbot & Besancon, 2019). Cognitive characteristics may refer to an individual’s knowledge of diverse topics relevant to the creative work in question, analogical and metaphorical abilities, or their mental flexibility and conative characteristics can be described as an individual’s personality traits such as openness, perseverance, and risk-taking behaviors. Lubart et al (2019) go on to describe the affect-related characteristics as linked to an individual’s mood and emotions whereas the environmental characteristics are considered the physical or social aspects in an individual’s life that can support or hinder creativity.

Lubart (1994) also recommended that when examining creative potential, it is not only important to look at the ‘ingredient’ but also the creative process in which the ingredients are involved to yield creative works. In other words, the ingredients must not only be present but also be put into action in a productive manner (process). A simplified view of this process can be defined according to two concepts that occur in cycles and they are: Divergent-exploratory thinking and convergent-integrative thinking (Lubart, Besancon & Barbot, 2011). The creative process will be discussed in more detail in the coming pages.

Measuring Creative Potential

Lubart, Zenasni & Barbot (2013) initially proposed that there are two main ways to measure creative potential. The first is more process-based and holistic whereas the second is more resource-based and analytic. The first approach involves asking individuals to produce creative work in an assessment situation where the individual is engaged in a timed, standardized task and the individual’s work is compared to other individuals who have completed the same assessment. Description of the second approach follows this section.

In 2011, Lubart, Besancon & Barbot developed the Evaluation of Creative Potential (EPoC) to assess children and adolescents’ creative potential and the battery offered a contextualized measure of divergent and convergent thinking processes covering many content domains. Initially, there were two domains of creative production evaluated and they included: graphic-artistic and verbal-literary. Soon after, five other domains were added including: social problem-solving, scientific, musical, mathematics and body movement (Lubart, Barbot & Besancon, 2019).

The two types of tasks in each of the domains include divergent-exploratory tasks and convergent-integrative tasks. With the divergent thinking tasks, the goal is to generate as many original ideas as possible using one prompt whereas with the convergent thinking tasks, the goal is to generate one elaborated production that takes into account all of the elements provided. Lubart, Barbot & Besancon (2019) expressed that the comprehensive creative process involves both of these two types of thinking.

Scoring high (two standard deviations above the population mean) on this measure is considered having high creative potential where creative giftedness can be identified (Lubart, Barbot & Besancon, 2019). The EPoC model is statistically validated as the different tasks originate from the four main factors of: Divergent Graphic, Divergent Verbal, Integrative Graphic and Integrative Verbal. These factors are then grouped by domain (Verbal vs. Graphic) which can determine an individual's creative potential in a specific field (Lubart, Barbot & Besancon, 2019).

In the second approach to creative potential, the ingredients or resources of creativity are inventoried rather than assessing an individual by having them produce samples of creative work. In this approach an individual undertakes several tasks to assess specific cognitive and conative resources and these resources combine in an interactive manner which results in a creative profile shown in Figure 1 (Lubart, Zenasni & Barbot, 2013).

The five cognitive resources include: Divergent thinking, analytic thinking, mental flexibility, associative thinking and selective combination or the capacity to synthesize disparate elements in new ways. The five conative resources include such components as: Tolerance of ambiguity, risk-taking, openness, intuitive thinking and motivation to create (Lubart, Zenasni & Barbot, 2013). It is further noted that the creative profiler approach for adults consists of measuring the likelihood that an individual's profile is relatively the same to an "optimal" creative profile for a specific kind of creative work in a given domain. In this approach, an estimation can be given of an individual's creative potential without having the individual participate in an actual creativity activity.

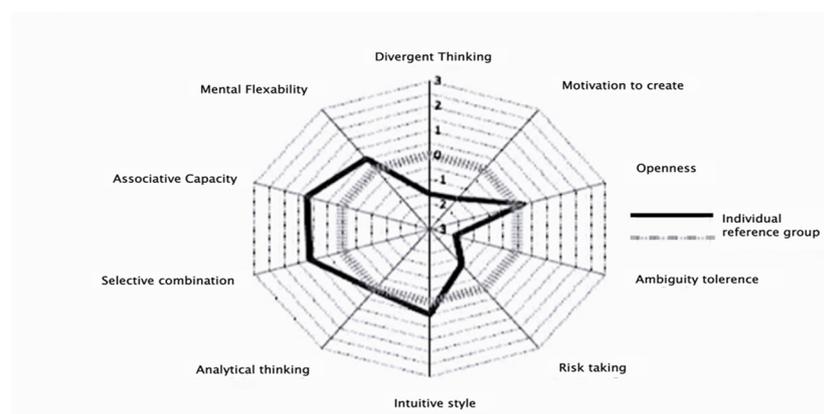


Figure 1: Creative Profiler (Lubart, Zenasni, Barbot, 2013)

