

In Quest of Creativity:
Three Paths toward an Elusive Grail

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Abstract

In this exchange, the authors each address five questions about creativity, and then provide a final synthesizing response. The five questions they address are: (1) What is creativity? Are there different processes, types, or kinds of creativity, and if so, what are they? (2) What are the major obstacles to people thinking and acting creatively? (3) Do you believe that creativity is intrinsically positive? Why or why not? (4) What are the main ways in which schools and parents should develop creativity in young people? (5) Can creativity be measured? If so, how should creativity be measured, and under what kinds of circumstances? Their answers highlight both similarities and differences in their points of view on creativity as a phenomenon and approaches to theorizing about it, studying it, teaching for it, and measuring it.

Keywords: creativity; processes of creativity; sociocultural approach to creativity; 4C model of creativity; 8P framework for understanding creativity

Over the course of a week or so, the three of us—Robert J. Sternberg, Vlad Glăveanu, and James C. Kaufman--had an email exchange about the nature of creativity and its concomitants. Although James Kaufman was Robert Sternberg's graduate student and is currently a collaborator, and although Vlad Glăveanu and James Kaufman have collaborated on many papers in recent times, we found ourselves surprised by the number of disagreements we had. On the one hand, we come from similar traditions in the study of creativity: We tend to be sympathetic, in varying degrees, to sociocultural approaches to creativity, and to believe that creativity best can be understood through some kind of synthesis of sociocultural with cognitively-based, personality-based, and motivationally-based approaches to creativity. On the other hand, we disagree in how strongly we adhere to the sociocultural perspective and in the extent to which creativity even can be viewed as a traditional "ability." These disagreements led us to wonder how we would answer questions about creativity if we all were confronted with the exact same questions.

Ian Deary and Robert Sternberg had recently engaged in such an exchange regarding human intelligence (Deary & Sternberg, 2021), so we decided to give it a try. We hope you find our exchange thought-provoking, as we did, even if it contains no final answers. We doubt that there are any final answers to be had in the field of creativity right now, and perhaps ever!

Our questions were: (1) What is creativity? Are there different processes, types, or kinds of creativity, and if so, what are they? (2) What are the major obstacles to people thinking and acting creatively? (3) Do you believe that creativity is intrinsically positive? Why or why not?

(4) What are the main ways in which schools and parents should develop creativity in young people? (5) Can creativity be measured? If so, how should creativity be measured, and under what kinds of circumstances?

We each ended the exchange with our concluding comments. We hope you enjoy reading our exchange as much as we enjoyed writing it.

1. What is creativity? Are there different types, kinds, or processes of creativity, and if so, what are they?

Robert J. Sternberg

What Is Creativity?

Creativity is generally defined as the production of an idea or product that is novel and useful or effective in some way (Kaufman & Sternberg, 2019).

Mental Processes Underlying Creativity

The mental processes underlying creativity are the metacomponential—executive process-based--ones that apply to all higher order cognitive processing (Sternberg, 2020a):

- **Problem recognition**—This is even acknowledging that there is a problem in need of solution. For example, one might recognize that there is a need for a new or better medication against a disease such as COVID-19.
- **Problem definition**—This is figuring out what exactly the problem is that one wants to solve. For example, one might define as “better” a new medication that has greater

efficacy or fewer adverse side effects. What does one want to create, invent, discover, paint, formulate, or whatever?

- **Mental representation of the problem**—This is how one conceives of the problem in one's mind—for example, a medical researcher might represent a better medication as one that (a) can be taken just once a day, (b) for a short period of time, (c) without interacting with other medicines, and that (d) cures or greatly reduces symptoms of the disease.
- **Allocation of resources**—This is how much time, money, or effort one will spend on the creative project. For example, one might be told by a pharmaceutical company that one has a particular budget, amount of time, and staff to create a new medication, and that this allocation must be sufficient to get the job done.
- **Formulation of a strategy for problem-solving**—This is the creation or selection of a path to solution. For example, in creating a new medication, one would need to isolate the virus; determine, if possible, its genetic structure; figure out what active processes of the virus are susceptible to disruption; and so forth.
- **Monitoring problem solving**—This is the maintenance of continual vigilance to ensure, to the extent possible, that one's strategy is succeeding. For example, is the medication succeeding in Phase 1, then Phase 2 trials, right up to production?
- **Evaluating problem solving**—This is the summative assessment of whether one's creative enterprise has succeeded. For example, was it possible to bring the drug successfully to market?

Kinds of Creativity

There are various ways of categorizing creativity. In the 21st century, there are three critical aspects of creativity, I believe: (1) how creativity works within or changes paradigms, (2) effects of creativity on society, and (3) creative integrity.

(1) Relation to Existing Societal/Scientific/Artistic Paradigms

One way of categorizing creativity is in terms of the kind of contribution the creativity makes with respect to existing paradigms (Sternberg, 1999, 2020c; Sternberg, Kaufman, & Pretz, 2002). Will the creativity change anything, or is it essentially more of the same?

Paradigm-Preserving Creation

- **Replication**—This is repetition of what has been done, usually with minor variations. For example, the 2023 version of a new car might be essentially the same as the new 2022 version.
- **Repurposing**—This is taking existing ideas and using them for a new purpose or goal. For example, a medicine used for one purpose might be used for a different purpose, as has happened with aspirin, first used for pain and later also for thinning of blood.
- **Small-stepping**—This is advancing a domain in a small way within a given paradigm of work. For example, the next cell phone in a lineup (the So-and-So Version 9) might have a few new features, but perhaps nothing fundamentally different from the last version of the cell phone.
- **Big-leaping**—This is advancing a domain in a large way, but still within the given paradigm. For example, the Salk polio vaccine was a huge leap forward that helped to eradicate, or at least greatly reduce, polio in many parts of the world.

Paradigm-Busting Creation

- **Radical Rebellion**—This is work moving in a different direction from the existing starting point. For example, the mRNA vaccines for COVID-19 represented not only new vaccines but also the implementation of a new technology to prevent or at least mitigate the harmful effects of a disease.
- **Reactionary Radical Rebellion**—This is moving in a different direction from a past starting point that previously has been rejected. For example, many natural herbal medicines used to combat illnesses that once were rejected as “primitive” or simply as “ineffective” by Western medicine have come to be recognized as effective, such as Artemisia to treat malaria.
- **Revolutionary**—This is a starting over and a complete rejection of existing paradigms even as a starting point. Noam Chomsky’s (1957) transformational grammar was an innovation of this kind.

Paradigm-Synthesizing Creation

- **Conciliation**—This is a synthesizing of existing paradigms. Alan Newell and Herbert Simon’s (1972) work on human problem-solving synthesized psychology with computer science in an innovation of this kind.

(2) Effects of Creativity on Society: Positive, Neutral, Negative

In recent work, I have emphasized the effects on society of creative work (Sternberg, 2021). Are these effects positive, neutral, or negative?

