CREATIVITY 101

SECOND EDITION

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Creativity 101
Second Edition
James C. Kaufman, PhD

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I dedicate this edition, like the first edition, to my mentor and advisor, Dr. Robert J. Sternberg, who has continued to be a source of advice, inspiration, and perspective, even when he doesn’t have to do so anymore.
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Many, many people helped with the first edition, and I thank them all. Writing this second edition has felt more like writing a new work than a revision; some sections are intact, but much has been a completely new journey. About two-thirds through the process, my hard drive crashed. It was lost, and I’d managed not to back up anything for the eight previous months. Thankfully, I’d e-mailed the book to someone the day before—but all of my new references were lost. I debated pioneering a new, reference-less approach to the material, but instead found two graduate students who helped make this new edition possible by compiling all of the references—a very special thank you to Cody Hatcher and Xiaochen Liu. My past and present UConn PhD students (Paul J. Barnett, Sarah R. Luria, and Lamies Nazzal) have also given helpful feedback and insight.

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As I finished this new edition, I also saw my musical, Discovering Magenta, finally make its New York City debut after so many years; revisiting my own creativity with my composer Michael Bitterman, director Valeria Cossu, and the cast and crew has been a profound and terrifying experience. After more than a decade, I am once again working on new plays.

In a recent column for the Chronicle, my once-and-always advisor Robert Sternberg urged academics to pay heed to family. Although I crank out a lot, I’ve generally been able to keep my evenings and weekends free to spend with my family and friends because I like them. I am lucky to have so many dear friends in the creativity community (John, Ron, Zorana, Scott, Jonathan, Roni, etc.), and moving back East has meant getting to see my dear friends Dave Hecht and Nate Stone and their families. My sister Jennie Kaufman Singer and her family have been a wonderful source of strength and friendship, as have my...
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Introduction

I was asked during an interview about my intended audience for the first edition of *Creativity 101*. Squelching my initial response (“anyone who has $25”), I thought about it and realized that I didn’t know. Mostly I wrote the book I wanted to write (and read). It was never intended to be a vast brick of a book that had every bit of information about creativity, nor was it designed to be a breezy, citation-less chat. In revising the book, I’ve revisited lots of feedback, especially the anonymous kind—from letters from college students to Amazon reviews to publisher-solicited professional responses—as well as discussions with trusted colleagues.

When I first started writing *Creativity 101*, I was ready to defend the study of creativity from those who would diminish it. The original book started with a story about a time I was interviewed by a journalist who asked me, “Engineers give us better machines. Doctors find cures. What does studying creativity do? Does it make better art? Is the goal . . . to destroy the artist—and perhaps art itself—through a process of reductive demystification?” Aside from being an interesting break from the usual questions (such as “Are all creative people crazy?”), this discussion made me think carefully about why studying creativity is important.

I thought (and still think) that the study of creativity *does* give us better art, and far from destroying the artist, I think it can improve an artist’s life. Or a scientist’s life or a businessperson’s life; creativity affects a lot of different people. Studying creativity and learning more about it also help make the case that creativity is important. This
statement—“creativity is important”—is not, however, a given assumption. On one hand, it is hard to imagine a teacher or a boss saying that he or she didn’t want a creative student or employee. People who value creativity may point to its role in inventions, in culture, in progress—in short, to most things that define our civilization. Yet if creativity is so essential, why is it so absent from most educational or business assessments? Why are there so many negative associations and perceptions and myths about creativity?