Lubart, Barbot and Besancon (2019) indicated that there are three; not two, main ways to assess creative potential and they are: i. portfolio of creative accomplishments, examining the individual's ingredients of creative potential and ii. measurement of the creative process. Since the ingredient and creative process methods have been reviewed above it is worth focusing some time here on the creative portfolio.

The portfolio method of evaluating creative potential examines an individual's portfolio of creative works that is typically assessed by qualified judges within a specific field or domain. Self-report biographical inventories of past accomplishments might also be used with this method where individuals indicate whether they have or have not experienced any of the listed accomplishments considered creative (Lubart, Barbot & Besancon, 2019).

Lubart, Zenasni, & Barbot (2013) asserted that creative potential can be defined and measured. For children and adolescents, the EPoC can be used to measure their creative potential whereas the creative or multivariate profiler approach can be utilized with adults focusing on the ingredients or factors that underlie creativity. On an individual level, measuring creative potential allows individuals to identify tasks and domains where they may have the greatest creative potential and thus helpful for career planning. In addition, the EPoC allows for creative giftedness to be identified (Lubart, Barbot & Besancon, 2019). On a larger scale, examining creative potential in both children and adults can be beneficial for future educational and training programs.

The Multivariate Approach

It is clear there are large individual differences in creativity and there is constant and ongoing debate on the extent to which the same basic components underlie the diverse expressions of creativity (Lubart & Thornhill-Miller, 2019). Furthermore, variations on the quality and quantity of each component, along with the combination of the multiple ingredients, can lead to a wide range of creativity observed across individuals (Kaufman & Beghetto, 2009; Sternberg & Lubart, 1995).

Sternberg and Lubart (1996) found that most approaches on the topic of creativity have been unidimensional focusing on one or another aspect of creativity without considering other aspects. The tendency to isolate a single element of creativity has had the effect of distorting the findings of research where the single feature is taken to be the entirety of creativity, while other equally critical elements are ignored. It is Sternberg and Lubart's (1996) recommendation that confluence theories should guide the field of creativity along with these theories being developmental if they wish to achieve their full purpose (see figure 2 on the next page).

The multivariate approach to creativity has been progressively considered since the 1980s. Lubart, Mouchiroud, Tordjman and Zenasni (2015) summarized the main factors of this approach in a general model, as depicted in Figure 2, including the cognitive, conative and emotional profile of an individual as they interact with the creative requirements of a specific field. This is what determines the creative potential of an individual within a certain do-

main. Furthermore, according to Lubart (1999) the interaction and relationship among the factors varies according to the respective theories.

Cognitive factors take into account an individual's intelligence (IQ) and conative factors comprise cognitive styles, personality and motivation. Emotions also play a role in this configuration and the interaction between these three factors can potentially result in a creative production (Kirsch, Lubart & Houssemand, 2016). The total value of this result can be assessed by the respective social context, which can include the family, work or school environment, and society and culture from the broadest and macro-level perspective.