Unidentified Creativity—This is creativity that is yet to be discovered—the work is novel, useful, but unknown.

Transactional Creativity—This is creativity in exchange for a reward, either other-generated or self-generated—that may be positive, neutral, or negative in its effects.

- ***Inert Creativity***—This is creativity that is rewarded, but never goes beyond predictors, such as on creativity tests or in classroom activities.
- ***Fully Transactional Creativity***—This is creativity where one is rewarded in society either by oneself or others.

Transformational Creativity—Creativity that makes a positive, meaningful, potentially enduring difference to the world, at some level.

- ***Self-transformational Creativity***—This is creativity by which someone self-actualizes although their creativity but does not necessarily affect others.
- ***Other-transformational Creativity***—This is creativity by which one transforms the lives of others but not of oneself.
- ***Fully-transformational Creativity***—This is creativity by which one positively transforms one's own and others' lives. This is what we have so little of, and need so much more of.

Creativity with and without Integrity

With the rapid diffusion of information on the Internet and through social media, creativity more and more has been used for purposes that lack integrity. The balance of integrity

is going the wrong way. It therefore is useful to distinguish between creativity with and without integrity. Creativity with integrity draws on information that has (Sternberg, 2021b):

- ***External correspondence***—The creativity draws honestly on events in the (real or imaginary) world that it claims to draw on. The important thing is not whether the world is real or imaginary, but whether the creator is honest about which is which.

Increasingly, autocrats, would-be autocrats, and their lackies are sociopathically, narcissistically, and with Machiavellian means, creating imaginary worlds and by manipulating information, convincing gullible people that the autocrats' imaginary worlds are real. In one case, such as in Ukraine, the Russian president conducts genocide while pretending to his own citizens that Russia is de-Nazifying Ukraine, a country with a Jewish president. The president probably figures that if he can get citizens to believe that he can get the people to believe, in Orwellian (Orwell, 1950) fashion, pretty much anything. "External correspondence" is whatever the government says it is. Unfortunately, such gullibility is not limited to any one country. It can be found anywhere, as in the targets of Donald Trump's cynical, fact-free claim that he won the 2020 U.S. presidential election.
- ***Internal consistency***—It makes sense and is not self-contradictory or illogical in a way intended as a subterfuge to make people believe one thing when, in the given world, they should believe another. The autocrats and their lackies, as in an Orwellian world, pride themselves on the internal inconsistency of their invented worlds. The goal is to get people simply to parrot what the government says, as in *1984*, where one day the enemy is Eastasia, the next, Eurasia, and whatever country is the enemy always has been the enemy.

Political and ideological and marketing propaganda may be quite creative but intended to deceive by leading people to bypass critical thinking in favor of emotional thinking. In the current world, countries with malevolent leaders are cutting off communications with the outside world and replacing such communications with their own lies that have neither external correspondence nor internal consistency.

The problem today is that so much of creativity is replicative or small-stepping, is negatively transactional, lacks integrity, and is rewarded for being as such because people fear nontrivial creativity that may impinge on their self-interest and that truly will change the world for the better. Society needs—and can do--better!

Vlad Glăveanu

Creativity is an action that leads to the emergence of meaningful novelties. As any form of human action, it goes well beyond cognition (or ‘getting the creative idea’) and it involves emotion, the body, material tools, social interactions, as well as a wider cultural environment. The latter are not merely additions to an individual’s creative process, nor are they contextual facilitators or constraints - they are all part and parcel of what we call creativity. There is no creative expression that is not embodied, as even our most personal thoughts depend on, resonate with, and oftentimes lead to bodily states and movements. Creators always use tools, whether these are ‘tools for thinking’ (most famous of which is language) or material tools, ranging from the old pen and paper to today’s sophisticated technologies. The creative process is always a form of collaboration with the ideas of others, sometimes explicit (in group or team-work), most of the time implicit (through the influence of mentors, the internalized views of the public, user

expectations, etc.). Finally, human creativity is eminently cultural by both depending on and contributing to the norms, values, and representations of one or more cultural systems.

The definition and characteristics above are specific for a sociocultural approach to this phenomenon, one that strives to understand acts of creating as at once psychological, social, cultural, and material. These accounts build on some old ideas about the creative process – for example, the role of combinatorial processes, of insight, of convergent and divergent thinking - while transforming our understanding of them. Considering only the example of divergent thinking, a sociocultural take on it would discuss the same process in much more embodied and social terms than searching within semantic networks, making associations, etc. From this standpoint, what we develop are new perspectives on the world or on the problem at hand, perspectives that orient our action and not simply our thinking. More than this, the emergence of new perspectives depends on the (highly developed in human beings) capacity of taking the perspectives of others or trying to understand the world from their position. As such, a key and oftentimes ignored creative process has to do with being open to differences of point of view between self and others. Even those who create completely alone or have to fight hard against the perspectives of specific individuals and groups (driving them towards conformity), still depend on a life history of exchanging positions and perspectives with other people, real or imagined, and of gaining new insights from such acts of repositioning.

There is a point of tension here between the sociocultural approach, as described above, and models of creativity based on the notion of ‘defiance’ and hence the opposition between creative people and the society and culture of their time (see Sternberg & Lubart, 1995; Sternberg, 2018). While it is certainly the case that creators do often struggle against some of the dominant norms, values, and institutions of their context, they do so by being embracing other

norms, values, and groupings within society, oftentimes more marginal. The danger here is developing accounts that over-emphasize either the difference or commonality between creators and other people; in reality, we need to understand more deeply the interplay between both.

As a final note, given the highly contextual nature of our social and material engagement with the world, sociocultural accounts are reluctant to produce grand typologies of creativity. They do challenge, however, especially those typologies that separate the individual and the social, the psychological and the material, the personal and the cultural.

James C. Kaufman

I've always appreciated the simplicity of the general definition of creativity being something new and task-appropriate. I'm aware it doesn't eliminate a great deal, but it is a straightforward and direct definition. I think the Four P's (Rhodes, 1961) or the Five A's (Glăveanu, 2013) provide a nice way of giving us a common categorization system to talk about creativity.

I think that the different types, kinds, and processes aspect depend on which P or A one is considering. I unsurprisingly have a soft spot for the Four C's (Kaufman & Beghetto, 2009), which are a more in-depth way of considering the Person or Actor. They offer a broad trajectory from personal creativity (mini-c) to everyday creativity (little-c) to professional creativity (Pro-c) to creative genius (Big-C). Each C relates to the next but also offers specific nuances of how to best measure and consider the construct. If someone is more interested in the Process or Action, there are many different models; most revolve around the central tandem of divergent and convergent thinking, although there are many other processes worthy of note, such as problem-

finding (Reiter-Palmon & Robinson, 2009). For the Product or Artifact, I like the domain approach. I've long been interested in figuring out the structure of creativity in terms of core domains, which has led to many self-report measures, such as the K-DOCS (Kaufman, 2012).