In the years that have followed since I wrote the first edition, I feel like creativity needs a little less defending. It’s one of the official 21st-century skills. There have been multiple new journals created, dozens and dozens of new books, and countless new papers. Yet, conversely, creativity is not always helped by those who beat its drum. As creativity becomes a buzzword, it brings new people to the table—people who are usually not academics. In some ways, this development is wonderful—it can be a sad (and common) thing when academics only talk in academese to other academics (academic academic academic). But oftentimes, experts in one topic (such as business or education) will assume they are experts in other areas (such as creativity). Such an overestimation of his ability led Nobel Prize winner/transistor inventor William Shockley to loudly spout off about intelligence, race, and eugenics (and publicly donate sperm to the Repository for Germinal Choice, or at least publicly announce his plan to do so); he is but one of many presumably bright people who seem to specialize in saying stupid things about an important topic. Without going into details (it takes at least two drinks), some “creativity” experts are as knowledgeable about the topic as I am about cheese. I mean, I like cheese and I eat a lot of cheese. I am vaguely aware that cheese is something that happens when milk gets angry. But I know enough to not tell people which cheese to buy or suggest new methods for curdling milk. Yet these books (on creativity, not cheese) nonetheless flood the market and make it hard to figure out the truth. As a researcher, I can usually tell the difference between science, pop psychology, psychobabble, and pseudoscience, but I’m not sure I could if I wasn’t enmeshed in the field. Creativity is certainly not unique in attracting so many nonexpert experts (I imagine the folks who study nutrition or climate change have it much worse), but it’s more than just a nuisance. Thanks to the “University of Google,” it’s much easier to find wrong information on creativity.
than ever before. As a result, a certain Ouroboros (snake eating itself) effect has happened in that creativity still isn’t accepted by the scientific establishment. When I spoke to an officer at a major granting agency this past year, she strongly urged me not to use the word “creativity” in my application because the committee would think it was soft and fluffy. Perhaps we haven’t come quite so far.

Avitia and Plucker (2014) did an overview of books about creativity that could potentially serve as textbooks (including the first edition of this book). They highlighted 13 themes of these books: theories/definitions, domain specificity/generality, types of creativity (levels of c), measurement/assessment, cognition and development, neuropsychology, mental health, personality, motivation, case studies/biographies, role of groups/organizational creativity, education, and enhancement/efficacy. Each book profiled had its strengths and weaknesses in terms of coverage. This overview made me really think about what should be included in the revision. Some topics on their list were things I already covered extensively. Other topics (case studies/biographies) I see as a little less central to how I see the field of creativity. There are also topics I acknowledge as being important, but I also recognize my own limitations. For example, although I briefly cover the neuropsychology topic in this book, it’s a little out of my knowledge base (which didn’t keep me from co-editing a book on this topic that has a lot of information; see Vartanian, Bristol, & Kaufman, 2013).

Their themes inspired me to more directly highlight topics such as measurement/assessment and to cover in more detail such themes as role of groups/organizational creativity and enhancement/efficacy. That said, I have my own biases and specialties. My background is in psychology (specifically cognitive psychology), and I tend to take an individual-differences approach.

A brief note about all of the Kaufmans in this book—I do cite my own work quite a bit (I’m human), so J. C. means it’s me. Then you have A. S. Kaufman and N. L. Kaufman, who are my parents, Alan and Nadeen. A. B. Kaufman is my wife Allison. S. B. Kaufman is my dear friend Scott Barry (no relation). And Kaufmann and Kaufmann are my friends Geir and Astrid. I have trouble sorting it all out myself.

In any case, this revision is my attempt to continue to add my voice to the mix. It’s definitely not an encyclopedia (nor was it ever intended to be). It’s not a layperson book (too many citations, which apparently are very distracting to some readers). It’s not a textbook
INTRODUCTION

(too much opinion). It's . . . Creativity 101: The Sequel (This time . . . It's professional).

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Creativity 101, Second Edition
James C. Kaufman, PhD
The Basics
What is creativity, anyway? Are you creative? Is your kid creative? Or your parrot? How about Bill Gates or J. K. Rowling or Lady Gaga? Kim Kardashian or Paris Hilton? Or the CEO of Nike or the starting second baseman for the Minnesota Twins or the advertising copywriter who wrote, “That’s a spicy meatball!”?