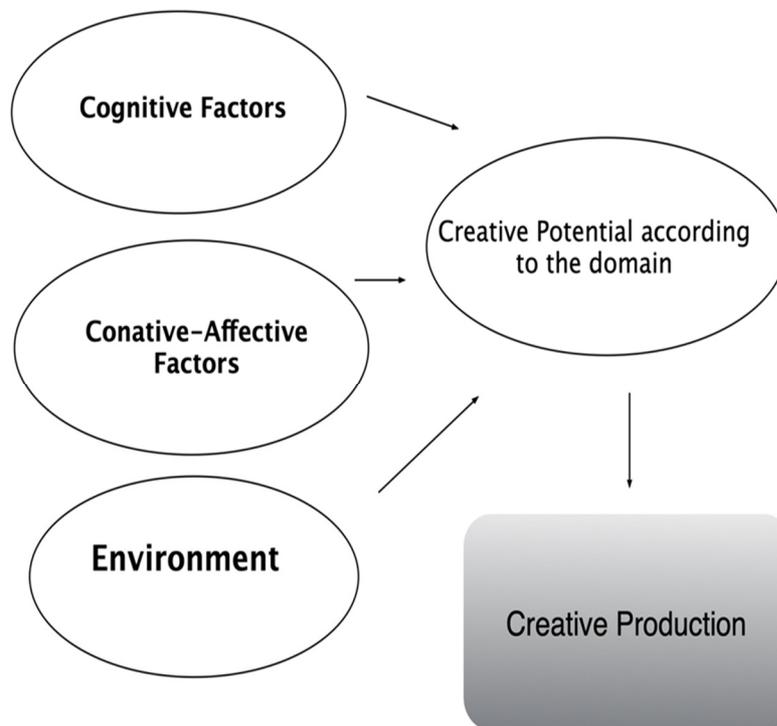


Figure 2: Multivariate Approach to Creativity (adapted from Sternberg & Lubart, 1991; 1995 and Lubart, Mouchiroud, Tordjman & Zenasni, 2015)

To summarize, the multivariate approach examines more closely the multiple factors necessary for creativity and the interactions of these factors during the creative process to determine the wide range of creative achievements (Amabile, 1996 and Lubart, 1999). More than a century of research has now investigated these factors and the role they play in creativity and this research will likely continue in the future in hopes of gaining additional clarity.

Seven C’s of Creativity

To “sail the seven seas” is applied to the field of creativity by describing the main lines of research by using a comprehensive approach as compared to the seven main bodies of water on earth (Lubart, 2018a; Lubart & Thornhill-Miller, 2019). The seven C’s include the Creators (characteristics), Creative process (creating), Collaborations (co-creating), Contexts (environmental conditions), Creations (nature of the creative work), Consumption (adopting of creative products) and Curricular (developing creativity). These most important factors within this creative thought plan are worth highlighting with some elaboration and examples.

Creators and their creative potential

Creators simple refers to the people who create (Lubart, 2018a) and the notion of creative potential is that every person can be characterized as a creator and as having creative potential (Lubart & Thornhill-Miller, 2019). This may show up in an individual’s personal life, professional life or occur at a more intimate intra-personal level. It is also possible to view an individual’s life path and development of self as a creative act, event or process (Lubart & Thornhill-Miller, 2019). Furthermore, Lubart & Thornhill-Miller (2019) explained that there are person-centered and context-centered factors that provide the basis for an individual’s creative potential and can also be latent and not even available unless an individual actively engages in a creative task. Table 1 provides a comparison of Person-centered and Context-centered ingredients.

<u>Examples of Person-centered Ingredients</u>	<u>Examples of Context-centered Ingredients</u>
Divergent Thinking	Openness to Experience
Convergent Thinking	Idiosyncrasy
Mental Flexibility	Risk-Taking
Analogical & Metaphorical Thinking	Tolerance of Ambiguity
Associative Thinking	Creative Self-Concept
Analytic-Evaluative Thinking	Intrinsic Motivation
Knowledge	

Table 1. Person and Context-centered Ingredients (Lubart & Thornhill-Miller, 2019)

Creative potential can also be thought of as the resources that an individual can profitably invest in any given activity, such as writing a piece of music or coming up with an invention and Lubart and Thornhill-Miller (2019) related that a process, called creating, ultimately needs to lead to a resulting creation or product. Lubart (2018a) indicated that his goal over the past quarter of a century has involved creativity from an individual-

differences perspective to grasp the essential nature of the *homo creativus*. Using this term highlights the fact that humans are, by nature, constantly producing new ideas and actions (Lubart, 2018a).

Lubart (1994) and Steinberg and Lubart (1991, 1995) have summarized numerous research investigations that have supported the importance of certain personality attributes for creative functioning and these include but are not limited to the following: Self-efficacy, a willingness to overcome obstacles and take sensible risks, and tolerate ambiguity. These important characteristics go along with the Investment Theory that will be presented later in this chapter that emphasizes the creative individual as the person willing to stand up to conventions (Sternberg & Lubart, 1999).

Sternberg and Lubart (1995) further have pointed out that the creative individual is often not recognized until long after they become successful. However, in almost every instance those individuals have had to sustain courage and perseverance over long periods of time in order to reach the level of achievement needed to be recognized and appreciated. These are important skills for the creative individual.