Although I've offered up several theories, I have no particular conviction that any of them are the one and true path. I find it fascinating to see how many different theories can be true or offer valuable insight from a different approach. So many of these types of questions will have very different answers depending on the time frame (being creative in ten minutes or over ten years), discipline (education and business understandably value different components), and so many other divisions.

2. What are the major obstacles to people thinking and acting creatively?

Robert J. Sternberg

Creativity is challenging to execute because it involves obstacles both external and internal. In this brief essay, I discuss both kinds of obstacles in terms of two theoretical frameworks I have proposed.

Triangular Theory of Creativity

According to the triangular theory of creativity (Sternberg, 2018), creativity is, in large part, an attitude toward work and, more generally, toward life. This theory posits obstacles of three kinds.

- **Defiance of oneself.** We all have a tendency to become entrenched. We associate ourselves with a belief, an idea, a set of presuppositions, an ideology, an invention, a way of doing things—and we have trouble letting go. Often, we have identified ourselves to others in terms of this set of beliefs or contributions. We are so invested in and identified with how we think or do things that letting go of them may be like letting go of ourselves. We just cannot imagine ourselves thinking, feeling, or acting any other way.
- **Defiance of the crowd.** The second kind of obstacle is *defiance of the crowd*—that is, defiance of the beliefs and, at a larger level, ideologies of the others (see also Sternberg & Lubart, 1995). It is hard to be creative because it means thinking and acting differently from others. But we all have a need for affiliation and to be like others (McClelland, 1965). Often, we know that the crowd is wrong, but we fear the rejection, alienation, and even expulsion from groups that think a certain way and tolerate little or no dissent (Janis, 1972).
- **Defiance of the Zeitgeist.** The third kind of obstacle is defiance of the *Zeitgeist*—a worldview that we may not even be aware we have. We think certain ways, we do things certain ways, but because they are so ingrained, we simply do not even see what we think or do as based on a belief system—we see it rather as the way things are and must be. In science, paradigms are hard to defy because the scientists who adhere to them do not view them as paradigms but rather as simply the way things are and should be (Kuhn, 1970).

Theory of Modifiability

People often block themselves from being creative because they have made themselves unmodifiable (Sternberg, 2012, in press-a). To think and act creatively, one needs to give an affirmative answer to five questions:

- **Am I able to change?** Sometimes, the environment actually does prevent one from changing. The environment may be totally unsupportive of creativity (Amabile, 1996; Sternberg, 2020d), for example, an environment in which if one is found to oppose an existing belief or ideology, one is expelled, imprisoned, or worse.
- **Do I believe I am able to change?** Other times, one is able to change but one lacks self-efficacy for change (Bandura, 1994). One simply believes one is unable to change and hence does not try.
- **Do I want to change?** One may be able to change in one's thinking, but not want to. Rather, one is satisfied with the way things are.
- **Do I want to appear to change?** Whether or not one wants to change, one may be afraid to appear to others to change. Others may identify one in a certain way—with a certain set of beliefs or attitudes—and one may not want others to see a change.
- **Do I have the courage to change?** Sometimes, one wants to change and to appear to change—one simply does not have the courage to do it, fearing the reactions of others or even of one's own view of oneself.

In conclusion, it is much easier to talk about creativity than to exhibit it. To exhibit it, one must overcome many obstacles, self- and other-imposed.

While creative expression comes ‘naturally’ to humans – as beings endowed with agency, and curiosity – it doesn’t mean that its occurrence is commonplace. In fact, we can just as easily argue most of us are creatures of habit and conformity. There are moments and contexts in life when it is decisively not recommended to be (overly) creative, for instance one wouldn’t want a train conductor to suddenly experiment with taking a different route or making the train go backwards at high speed. But even routine occupations require people to be able to solve problems creatively; the conductor in our example would benefit from creativity in an emergency.

So, what stops people from thinking and acting creatively even when this is expected from them, or when they would benefit from such a course of action? There are four scenarios that come to mind: lack of resources to create; lack of awareness of one’s creativity or of the need to be creative; lack of opportunities to enact creativity in a given context; and lack of recognition of one’s creative potential or even creative achievements (see also Kaufman & Glăveanu’s CASE model).

- ***Lack of resources.*** Creativity as a process requires a series of psychological, material, social and cultural tools. Just as it is hard to imagine doing creative surgery without the most basic surgical instruments, a lack of certain psychological ‘ingredients’ reduce the chance of creative action. Among them: motivation (intrinsic, but not only), domain specific and domain general skills and knowledge, a favorable environment, etc. (Amabile, Lubart). We explore less in creativity studies the idea of lacking social and

cultural capital – e.g., social relations with gatekeepers, a deeper understanding of the field – but these are on par with the psychological resources. The good news is that most of these tools and resources can be cultivated, educated, or accumulated over time (more on this later).

- ***Lack of awareness.*** If creativity is a form of action than it is driven, at least to some extent, by goals and intentions. And as well-known models of attitudes show, intentions are some of the best and most direct predictors of behavior. So why would we not intend to be creative? We might not be aware of ourselves as creative beings (no creative identity), not trust our capacity to respond to a problem creatively (no creative self-efficacy), or not see how creativity can be part of the solution (creativity is not a value for them). Any of these can discourage people to act creatively or to persevere in this direction when needed.
- ***Lack of opportunity.*** This category is probably the one that comes to mind most often when talking about obstacles to creativity: the person can and would want to be creative but, especially due to external pressures, cannot express him or herself in this way. The outside forces range from mild opposition to new ideas in a group meeting to life-threatening punishments sanctioning disobedience in totalitarian regimes.
- ***Lack of recognition.*** Last but not least we can think about the demotivating effects of lack of recognition for creative performance. While not each and every creative idea or product is appreciated (and, indeed, most of them are disregarded by either the creator or society), social recognition remains one of the big drivers for creative people. A systematic lack in this area can make creators change their interests, their audience, their

methods or, in some cases, develop highly oppositional (and riskier) forms of creative expression.

James C. Kaufman

Vlad has already covered our CASE model, which would be one of my initial thoughts. Another thought would be to think about personality; is one prone to be an intellectual risk-taker (Beghetto et al., 2020), open to new experiences (S. Kaufman et al., 2016), and generally apt to try new things and consider new possibilities? Plus, there are the specific knowledge or domain-specific abilities that will come into play. For example, many potential creative areas are largely closed off for me to pursue at a high level simply because of my own lack of basic talent or related strengths (such as visual-spatial ability).