Is Bobbie Gentry, who wrote and sang “Ode to Billy Joe” in 1967, creative? Would it change your answer if you realize she hasn’t been active as a singer or songwriter for the last three decades? Would it matter if she had died (she hasn’t)? What about J. D. Salinger, who stopped writing publicly in 1965, yet seems to have continued writing until his death in 2010? A recent biography (Shields & Salerno, 2013) indicates that there may be a stream of new Salinger books available with his passing. How will your view of Salinger’s creativity change if these books are published? Each new book may be a new masterpiece—or they may detail the further adventures of Holden Caulfield, teenage crime-fighter. How did your mental summary of Harper Lee’s creativity change with the publication of Go Set a Watchman?
How about Vivian Maier, a nanny who took amazing street photographs? She was completely unknown when she died in 2009 (indeed, many of her pictures were never developed). A few years before her death, the owner of her storage unit auctioned off a large box of her photos and negatives due to nonpayment; John Maloof purchased them and subsequently recognized her talent. Her work has since spawned posthumous galleries, books, and a documentary (Bailey, 2013).

Or what do we do with Elisha Gray? The engineer worked on an early prototype of the telephone, and many historians claim that Alexander Graham Bell barely beat him to the patent office; others even claim that Bell stole his designs (Evenson, 2001). Gray’s certainly creative (he patented 70 other things and is called the father of the music synthesizer)—but is he a creative genius? Or would that only be true if he was clearly the creator of the telephone? Is Alexander Graham Bell a creative genius?

Think about a beautiful abstract painting. Is that creative? What if you knew that the artist literally threw the paint onto the canvas randomly, never even looking at the final product—would it still be creative? What if it was painted by a 3-year-old? Or a chimp? Or a computer?

Is everyone creative? Or is that like giving participation ribbons to everyone who enters the country fair pie-eating competition, even the guy who ate a little crust and then fell asleep? If we’re all creative, then maybe none of us is creative, to paraphrase The Incredibles.

DEFINING CREATIVITY

The easiest way to figure out some of these questions is to start with a definition. A lot of articles about creativity say that there’s no universally agreed-upon definition, and I suppose in a very technical sense that might be true, just as there’s no universally agreed-upon definition for literature, love, pizza, or turtles; there’s always someone who will argue that turtles are actually winged insects from the Lepidoptera family and that we’ve been mislabeling butterflies. But we really do have a pretty consistent definition for creativity, and
those who claim otherwise have not delved deeply in the literature (Cropley, 2015).

Most creativity researchers consistently focus on two key determinants, and these core concepts have stayed consistent for more than 6 decades (Barron, 1955; Guilford, 1950; Stein, 1953). First, creativity must represent something different, new, or innovative. If I ask you to sing me a creative song and you sing “Happy Birthday,” it’s not something original (and you might get sued because, shockingly, it’s still under debatable copyright protection). If you mumble “La, la, la,” then it’s likely not terribly new, either. But being blazingly different is usually not enough. Someone like John Zorn, an avant-garde composer, might create a symphony called Kristallnacht that has long stretches of no sound but breaking glass and have the piece accepted as a brilliant work of art (albeit one with a warning label that cautions that repeated listening may cause permanent hearing loss). If I ask you to sing a creative song and you respond by breaking my windows, you don’t get to come over to my house again.

It isn’t enough to just be different—creativity must also be appropriate to the task at hand. A creative response is useful and relevant. I say I’m hungry and you prepare a bowl of steamed bolts. It’s unusual—it may be the first time I will have been served such a dish—but it’s not useful. I will still be hungry if I eat the whole bowl, and I will likely have intense intestinal discomfort to go with it.

The need for task appropriateness is harder to intuitively grasp and, indeed, it may be less important than originality. One study found that ratings of originality were more predictive of (independent) creativity ratings than those for task appropriateness, with the latter ratings most important to distinguish highly original ideas (Diedrich, Benedek, Jauk, & Neubauer, 2015). That said, both “new” and “appropriate” are absolutely necessary; neither is sufficient by itself.

In other words, creativity is an all-or-nothing multiplicative game. Simonton (2012) frames it as Creativity = Originality × Appropriateness. If there is zero originality or zero appropriateness, then you have zero creativity (if you have the capacity to successfully multiply by zero and get a positive number, then we should talk; I see a bright future on late-night talk shows).