The Creative Process & Resulting Creations

Lubart (2018b) suggests that the creative process is the sequence of thoughts and actions that are involved in the production of new work that is considered both original and valuable. Many personal accounts of creative activity connecting observations and theories have been closely examined across domains in order to demonstrate the broad perspective on the creative process (Lubart & Thornhill-Miller, 2019) and Lubart's (2018b) work has sought to compare and contrast the creative process across domains.

Early on in 1926, Wallas described the creative process as having four distinct stages including: preparation, Incubation, Illumination and Verification. Preparation refers to the collection of background knowledge and active thinking; Incubation is the reworked mental activity of ideas; Illumination the "eureka" moment when a new thought or idea emerges; and Verification where new ideas are tested and refined (Lubart & Thornhill-Miller, 2019). However, Lubart (2018a) indicated that the creative process is by nature highly individualized and these reflections have led to theoretical and empirical contributions to process issues.

In describing the creative process, Lubart and Thornhill-Miller (2019) discussed the critical components of divergent and convergent thinking and some of the process-oriented measures of creative thinking. These creative thinking measures were developed to assess the degree to which individuals can engage in the creative process. Lubart, Besancom, and Barbot (2011) proposed the Evaluation of Potential Creativity (EPoC) based on the process-oriented approach that was discussed earlier in this chapter.

Emotions in the Creative Process:

Lubart and Thornhill-Miller (2019) added the importance that emotions play in the creative process. For example, it was suggested that individuals may better be able to express their emotions while participating in creative productive work. On the flip side, engaging in creative productive work may lead individuals to experience emotions resulting from their creative thinking pro-

cess. A large number of studies have examined this also with mixed results but one main finding seems to be consistent and that is enhanced divergent thinking productivity occurs in the presence of a positive mood state (Lubart and Thornhill-Miller, 2019).

Lubart (2018a) also discussed his work that involved a specific model of creative associative thinking focused on an individual's emotional experiences. Lubart & Getz (1997) found that emotional traces in memory can serve as cues to connect concepts that are cognitively distant but emotionally similar. This demonstrated the idiosyncratic associations that can enter into the creative process since emotional experiences are both complex and individualized (Lubart, 2018a).

Diversity in the Creative Process:

Lubart and Thornhill-Miller (2019) also recognized the importance of diversity with which the creative process can unfold while also understanding that the creative process varies from individual to individual and across tasks and within different domains. In addition, each individual creator can engage in their own personalized sequence of the creative process rather than following a strict formula.

Lubart and Thornhill-Miller (2019) share that the creative process is a meaningful personal endeavor with purpose and goals and the creative process in general results in a new state (outcome) from which it originated. This new outcome will be substantiated by a production or creation of something that was not present at the onset. "These creations are traces indicating that a process was engaged" (Lubart & Thornhill-Miller, 2019, p. 291) and the production can be tangible or intangible. What will determine the creativity of the work however is the extent to which the resulting creation is deemed original and valuable.

Creations refers to the "productions that result from creators engaging in the creative process" (Lubart, 2018a) and the literature encompasses many studies that have examined the nature of work that leads to it being identified "creative". A production can be explored in terms of its formal characteristics and compared with other similar works or as a result of judges' evaluations of the creative work. Current work and trainings are underway in this area to support inter-judge agreement (Lubart, 2018a).

Creative Context

Lubart (2018a) suggested that the physical and social worlds provide the context in which creators create and it can be described as a multilayered environment (Lubart & Thornhill-Miller, 2019). Some of Lubart's (1990, 2010) early work in this area identified different influences that macro-level cultural variation can have on creativity such as the differences between the *Western* and *Eastern* views of creativity.

Lubart & Thornhill-Miller (2019) stressed that all contexts need to be looked at including the more intimate family, school and work environment along with the bigger geographical – national and international – contexts. Environmental factors and features in these contexts impact creativity and access or limitations to affordances in an environment also plays a part in a creative context.

In terms of the context of work, Sternberg and Lubart (1995) reviewed research that examined the many variables in one's environment that affected creativity. For instance, an environment rich with stimuli encourages creativity and cues in the environments (including physical, visual or auditory) are important to consider, along with the type of environment, such as a relaxed versus a playful environment. Having a sense of humor was also discussed as being an important part of creativity. Ideally, choosing the environmental design and cues to fit the specific kind of creative work being accomplished would be considered the ideal scenario.