Ultimately, the simplest yet perhaps most predominant reason that occurs to me is that creativity takes effort. The most common studies about creativity to make the news are usually the ones that focus on what sounds like an easy shortcut and suggest simple activities, traits, or surroundings that can boost one's creativity (such as eating or drinking a particular substance or working in a particular type of room or doing a brief physical activity beforehand). I think most people like things to be easy. Sometimes there are dire consequences, such as when people respond to a global pandemic by engaging in the least amount of precaution or deciding to obey whatever a talk show host says. Another example that is thankfully less likely to be fatal is when someone spends an evening playing on their phone or watching television instead of working on a home improvement project or artistic hobby or everyday creative act. Creativity

requires work and practice and dedication. Many people may not choose to invest their time and energy this way, or else may not be able to do so.

3. Do you believe that creativity is intrinsically positive? Why or why not?

Robert J. Sternberg

Creativity has been defined as arising from products that are novel and useful. Is that enough?

The 8P Theoretical Framework for Creativity

In a recent article, Sareh Karami and I have argued that although the traditional 4P framework for understanding creativity is useful, an 8P framework might be more useful (Sternberg & Karami, 2021). The first of the P's in our expanded framework is *purpose*. We believe that psychologists, including but not limited to those studying creativity, have paid far too little attention to purpose, although Erikson (1963) recognized its importance long ago. Because creativity theorists, researchers, and teachers (including me) have neglected purpose, we have ended up with a society that occasionally fosters creativity, but equally for positive and negative purposes.

Social media, for example, are a creative innovation. But today they are being used creatively for spreading disinformation—the kind that can kill, as millions die of COVID-19

because they believed that vaccines are dangerous and that masking is irrelevant. Creativity also has been used to create machines that belch out pollution and that increase global warming; for political purposes—including in the United States—to establish and promote authoritarian regimes and a tyranny of a minority of people whom actual and would-be authoritarians convince to disrespect and even harm people who “don’t belong”; to create weapons of mass destruction; and to advertise dangerous foods and other products.

The Relevance of Wisdom—The Balance Theory of Wisdom

Unfortunately, creativity research, having been bound to frameworks such as the 4P framework, which ignore wisdom, has not adequately dealt, to date, with the question of purpose. There is a sort of provincialism in psychological research, whereby constructs are viewed in isolation, and often the people who study one construct do not study another.

At least some research on another construct, wisdom, focuses especially on purpose. Wisdom is the use of one’s creativity as well as intelligence to achieve a common good; by balancing one’s own with others’ interests and higher order interests; over the long- as well as the short-term; through the infusion of positive ethical values (Sternberg, 1998, 2019). We need to take seriously the first P—purpose—lest we develop creativity that then is used for bad ends. Creativity in itself is not enough. Nor is positive creativity—creativity used for positive ends (James & Taylor, 2010; Sternberg, 2021c)—because what is positive to one person or group may be negative and even harmful to another.

The Theory of Transformational Creativity

In the first essay, I mentioned the importance of transformational creativity (Sternberg, 2021d)—creativity that makes a positive, meaningful, and potentially enduring difference to the world. People can be creative or intelligent without being wise. As the world fails in

confronting the many challenges facing it (Sternberg, 2021a), we need to deploy creativity not merely to make our own lives better, but also to make the world better. Creativity is not intrinsically good; it is our deployment of it that is either good or bad. What matters is not so much creativity but rather how we use it.

Vlad Glăveanu

There tends to be a widespread belief in society that creativity is a force for good and one of the best qualities human beings are endowed with. Even the definition of creativity tends to be biased towards the positive, with value, meaningfulness, appropriateness or significance being inscribed into how we think about creative outcomes. And yet, a substantial body of work has come to reflect in recent decades on the negative or malevolent side of this phenomenon. This captures the many creative ways in which we harm others, weaken society and destroy the environment, among others. It is undeniable, for instance, that with increased progress especially in the sphere of technology (a key creative domain) we come to experience some terrible negative consequences, both intended or unintended (think, for example, about the role played by social media, a tool meant for connecting with others, in the spread of dangerous forms of misinformation).

Is creativity to blame for the negative, just as it had been praised for the positive? It would be naive to claim that each and every creative act is motivated by benevolent intentions and is done in the service of others. But I believe we should distinguish between the core processes of a phenomenon like creativity and their concrete manifestation(s). Let me explain.

At the heart of creativity, we find a certain degree of openness to other perspectives and ways of seeing the world. In other words, a measure of flexibility and open-mindedness is inscribed into it. From a sociocultural standpoint, these qualities are premised on the human capacity to take the perspective of other people and understand the world as they do. The latter is a crucial developmental achievement that enables the emergence of a sense of self, allows for collaboration between people, and supports other processes like empathy and compassion. In other words, there is a joint core of open-mindedness and perspective-taking shared by creative and ethical action. This doesn't mean that each and every creative act is ethical! We can listen to other perspectives but those might belong to criminals and crooks; we could be open-minded but when it comes to fascist ideologies, etc. The positive ethos of creativity (for more details, see Kaufman & Glăveanu, 2021) can be easily distorted whenever creative action gets separate from the self-other concerns that enabled it in the first place.

So, is creativity always good? No. Does it reflect the good within human nature? To a large extent, yes. Can we help reinforce the connection between creativity and the ethics of human relations? We must hope we can and try our best to do so.

James C. Kaufman

Ultimately, yes. In a way. I think the act itself of creativity is valence-neutral. I've written elsewhere about malevolent and dark creativity (Cropley et al., 2008; Kapoor & Kaufman, 2022). If good intentions pave the road to hell, one can imagine what bad or simply self-interested intentions might pave. Ultimately, though, I think creativity – like intelligence – is a

tool. There is a metaphor I have used quite a bit; I think I first used it as a graduate student in a paper written for a seminar with Sternberg. Creativity is a hammer. You can build a house with a hammer, the way that people with Habitat for Humanity do on a regular basis. But you can also bash someone's head in. Is a hammer good or bad? It's a hammer.

Why is my answer mostly yes, then? I think creativity is very often positive for the creator. I have already written about how creativity can help find meaning in their life (Kaufman, 2018), and I am in the process of expanding these ideas into a full model (Kaufman, in press). This model, the Creative Advantage, suggests five broad ways that creative can help the creator:

- **Understanding** yields self-insight and coherence; an example would be someone engaging in emotionally expressive writing on a regular basis and receiving the mental and physical health benefits outlined by Pennebaker (1997).
- **Healing** includes the creative growth possible after trauma (Forgeard, 2013) and improved mood that can result from the arts (Drake & Winner, 2012).
- **Community** covers the social bonding we feel when engaged in the arts and other creative work (Smith, 2014), the way that creativity can help enhance tolerance (Groyecka-Bernard et al., 2020), and other connections we reach through creative acts.
- **Drive** includes the feelings of interest, pleasure, and progress underlying the joy and satisfaction in being creative.
- **Legacy** encompasses the ways that creativity allows us to leave some part of us behind after we die. It may be in the way we produce or contribute to lasting creative work, in how we mentor or inspire creativity in others, or in how our everyday creativity continues to be meaningful to our loved ones (Lifton, 1979).