Again, to clarify—you could have the MOST ORIGINAL IDEA EVER (one that involves dancing calamari, three-piece suits on
albino badgers, and the New York Philharmonic putting their socks on their feet and singing the entire score of *The Marriage of Figaro* a cappella). But if it is not appropriate to the task at hand—if it is not useful or relevant but simply original to the point that we worry about schizophrenic tendencies—then you WOULD NOT BE CREATIVE.

There have been several suggestions of a third component. Sternberg and colleagues (Sternberg, 1999; Sternberg, Kaufman, & Pretz, 2002) argued that in addition to something being original and appropriate, it should also be of high quality. Relatedly, Hennessey and Amabile (2010) defined creativity as being a “novel product, idea, or problem solution that is of value to the individual and/or the larger social group” (p. 572). It is reasonable to assume that something of value is also task appropriate.

Another recurring suggested third component is the idea of creativity being something unplanned and surprising. Boden (2004), for example, argued that creativity was novel, valuable, and surprising, and Simonton (2012) included new, useful, and nonobvious as criteria. Both Amabile (1996) and Perkins (2000) pointed out that creativity is less algorithmic/planned and more heuristic/unplanned; there should be an “Aha!” moment. As Simonton (2012) pointed out, these are all consistent with the idea of surprise.

Kharkhurin’s Four-Criterion Construct of Creativity (2014) attempts to integrate both Western and Eastern conceptions of creativity. In addition to the basic two constructs (which he calls novelty and utility), Kharkhurin proposes the more Eastern-related ideas of aesthetics (providing an essence or truth) and authenticity (reflecting one’s values and beliefs) as being part of the creativity equation.

Even as additional parts are discussed and proposed, the core pillars of new and appropriate remain the most often recited. Yet what does it mean to be new? Does something have to be a completely brand-new idea? How about a company that makes a generic version of a popular painkiller—is the company creative? What do you do about a case like George Harrison’s song “My Sweet Lord,” which was later ruled to be partially (if subconsciously) plagiarized from the Chiffons hit “He’s So Fine”? Or a child’s story that takes plot details from a summer blockbuster? Does *West Side Story* get dinged for being an update of *Romeo and Juliet* (those musical theater
buffs in the crowd can substitute, respectively, *Your Own Thing* and *Twelfth Night* and feel superior to the riff raff who don’t understand)?

Even the question of what constitutes “appropriate” is under question. I am reminded of a story from one of my former students (and frequent current collaborators), Melanie. She was talking about an event at her daughter’s school, at which the children drew a picture of what they wanted to be when they grew up—doctors, lawyers, princesses, and cowboys. When it was one little boy’s turn, he said, “When I grow up, I want to be a tuna fish sandwich.” Is this creative? Again, it’s certainly different—most children do not aspire to be sandwiches—but it doesn’t seem to meet the “appropriate” condition. Yet this example calls into question where to draw the line. What about the child who wants to be a princess? That’s at least possible (there are some unmarried princes lingering around somewhere), so it seems to be appropriate (if not terribly original). When does a child’s aspiration cross the line from appropriate and therefore potentially creative to inappropriate? What if a child wants to sniff armpits for a living? I mean, it’s possible, isn’t it?

There tend to not be recurring themes in nonfiction books; there are no Billy Pilgrim time jumps or gigantic billboards of eyeglasses to deconstruct. But there are questions that will pop up several times, such as: *Who gets to decide what’s creative?* The answer to that question can lead to a series of even deeper questions. My friend and colleague Vlad Petre Gla˘veanu likes to ask *How is a thing creative?* I am often drawn to the question of *Who is creative?* Think about how you would respond to these questions.