Lubart (2018a) shared some of the research he has been co-collaborating on involving the impact of virtual reality work environments on creativity. The research has investigated creative thinking in multiuser virtual settings and in some cases involving avatars. Since more workplace environments are moving towards virtual settings, this research looking at certain environmental conditions and the impact on creative performance will offer valuable information now and in the future.

Sternberg and Lubart (1995) further suggested that an individual's school environment can inhibit creativity due to a low tolerance for failure; thus, leading to students that are risk averse. Risk aversion can develop early on and escalate as students progress throughout their education. Good work tends to be rewarded whereas failure often is punished. In addition, risk-taking tends to be discouraged in school which results in students opting for the safe route rather than the more challenging one.

“One of the problems with the culture of the schools. ... is that students never learn how to take sensible risks, a skill that will be needed if they are going to do genuinely creative work”.

- Sternberg & Lubart, 1995, pp. 48-49)

There has been a vast amount of research conducted in this area, along with research on cultural variations and creativity as Lubart (1999b) has discussed. The differences in the creativity definition, domains in which creative work is valued and the extent to which creativity is encouraged can be seen across cultures where some cultures solely value the creative act while other cultures place more value on evidence of creative thinking. Still, other cultures value individual creative feats while others value the collaborative model. Lubart, Glaveanu, De Vries, Camargo & Storme (2019) found that some cultures express a strong need for respect of tradition, which then may place lesser value on risky or culturally new endeavors.

In sum, when looking beyond to all cultures, it is easy to discover how deeply creativity is tied to cultural context (Lubart, 1999b). Culture is not only involved in defining the nature of creativity but also the creative process. The Western definition tends to rely on a product and originality-oriented approach whereas the Eastern view of creativity can be more viewed by the expression of an inner truth in a new way or of self-growth.

Collaboration

“The process through which two or more people, often with different or complementary skills, engage in shared creation, frequently producing something that they could not or would not produce on their own.”

- Lubart & Thornhill-Miller, 2019, p. 286

Lubart (2018a) indicated that the term collaboration refers to all of the social contacts that a creator has with other individuals who participate directly in the creative work and it is believed that the future of human work will be more collaborative and creativity-focused. The creative genius working solo may still exist in some fields but for the most part, factors such as globalization, the complexity in technology and the concomitant specialization of expertise has led to collaborative work becoming more of a necessity. With that in mind, Lubart and Thornhill-Miller (2019) suggested that understanding creativity should not be confined to just the intra-individual investigations but must also be viewed at the more sociologically inter-personal and systemic levels.

Collaborating with Computers & Robots

The topic of collaboration is not necessarily limited to human-human interactions and Lubart (2005) reflected on the ways that a computer could support or contribute collaboratively to the creative work. He examined the different ways computers can be involved in creative work and developed a classification based on four categories of human-computer interaction to promote creativity. The four categories include: Computers may facilitate 1) the management of creative work, 2) communication between individuals collaborating on projects, 3) the use of creativity enhancement techniques and 4) the creative act through integrated human-computer cooperation during idea production (Lubart, 2005).

Fast-forward fifteen years, Lubart, Esposito, Gubenko, and Houssemond (2021) examined the interaction and collaboration between creativity in humans and robots and related that the field of human-robot interaction overcomes the focus on individuals and puts creativity in a more social context. In this research, Lubart and his colleagues examined three ways that robots can interface with creativity. First, it was indicated that social robots can be designed to interact with humans. Second, social robots can be seen as creative agents with humans supporting the robot’s production and lastly, they suggest that there can be a collaborative or action in the divided work for creative projects. These three categories – humans supported by robots, robots supported by humans and human-robot teams called humbots – can mutually complement and empower one another.

Future research in this area of collaborating with computers (robots) is important with many opportunities to develop each category. An example would be examining existing creativity techniques to implement in social robots. In addition, robot creators can develop more advanced technology to boost robots’ creative productive capacity and agency (Lubart et al, 2021). What will be critical is that there will be a shared understanding of human

goals and intentions and the ability to perceive them. This will require a multi-disciplinary effort from many areas of expertise and collaboration to address this creative social-interaction model of the humbots which are socially situated artificial agents (Lubart et al, 2021).

Consumption of Creativity

Consumption refers to the “adoption of novel productions by the public, in the marketplace of ideas or goods” (Lubart, 2018a). It involves the audience and its characteristics. Consumption has also been known to be a creative act in itself as consumers bring something to the product by adapting it in some way and making it meaningful.