So, I do think creativity is intrinsically positive (usually) – to the creator. For the world, it's a bit more hit or miss.

4. What are the main ways in which schools and parents should develop creativity in young people?

Robert J. Sternberg

Some of the best ways to develop creativity, I suggest, derive immediately from componential accounts of creativity (Amabile, 1996; Sternberg, 2020b; Sternberg & Lubart, 1995; Sternberg & Williams, 1996, 2001). An underlying unifying theme is that creativity largely an attitude toward life (Sternberg, 2000)—a decision that one can make. People in part by abilities, but more by the questions they ask themselves and how they answer them.

Parents and teachers who want to develop creativity should, of course, shower young people with opportunities to be creative rather than merely to give “correct” answers that yield metaphorical pats on the head. But the more important contribution is developing an attitude toward creative tasks whereby young people approach the tasks in a creative rather than pedestrian way. Much of science and other fields is pedestrian not because scientists, artists, and others have chosen small, unimportant, and perhaps even trivial problems (Csikszentmihalyi & Getzels, 1988; Zuckerman, 1983). In science, they may be competent in scientific problem solving, but they find and pursue minor problems that are easy to solve, yield quick publications, do not stretch their thinking, do not threaten others in the field, and most of all, do not threaten

their own entrenched ways of doing things. Or they make a career of critiquing others who are creative because it is so much easier than being creative oneself.

Componential Model of Creativity

A componential model of creativity (see, e.g., Sternberg, 2020) deals with elements that comprise creativity and also that can be modified. Consider the components, and examples of questions to teach individuals to ask in order to be creative:

Metacognitive

Metacognitive components of creativity (Sternberg, 2020a) include executive processes (metacomponents) that underlie creative thinking. Is this problem really worth addressing and solving? Is it important or consequential enough (*problem recognition*)?

- Are you sure you have defined the problem correctly? Are you addressing the right problem? (*problem definition*)?
- Have you asked yourself whether the creative solution is the best you can generate (*solution evaluation*)?

Cognitive

Cognitive components of creativity are responsible for creative insights (Sternberg & Davidson, 1999):

- What new information is relevant for your creative work (*selective encoding*)?
- How can you combine information you have to yield a creative solution (*selective combination*)?

Thinking Styles

These are preferred ways of thinking (Sternberg, 1997; Zhang & Sternberg, 2020).

- Do you enjoy thinking in your own way rather than being told what to do (*legislative style*)?
- Do you enjoy thinking in new ways rather than being satisfied with old ways (*liberal style*)?

Personality

- Are you open to new experiences and ideas (*openness*)?
- Are you willing actively to think in new ways (*cognitive flexibility*)?

Motivational

- Are you willing to go your own way, despite pressure from others (*defiance of the crowd*)?
- Are you willing to become aware of and question your own presuppositions (*defiance of the Zeitgeist*)?

Environmental

- Can you mold your environment to allow and perhaps even appreciate your creative ideas (*shaping of environments*)?
- Can you find contexts within your environment that encourage creativity (*selection of environments*)?

Vlad Glăveanu

This is, in many ways, both a very good and somewhat misleading question, when considered from a sociocultural standpoint. It is a very good one because sociocultural approaches are quintessentially supportive of the idea of educating and fostering creativity,

especially through guided social interaction. So, in this sense, it is expected for teachers and parents to play an important role. But, at the same time, pointing only to these immediate care-takers is partial and tends to ignore the fact that students, parents and teachers are all embedded within a wider socio-material and institutional context whose broader values, norms and representations all come to impact the development of creativity.

With this in mind, let's formulate a few pieces of advice that follow a more systemic logic:

- ***Parents and teachers should educate themselves about creativity*** and, in particular, about the numerous myths and misconception that circulate widely when it comes to this phenomenon. For instance, understanding that creativity goes beyond the arts could help them encourage creative expression in non-artistic crafts and hobbies.
- ***Appreciate the importance of creative mindsets, forms of self-efficacy, and identities.*** Being creative means more than doing creative things – it often requires an understanding of oneself as someone who is capable of creativity and enjoys creating. Parents and teachers are well advised to focus on these self-beliefs and cultivate those that support creative expression.
- ***Foster passion, interest and intrinsic forms of motivation.*** While we know now that creativity requires more than intrinsic motivation, or doing something for its own sake, this does remain a key 'ingredient' for energizing and supporting creators through their process. Especially at young ages, connecting to emerging passions and interests for

particular topics will help students overcome the many challenges and failures associated with creative work and to persevere.

- ***Build wider networks of support.*** Being and acting creative are not merely individual achievements – they depend on a larger environment that encourages creative expression and rewards creative effort. So when it comes to the family or the school, the question is not only how one parent or one teacher interacts with the child but of the kind of climate the family or institution build for creativity. Do schools, families, workplaces, etc., appreciate creative forms of risk-taking? Are they open to new ideas and practices? If the answer is ‘generally no’ we shouldn’t be disheartened: we all, collectively, contribute to group and institutional climates. Then challenge becomes how to rally support for more openness, flexibility and creativity from whatever position we occupy in the system.

James C. Kaufman

There are many existing books, papers, tools, and programs designed for this purpose. Some of these best practices and suggestions are based in research and others are not; some are utter garbage and others are not. I do feel that even the most evidence-based guides sometimes unconsciously take an idealistic (at best) and elitist (at worst) perspective. It is easy for people in the field of creativity (I am specifically including myself and *not* including my co-authors in this group) to assume that creativity is important and meaningful (it is) and that therefore everyone feels this way.

Of course, that is not the world we live in. There is evidence of often unconscious bias against creative students (Aljughaiman & Mowrer-Reynolds, 2005; Westby & Dawson, 1995). In these times when many schools are stuck in the middle of political grandstanding and have to focus their energy on mask and vaccine mandates and whether they are allowed to mention anything related to critical race theory, creativity may be the last concept on their mind. Anyone reading these words may think of many ways in which creative people and actions could work to solve these thorny issues, but that is a different matter.

Similarly, my advice about how to inspire creativity in one's children has shifted since I actually had kids. It is easy to talk theoretically about how to get children to explore their surroundings, use their imagination, and engage their natural curiosity; it is another thing to navigate a world where their attention is being drawn away by phone games and YouTube videos.

I haven't even addressed the many families who are struggling to survive, with food prices and healthcare costs skyrocketing while incomes stay flat. There are so many exhausted parents who by the end of the day have used up all their remaining energy and must somehow borrow from tomorrow just to stay afloat. I cannot fault them for not attending to their child's creative needs.

That said, one can argue I simply made a longwinded attempt to get out of the question. My answer, with these caveats in mind, is for teachers to show children you value their creativity by making time for it (when it is also relevant to the class material in some way), offering choice in different types of assignments that emphasize a variety of strengths, encouraging students to find multiple solutions to a problem or pathways to an answer, allowing students to apply their passions (when possible) to class topics, and enabling flexibility and freedom in the specifics of

class exercises, discussion, and examples. For parents, I would recommend demonstrating that you care about your children's creativity by listening, looking, hearing, and engaging in their efforts whenever possible; ideally pairing that with offering feedback, smiling, remembering past efforts, and when possible, modeling a creative life.