There are some questions that have been answered with a reasonable consensus, but many more that are answered with more questions. Resist the temptation to think, “Ah, see, there is no way of studying creativity after all—they don’t agree!” Science doesn’t work that way, particularly as told in the popular press. We are drawn to stories more than facts, which is why it is rare for a scientist deep in the trenches of active research to cross over with a bestseller. I try to find some stories in the facts, but I’m not going to willfully ignore or misinterpret results to tell a prettier story (I could easily ignore or misinterpret out of blissful stupidity, of course). Despite such inconsistencies or disagreeing studies, we have a pretty decent understanding of what’s creative.
A LITTLE HISTORY

The history of creativity research within the field of psychology has two “eras” so far—before 1950 and after 1950. Before 1950, there was little serious research being conducted on creativity. Prominent thinkers have always thought about creativity. Plato argued that creativity (such as a poet’s work) involved dictating whatever the Muse chanced to speak (Rothenberg & Hausman, 1976). Freud wrote an essay titled “Creative Writers and Day-Dreaming,” in which he wrote about the “strange being,” the creative writer (1908/1959). Einstein frequently discussed imagination and creativity; he was once quoted as saying that “imagination is more important than knowledge” (Calaprice, 2000). Educational reformer John Dewey (1934) wrote an essay on “art as experience.” Similarly, Vygotsky and Carl Jung wrote well-known essays on the topic. But none of these people primarily studied creativity.

Most of the early researchers who may have discussed or studied creativity actually focused on something else. Many were interested in genius or intelligence, such as Alfred Binet, Catherine Cox, William James, or Charles Spearman (Becker, 1995). Others interested in questions of creativity were modern-day Renaissance types who are now long forgotten to even the ardent student of the field. W. S. Jevons taught logic and economy but dabbled in multiple fields (Mosselmans & White, 2001). George Bethune was a preacher, wrote popular hymns, studied fly-fishing, and was active in Democratic politics (Stedman, 1900/2001). William Hazlitt was an aspiring painter who befriended many notable creators before frequently angering them with his political or literary commentaries (Wu, 2008). As one psychologist wrote at the time: “It would seem futile to speak of a literature on the process of creative thinking” (Hutchinson, 1931, p. 392).

There were still isolated studies and papers of note. Chassell (1916) adapted or created 12 different measures of originality. Some of these tests tapped into problem solving and others reflected high-level intellectual ability. However, some of these tests are remarkably similar to the same assessments used nearly 100 years later. In Chassell’s Novel Situation tests, she asked college students six different questions, such as “If all water, because of some change in...
its chemical constitution, should contract instead of expand upon freezing, what would be the effect upon animal life, including man?” The responses were then graded for originality. Chassell’s work predates by many decades the work of later pioneers—yet virtually no one cites or acknowledges her work.

Some of the other early work is less impressive. Witty and Lehman (1929) argue that creative geniuses, particularly creative writers, suffer from “nervous instability.” They also provide no evidence or data to support their ideas (which, indeed, would be a harbinger of research to come). Hutton and Bassett (1948), meanwhile, helpfully point out that lobotomized patients tended to be less creative.

Everything changed at the 1950 convention of the American Psychological Association. In his presidential address, Joy P. Guilford called for psychologists to increase their focus on creativity. He argued that creativity was an important topic and was not being studied or researched at the level it warranted. Before Guilford, less than 0.2% of all entries of Psychological Abstracts concentrated on creativity (Guilford, 1950). He helped move the field forward.

It is not true to say that Guilford single-handedly brought creativity from the realm of esoterica to prominence. On the other hand, it can often feel this way. What Guilford did was to both galvanize the field and make it acceptable to study creativity. Many of the ideas and studies that were published in the decade that followed his speech are still widely cited and respected. In contrast, there are only a handful of papers that are still commonly used from the decade before his seminal address.

Guilford’s own work in creativity emphasized the cognitive processes. Another legendary champion of creativity was E. Paul Torrance, who built off some of Guilford’s concepts and developed the Torrance Tests of Creative Thinking (which are still the most popular measures). A third pioneer was Frank Barron, whose work with the Institute for Personality Assessment and Research (IPAR) at the University of California, Berkeley (with Donald MacKinnon) helped spearhead a multidecade effort to interview and study eminent creators (such as musicians, writers, and scientists). In a different vein, Alex Osborn was an advertising executive whose work in applied creativity has been extremely influential. He created brainstorming, among many contributions.
PART I  THE BASICS