The term consumption highlights the link between creativity and innovation and Lubart & Thornhill-Miller (2019) discussed this topic at both the macro- and micro-economics level which is reiterated here. At the macro level, the consumption of creative goods has been recognized as one of the main sources of long-term economic growth (Lubart & Getz, 2011). In general, novel productions that meet a need will attract attention and create economic growth (Lubart & Thornhill-Miller, 2019). At the micro-economic level, consumers are thought to be attracted to creative goods for their stimulating value. The consumer is thought to value the unknown and discovery-oriented experience. However, like with anything, some individuals will be more likely to adopt new ideas, products or processes (Lubart & Thornhill-Miller, 2019).

Curricula and Enhancement of Creativity

An important topic in the literature is how to develop and teach creativity (Lubart, 2018a). All levels of the educational system are asking this question and Lubart and Thornhill-Miller (2019) have summarized an overview of what is being accomplished in a broad global sense such as with active learning methods and pedagogies of creativity training to a more personal investigation of inter-related skills and characteristics of creative individuals.

Creativity training can take various forms where knowledge and expertise on creativity can be taught with the goal of raising awareness or by teaching through role-modeling of creative behaviors. Teaching specific creative techniques or strategies are often focused on the adult population in workplace contexts. However, it does appear clear that creativity can be developed and enhanced through training and education and boost original thinking in both children and adults. Besancon & Lubart, 2015; Besancon, Lubart, & Barbot, 2013) explored several ways that can be pursued to enhance the development of creative ability both in children and adults.

Creativity and the Investment Perspective

“Buying low and selling high can be a way of life – it’s an attitude toward living. Some people choose to live creatively, others don’t ...you can choose to follow the crowd, or you can choose to go your own way.”

- R. J. Sternberg & T. LuBart (1995, p. 76)

The standard advice in the financial world, “buy low and sell high” may seem obvious to most, however Sternberg and Lubart (1995) demonstrated this is not always the case. Investors and individuals in general have to be bold and willing to take risks that others are not willing to take and it has been shown that being bold can be difficult as it involves risk-taking.

Successful creative performance has a lot to do with buying low and selling high as this means actively pursuing ideas that are unknown but at the same time have tremendous growth potential (Sternberg & Lubart, 1995). In addition, selling high involves knowing when to move on to new projects. This occurs when others recognize the value of a highly creative idea and when it becomes highly sought after. Taking risks comes to the forefront as initially strange or bizarre ideas become what people now want. This paradigm shift can be seen in many different domains, not only observed in the financial world but in other fields such as business and art and at all levels in an organization. No matter what field, those that are succeeding are doing so because they find a way to distinguish themselves from others.

The same principles of buying low and selling high can also be applied to one’s personal life (Sternberg and Lubart, 1995) and for relationships to thrive, there needs to be a creative component where there are new shared experiences occurring consistently. Becoming stagnate or continuing to do the same thing over and over will not help a relationship grow and it is the changes and creative risks that will keep relationships alive and moving. When one deviates from the norm (buying low) and feels a sense of uncomfortableness this is a step in the right direction to selling high.

Furthermore, Sternberg and Lubart (1995) encouraged individuals to not think in terms of just safety in numbers and adopt the views of a group but rather think for themselves and open up to seeing things differently. The creative solution lies in the ability to fight against the tendency to do what is expected. The rewards of creative work are often minimal, especially at the start, and the short-term payoffs are for going with the crowd. However, the ability to delay gratification even if that means spending years on a project will contribute greatly to a creative production.

Resources for creativity

Sternberg and Lubart (1991) discussed the investment theory of creativity as being conceptualized on four different levels including resources, competencies, projects and evaluation and related how they are intertwined. The six creative resources include: Intellectual processes, knowledge, cognitive style, personality, motivation, and the environment. When these six resources come together, they give rise to creative competencies which then can lead to creative projects. Sternberg and Lubart (1991) further related that the evaluation of a product is based on social consensus from various constituents (judges) in a particular environmental context.

Lubart et al. (2015) indicated that creative resources belong to four main categories which include: cognitive resources, conative resources, affective resources and environmental resources. Furthermore, Sternberg and Lubart (1995) considered the expression of creativity as more than just the sums of its parts by indicating that below a certain threshold of a single resource (knowledge or motivation) creativity will not be able to manifest itself

despite how prominent the other resources might be. This can be summarized by making the assertion that compensation among resources is limited and resources only act in the presence of other resources and is determined by their interaction.