5. Can creativity be measured? If so, how should creativity be measured, and under what kinds of circumstances?

Robert J. Sternberg

A challenge in measuring creativity is that there are different aspects of creativity, which may or may not mesh. One can measure (1) cognitive and metacognitive precursor skills, (2) non-cognitive precursor attributes (embracing creative attitudes, thinking styles, personality dispositions), and (3) creative motivation, and (4) actual creative performance.

I discussed the cognitive and metacognitive skills as well as the non-cognitive precursors in Essay #4, so will not again go over the same material. The very questions one can ask in developing creative skills and other attributes are the same as the ones can evaluate in assessing an individual's potential creativity: The skills and attributes a school or other institution measures should be exactly the ones that they develop.

Three main challenges face us in measuring creative performance.

Temptations Leading down Garden Paths

We face three large temptations in measuring creativity.

- **The temptation to measure creativity in a trivial rather than consequential way.**

The assessment of creativity, as of intelligence, can be too easy. The resulting tests, like trivial measures of intelligence, will have some predictive value to real-world creativity, but not much, because real-world performances require so much deeper, broader, and more informed creative thinking.

- **The temptation to measure creativity in a domain-general rather than domain-specific way.** Tests often have attempted to measure creativity in a domain-general way.

The problem is that creativity is largely domain-specific (Baer, 2015; Sternberg & Karami, 2021). Creativity is variable and even fluid across domains. The creative person may rarely operate in a given domain at their “domain-average” level.

- **The temptation to view creativity as fixed rather than fluid.** As soon as one measures an attribute, there is a temptation to want the score fixed so that the score “means” something. Tests with low test-retest reliability often are looked at as inadequate. But the problem may be not with the test, but rather with the variability and fluidity of the construct over time.

Our Solution

Our solution has been to try to construct items that are nontrivial, domain-oriented, and viewed as measuring demonstrated creativity at a given time, in a given place, rather than as fixed. Here are examples:

Domain

Here are four example domains:

Science. We have asked participants to generate alternative hypotheses explaining a scientific result and to design scientific experiments, either on a topic of interest to them or one a topic we have given them (e.g., Sternberg & Sternberg, 2017; Sternberg et al., 2017, 2019).

History. We have asked participants to imagine alternative future histories (e.g., “What would the world be like today if the Nazis had won World War II”) or to put themselves in the place of eminent historical figures and to imagine what they would have done in their place in handling specific situations, such as the spread of slavery (e.g., Sternberg, 2010).

Language Arts. Write a very short story with the title “The End of Social Media” or “The Mysterious Lab.” Or imagine a different ending to an existing story of your choice (e.g., Sternberg, 2010).

Art. Draw the beginning of time. Draw an inhabitant of the Planet Kyrion.

In some, we can measure creativity, if we seek meaningful measurement that avoids the temptations toward triviality, complete domain-generalty, and the expectation of constancy over time.

Vlad Glăveanu

This is a thorny issue within the sociocultural psychology of creativity. On the one hand, there is strong (and justifiable) opposition to reductionist forms of measurement that end up in a ‘creativity score’. As an orientation that operates with distributed and developmental views of creativity, traditional tests can only reify an otherwise dynamic phenomenon and mislead by confusing the parts with the whole (e.g., the use of divergent thinking as an ultimate proxy for creativity). On the other hand, we cannot avoid assessment altogether. How would we even know who and when to foster creativity if we didn’t have any evaluation to start with? But there

is a difference here between measurement (always numerical) and assessment or evaluation that can also be qualitative and holistic.

My own view in this regard is that we can measure specific sub-components of creativity, especially those closely connected to the physiological and cognitive dimensions. Coming back to divergent thinking, I find some of its items genuinely interesting and themselves ‘creative’. But we cannot then use those partial measures to claim something about creativity as a whole. Even more systemic assessments that would test neurological, cognitive, affective and social aspects, let’s say, cannot then be glued together into a creativity score. Once more, creativity is more than the sum of parts. This is a point of tension with the individual differences tradition of creativity that many colleagues, including my co-interlocutors, made significant contributions to. I am of the view that the individual differences approach needs a radical rethinking, one that questions how we understand the notion of ‘individuals’ and ‘individual minds.’ The sociocultural view is often mistakenly taken to represent the other side of the coin for which individuality gets diluted into broader social patterns of similarity. In fact, we are uniquely individual *because* we are social, not despite of it. It is our belonging to multiple groups and communities – the various positionings we adopt in the world, and the perspectives they enable – that make us who we are and these belongings at the same time unite and differentiate us from others. So, if we are to adopt an individual differences approach then we need to abandon the scoring of individual traits, taken in isolation, and make more efforts to understand how these traits develop, over time, in the bi-directional interaction between person and context.

This raises two key questions: then what is measurement good for, after all? And, how would socioculturalists evaluate creativity? For the first question the answer is rather straightforward: measurement is as good as its validity and reliability are. So if you measure divergent thinking, don't say you measured creativity. If you measure past creative achievement, treat the information for what it is - information about past creative achievement (in specific areas, collected through specific questions, at a given moment in time). Generalize with care and always remember the fact that a testing tool and situation leave their mark on what is being measured. How should we do evaluation? Well, that's a tricky question because it depends on why evaluation is done in the first place. You need to assess a dependent variable in an experiment? Then measurement is your friend (with all its strengths and limitations). You want to assess in order to understand and to support (often a sociocultural aim)? Then consider dynamic, relational and formative evaluations. Use, for instance, divergent thinking items as part of an interview to see now only what participants say but why they say it. Or use them with dyads and groups to observe how social interactions shape ideas (and, given the social contexts in which we most often create, increase the external validity of your findings). You will lose standardization but you will gain insight and a set of tools that work for assessment and intervention, at once.

James C. Kaufman

I'm generally of the belief that anything can be measured, at least to some degree. That said, I'm not a huge fan of existing measures. I feel as though we stayed too much in the trenches of divergent thinking for too long. So many studies have explored specific details, nuances, and

intricacies of divergent thinking and although I do see their value. I would like to see some of that energy applied to expanding or developing new assessments that aren't basically derivatives of divergent thinking. There are advances in divergent thinking that excite me, such as gamified, stealth methods (Shute et al., 2016; Shute & Rahimi, 2021), a better utilization of internet technology to focus on figural tests and a digitized figural divergent thinking test which asks for a single use of multiple items (Barbot, 2018, 2019), and the use of machine learning and artificial intelligence in scoring (Beaty & Johnson, 2021).