RELATED CONCEPTS

Academic scholarship has a tendency to pigeonhole, categorize, and develop hierarchies, and creativity is no different. Much of this book is based on psychology research. Part of this emphasis is because that’s my own training and background; another reason is that it mirrors the field’s prominence in the actual research. The main two other disciplines I will draw from are education and business; with psychology, these three fields have produced the most doctoral dissertations about creativity (Kahl, da Fonseca, & Witte, 2009; Wehner, Csikszentmihalyi, & Magyari-Beck, 1999). Just as there are numerous approaches to the study of creativity, there are also many keywords from different fields (see Gläveanu, Tanggaard, & Wegener, 2016, for a larger array of terms).

The word innovation is sometimes used interchangeably with creativity, but usually conveys a greater emphasis on application and is more associated with the worlds of business, management, engineering, and industrial/organizational psychology. One distinction between creativity and innovation that has been proposed is that creativity is thinking of new ideas and deciding on which ones are best, whereas innovation also entails implementing these ideas (West, 2002; West, Hirst, Richter, & Shipton, 2004). According to this approach, it’s creativity if I think of a terrific idea for a new game (such as “Angry Berts,” in which tiny Berts are cannonballed into an array of Ernies, à la Angry Birds). It’s innovation if I actually make the game. Going even further on the applied spectrum is the concept of entrepreneurship, which emphasizes actually creating new sustainable businesses or organizations (Low & MacMillan, 1988). Creativity is traditionally seen as a key component of this process (Zampetakis, 2008).

Imagination is also sometimes used as a synonym for creativity, but there is less an emphasis on a final product. Imagination can be only in your head—it can be sheer fantasy with little basis in reality—or it can emerge in play (Singer & Singer, 1990). With imagination, the “appropriate” component of the creativity definition does not play a key role. Imaginative play in children—often seen as an important precursor to creativity—is a more technical way of describing what happens when kids pretend and make-believe (Russ, 2013; Russ & Fiorelli, 2010). Imaginative play is related to a young child’s creativity,
particularly when an imaginary friend is involved (Mottweiler & Taylor, 2014). Sometimes an outgrowth of imaginative play can be improvisation, in which the audience gets to see the actual creative process (Sawyer, 2011). Improvisation often occurs in groups, such as a comedy troupe or a jazz ensemble; training children with improvisation techniques can increase their creativity (Sowden, Clements, Redlich, & Lewis, 2015). Another adult manifestation of play is creative leisure, a growing field (Hegarty, 2009; Hegarty & Plucker, 2012).

Aesthetics is the study of the arts. As Tinio (2013) argues, creativity is interested in how people create art (or science or business or something else), whereas aesthetics is more focused in how people perceive, view, and interpret art. When they did a special exhibit of Magritte’s work at the Metropolitan Museum of Art many years ago, I was entranced; my wife was creeped out and wanted to leave. Some people think Banksy is brilliant; others think he’s a vandal. Barnett Newman painted huge canvases with large swathes of bright colors and was hailed by some as a genius. Others may be reminded of the emperor’s new clothes (a museum-goer with a knife actually attacked one of Newman’s paintings). The play Art, by Yasmin Reza (1996), shows how the purchase of an enormous white canvas nearly destroys a close friendship.

Genius is the study of highly eminent individuals. Dean Keith Simonton has done an astounding array of both theoretical and empirical work on genius (a great place to start is another book in the 101 series: Genius 101; Simonton, 2009). As Simonton (2009) outlines, genius usually refers to people who are either extremely smart or are high achievers. These can include accomplishments that are creative, require leadership, or represent outstanding performance. Tied to the concept of genius is the idea of expertise, which traditionally comes after approximately 10 years of active study and practice (Bloom, 1985; Ericsson, 2014; Hayes, 1989; Simonton, 2014). I’ll discuss creative expertise in more detail in a few more chapters.

LOOKING AHEAD

Many theories of creativity often incorporate these concepts. In the next chapter, I review some of the major theories in the field.
REFERENCES


CHAPTER 1 WHAT IS CREATIVITY?