The six resources for creativity including: aspects of intelligence, knowledge, thinking styles, personality, motivation and the environment can be linked into the single concept of buying low and selling high. Essentially, to be creative an individual needs to buy low and sell high in the world of ideas similar to the financial world where successful investors must do the same. However, it is the few creatives that actually do this.

Thinking style in this theory refers to a preference for thinking in novel ways and one in which rises above just following the crowd. For an individual to prefer this thinking style they need a certain type of personality that is capable of defying the crowd and the motivation to be persistent to overcome the many obstacles that will be encountered in any creative endeavor (Sternberg & Lubart, 1995). Furthermore, the environment that is most conducive to creativity is one that reduces some of these obstacles, reduces the risks inherent with a new idea, and rewards the individuals who are courageous enough to take the risks that are still involved.

**Recipe for Creativity:
Investment Theory of Buying Low & Selling High
(Sternberg & Lubart, 1995)**

- Generate options that others don't think about and recognize the good ones (intelligence)
- Have knowledge of what others have done (or not done) in your field (knowledge)
- Enjoy thinking and acting in creative and contrarian ways (thinking styles)
- Be willing to take risks and overcome obstacles throughout life (personality)
- Have extraordinary drive to put thoughts into action (motivation)
- Work, live and be amongst others that allow creative endeavors (environment)

Sternberg and Lubart (1995) indicated that there is a recipe with specific ingredients when looking at creativity from a “buying low and selling high” perspective. This conceptualizes what is known as the Investment Theory which involves six creative components or resources working and interacting together for the ultimate creative result or product. When these ingredients come together, it will allow the perfect recipe to emerge that will be sought after by creators far and wide.

Concluding Remarks

The field of psychology has intertwined with creativity in many important ways over the years and Todd Lubart is a huge influencer with bringing these two fields together. Lubart's depth of research and work on numerous grants and projects in the two related fields over the past 25 years has impacted the way we view traditional psychological and creative processes. He has clearly demonstrated the importance of not only bringing the fields of psychology and creativity together but also the experts in collaborative ways for enhancing our learning. Lubart has also shown tremendous personal creativity by continuing to emphasize, employ and build upon his seven C's model and connect these concepts into his teachings and research. These concepts include the importance of viewing creativity from a multivariate approach and considering the many elements of creativity such as: the creative potential of an individual, the creative process, the creative and collaborative environment, the curricular creative activities and creations and the consumption of creative ideas, products, and processes. Lubart also keeps moving with forward thinking by encouraging the future examination of important topics such as collaboration with computers and robots and curricular global advances.

Although Lubart has over 200 publications, this chapter brought to light just some of his work to provide a glimpse of his comprehensive and broad views and concepts. This chapter brings in the research not only from Lubart, but also from his colleagues, past mentors and students and other researchers and well-known authors in the field of psychology and creativity that he has collaborated with over the years. Lubart clearly practices what he preaches in terms of collaboration.

Creativity indeed has a unique meaning to each individual and in turn challenges society as a whole to expand and build upon the already existing work related to creative thought, co-collaborative endeavors and problem-solving. Lubart's work has encouraged his colleagues, students and future researchers to continue to expand their knowledge and by keeping an open mind in the process and taking creative risks to enhance not only their personal lives but society as a whole.

Author's Personal Note and Impact

I am extremely grateful to have been asked to write this chapter on Todd Lubart, who has contributed a wealth of influential research in the areas of creativity and psychology. As I underwent this focused journey on learning more about one of the most important pioneers in the field, I found myself immersed into my own creative process involving both divergent and convergent thinking throughout my own research, reading, and writing. I found myself leaving intentional room to incubate on my own new learning and examining how I can better apply the concepts in my everyday life. Being immersed and doing this intentional work continues to shine the light on the importance of creativity and the strong impact that so many experts in the field like Lubart has had not only in my daily personal life but also on my students who will be the future leaders of tomorrow.

My goal was to do great work by highlighting the many achievements of Todd Lubart and bring attention to some of his most important creativity concepts and theories over the last quarter of a century. My hope is that this chapter and small glimpse into his work did his amazing work the justice that it deserves. Lubart is not just an exceptional professor, researcher, and author in his field, he is a true creator, co-collaborator, and leader in psychology and creativity. Todd Lubart has made his mark on millions of individuals around the world and will no doubt continue to influence many more for years to come.

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