But on the whole, I want to see new directions. I love the Consensual Assessment Technique, in which expert raters evaluate actual creative products (Amabile, 1996), but it is cumbersome and a pain to use for a large sample. Indeed, the larger the sample, the more likely someone's lab members will be used as raters, which does diminish the underlying intent of the methodology (Baer & Kaufman, 2019).

Of course, it is easy criticize and hard to come up with new measures. I co-authored a commercial scenario-based test (Kaufman & Reiter-Palmon, 2019) which I am still hoping will find its niche, and a self-report measure (Kaufman, 2012) that is widely-used but bound by the limitations of any self-report test (Kaufman, 2019). I feel like much of creativity testing is stuck in a Catch-22 situation: creativity is generally not used in high-stakes assessment, in part because measures of creativity are seen as being terribly impressive. When they are, such as for gifted programs, a standard divergent thinking test is usually picked because it is reliable and solid. As a result, there is no incentive for divergent thinking tests to get better; indeed, if they were to change too much, that novelty would likely be seen as a negative development. To develop a new performance-based measure would require tremendous resources, yet most commercial publishers would be hesitant to back a new endeavor because there is not the level of demand out

there to warrant a large financial investment. Ironically, I think if there were a test of creative that was both new and useful, it would inspire a demand. I hope there are such publishers out there who are interested in pushing the envelope (such risk-taking has not been found in IQ test publishing over the last four decades; Kaufman et al., in press).

As with most aspects of creativity (and life), I am quite aware of the hurdles and limitations that make rapid forward progress unlikely. However, in spite of everything, I still try to hold onto a raft of optimism.

Individual Wrap-Up

Robert J. Sternberg

I will wrap up my contribution with 5 key points.

1. Creativity is a person x task x situation interaction.

All abilities, I suggest, including intelligence, represent an interaction between persons, tasks, and situations (Sternberg, 2021a). First, people differ in the abilities and attitudes they bring toward creativity. Second, some tasks, such as a creative-writing task, allow more creativity than others, such as a multiple-choice test. Third, some situations, such as having a teacher who welcomes creativity, encourage and cultivate creativity; other situations, such as having dictatorial teacher or a dictatorial government that brooks no dissent, discourage and suppress creativity.

This view is partially consistent with the sociocultural view that Vlad (Glăveanu, 2020; Glăveanu et al., 2019) has proposed. In email conversations, I have found that he, as well as James, have a position somewhat different from mine. They seem to believe that creativity is entirely sociocultural, or close to it. I do not agree.

Consider an autocracy that seeks thought control. Autocracy is not a matter just of dystopian novels such as *1984* (Orwell, 1950) or *The Hunger Games* trilogy. Creativity has become extremely dangerous in some, arguably, many countries. (In my own country, there is suppression of ideas from both the ideological right and the left.) Aspects of governmental control, such as in China, are Orwellian, compete with internment camps for the ideologically suspect. Surveillance is nearly omnipresent. In many countries, expressing anywhere, in any form, views counter to those of the government can result in imprisonment, torture, and possibly death.

In former times, East Germany was this way, but its methods were crude compared to those of the modern dictatorship. The upshot is that one can be creative in these countries so long as one stays within extremely narrow boundaries. The restrictions do not only apply to political commentary. Literary, musical, or artistic works that are seen as somehow countering the prevailing orthodoxy are suppressed. And, of course, the press is on a very tight leash. The main way that creativity is suppressed is through self-censorship, but when that does not work, there are governmental thugs ready to do the job. Is *creativity* in these situations comparable to that in truly free countries? In a word—no. I think complete relativism with respect to creativity is perilous, because it puts on an equal footing, situations that allow full expression of creative ideas and those that actively, harshly, and punitively suppress creativity. Suppression of creativity or ideologically conformist creativity, as in the former Soviet Union or East Germany,

is not comparable to free creativity, simply because it is the custom of a culture. A radical sociocultural view, I believe, would view creativity as comparable, as each culture is fully distinct. I am not sure that this is precisely Vlad's position, but it is where a full relativistic sociocultural view might lead. I believe it leads us to a trivialization and a diminution of what creativity is and can be.

2. Creativity is in large part the application of abilities through an attitude toward life.

The major obstacle to creativity, I believe, is people's unwillingness to defy themselves, others, and the prevailing Zeitgeist (Sternberg, 2018). Although I have devised assessments and James has a published test (Kaufman & Reiter-Palmon, 2019), in the end, I believe that a series of attitudes is what produces creativity: willingness to redefine problems, analyze one's mistakes, responsibly promote one's ideas, recognize that knowledge can harm creativity, take sensible risks, persist in the face of obstacles, retain self-efficacy, continue to grow, find what one loves to do, tolerate ambiguity, and so on (Sternberg & Williams, 2001). The greatest obstacle to creativity is not lack of creative abilities, but rather lack of deployment of creative abilities.

3. Creativity is morally neutral.

Part of what motivated this exchange was the realization that Vlad and James appear to believe that the long arc of creativity is toward the morally positive, because openness and willingness to think in new ways seemed to them to be morally advantageous in the long run. I disagree: I believe creativity offers no moral advantage whatsoever. Russian politicians, for example, have become ingenious at creating fake political parties and even having two candidates literally change their names and physical appearances to confuse voters and suppress

the vote in favor of politician in opposition to the Kremlin (Kramer, 2021). In the United States, whose system of government makes it, at best, a quasi-democracy, “stop the steal” propaganda would put to shame the propaganda of the former Soviet Union (see Spring, 2020). More than half of US Republicans believe that Donald Trump is still, in 2021, the true president of the United States (Guardian Staff and Agencies, 2021). The creativity of Silicon Valley has become something like that of Big Tobacco (Mickle, 2021). I suggest that developing creativity will not, in itself, create a better world (Sternberg, 2021c).

4. With creativity, purpose matters—a lot.

James and I disagree about the utility of the 4P framework for creativity (Rhodes, 1961), which he favors. I believe that the 4P framework for understanding creativity is lacking because it ignores purpose (Sternberg & Karami, 2021). Following up on #3 immediately above, we will not acquire, as a society, positive purpose through creativity defined simply as producing novelty and usefulness. Positive creativity is a step forward, but what one person or group considers “positive,” another may consider neutral or negative, as the aftermath of the 2020 US presidential election has shown. We need to teach young people to think in transformationally creatively—with creativity that makes a positive, meaningful, and possibly enduring difference to the world and that makes the world a better place through seeking a *collective, common good* (Sternberg, 2021c).

5. Propulsion matters, too.

Another “P” missing from the 4P model is propulsion (Sternberg, Kaufman, & Pretz, 2002). Consider, for example, what Kaufman and Beghetto (2009) call Pro-c creativity. It

encompasses both the minor baby steps that many scientific publications take in moving a paradigm forward slightly—providing bits of knowledge but also safe publications that yield promotions and salary increases—and the major “giant steps”—more revolutionary, paradigm-breaking ideas that change a field. The major difference between scientists who have high impact with their work and those who do not is not so much in their problem solving but rather in their problem finding (Zuckerman, 1983). Very few people will be “Big C” contributors to humanity. But it is perhaps too much of an oversimplification to lump together all of the different kinds of so-called Pro-c contributions. At this point in time, the world is stuck in so many respects: We need new paradigms, not just small incremental contributions to failed paradigms.

I thank James and Vlad for this wonderful opportunity to exchange ideas.

Vlad Glăveanu

What strikes me most as I am starting to write a final summary of my thoughts, informed by the answers of my two colleagues, is how incredibly rich and generative the field of creativity studies is. In these few pages we have a multitude of theories, concepts, orientations and pieces of practical advice that, while having some overlap, rarely get to be repeated. All three of us seem to believe that creativity is complex, meaningful, open to being educated and measurable, at least to some extent. We all share a concern that creative expression can be squashed by adverse psychological or social factors and are concerned by the validity of current creativity tests. Beyond this, the diversity of concepts and concerns we bring to our discussion is remarkable. Robert Sternberg talks about creative processes in terms of problem-solving and of

creativity in relation to existing paradigms, reminds us of his triangular theory of creativity and the theory of modifiability when it comes to obstacles, reviews the 8P framework and especially the link between purpose and wisdom when considering whether creativity is positive, uses componential models to advise parents and educators, and advocates for nontrivial, domain-oriented and situated measurements. James Kaufman brings up the 4Ps, 5As and 4Cs for the definition, the CASE model and the idea of creative effort for obstacles, covers the Creativity Ethos and the meaning theory of creativity to reflect on whether the phenomenon is positive, questions universal advices on how to foster creativity, and considers both the advantages and disadvantages of existing measures (e.g., consensual assessment, self-report measures).

For me, the unifying theme of the sociocultural approach I follow is the assumption that creativity is distributed, situated, embodied, contextual, and dynamic in its expression. I have tried, in my answers, to account for elements we don't pay much attention to generally in creativity research, things that go beyond the psychological. For example, we don't discuss much material aspects. In Sternberg's account of metacomponential processes underlying creativity, there is plenty of room to specify also the use of material tools in each of the seven steps of problem solving. Or in Kaufman's Four C model, there is a clear social theme in terms of how other people participate at each 'level', but the material aspect remains under-theorized. Then there is the self-other or actor-audience types of relations that are fundamental for my thinking about creativity, from its core processes to its cultivation and to its measurement. This social dimension comes in more clearly throughout the reflections of others, from transactional and transformational forms of creativity (Sternberg) to the relation between creativity and meaning in life (Kaufman). But oftentimes when the social is included, it tends to be along the line of componential models, mentioned by Sternberg, in which they are one component among others,

typically the last one, lumping together under ‘environment’ things that range from how others contribute to one’s creative identity, to group collaboration and to the role of the cultural context. This stance, however, doesn’t recognize how the ‘environment’ comes to structure all the other components. The idea that society or culture are external to creativity is alien for sociocultural theorists who place both at the center and not the periphery of creative work. In the same vein, while the struggle between creators and different audiences is acknowledged (a point we are reminded of by the idea of defiance within Sternberg’s triangular theory of creativity), sociocultural theory starts from the premise of co-creation in all creative expression (even solitary creativity follows its own inner dialogicality). A last theme that socioculturalists are eager to emphasize has to do with the normative and institutional aspects of creativity, the fact that both what we think and do creatively depends just as much on individual traits and skills as it does on cultural norms, values, and tools. This aspect can and should stimulate more reflections starting from the definition of this phenomenon and ending with measurement where there is some discussion of cross-cultural differences in testing but less about how culture frames, from the start, creativity and research alike.

There is a lot to learn from the commentaries of others and, in this sense, this exchange has been a very enriching exercise. Sternberg’s theory of modifiability was new to me and it captures something essential - personal theories of change - that is at the interface between the individual and the social. The theme of change is important in sociocultural psychology especially when it comes to collective action and social transformation. What we get in the theory of modifiability is an understanding of how individual understandings of change underpin creativity as a decision. The 8Ps and the balance theory of wisdom add complexity to the discussion about creativity being positive or not. It shows, most of all, that we cannot address this question only

by looking at creativity or within it (e.g., at sub-processes like perspective-taking, as I tried to do) - we need a bigger picture of other phenomena that come into play, wisdom being key among them. The idea of purpose is also very interesting for socioculturalists as it articulates, once more, personal intentions with social and cultural norms and values. Kaufman's emphasis on meaning and the positive value of creativity (at the very least) in the creator's life is also illuminating. Meaning is another core concept in sociocultural theory but what we have here is a useful emphasis on meanings that are truly personal and yet connect us to others, to our community and to a shared history. A perspectival approach to theories of creativity, put forward by Kaufman at the end of his first short essay, also captures something important about theory in general and dialogical, sociocultural views in particular. It shows that multiple frameworks can be useful but that they will come from different angles that need to be acknowledged: different domains, different concerns, different basic assumptions. In the end, there is no final theory of creativity to be formulated and that is probably for the best. At least from a sociocultural standpoint it is.

James C. Kaufman

Creativity is complex. Sternberg discuss several models that cover its mental processes, impact, type of contribution, and components (among others). Glăveanu highlights the many moving parts that make creativity a dynamic concept interlocked with a larger sociocultural context. In my own responses, I have referred to numerous theories, methods, models, and related topics. As I took notes on my own responses and those by Sternberg and Glăveanu, there were so many different ideas that I began to get nervous about what possible take-home point I

might reach in this essay. So, I returned to my roots as a creative writing major. I reread some of my favorite stories and then used them as a renewed source of inspiration.

There is a story about a baker who harasses a couple when they don't pick up a cake for their child; he is unaware their child was hit by a car and killed. When they confront him, he apologizes and offers them fresh, hot bread. It is, he tells them, a small good thing (Carver, 1982).

I love the beautiful simplicity in this story. Creativity, like bread, is a small, good thing.

I wish the parable of the blind men and the elephant – in which each person touches a different part and comes away with disparate conclusions – was not pejorative. Because the central metaphor, of so many people relying on separate lens and experiences and emerging with different thoughts and truths, is beautiful in a way. On one hand, academia can often feel like a series of silos, where we are told to be interdisciplinary in our approaches yet offered no support or rewards for doing so. Some articles on creativity are so ensconced in the discipline, whether business or education or cognitive science or engineering or social psychology, that the language and core concepts can vary so much that it does not feel as though we are talking about the same concept.

Yet when one seeks out insight on creativity from enough scholars in enough disciplines, there are moments of exciting insight – those times when I realize that I am the one who cannot see the full picture. Finding that fresh idea or perspective that has applications for one's own approach is exciting. In the end, for those scholars with the quixotic job of studying creativity, perhaps an attainable goal is to discuss the topic with one's own insights and approaches, and hope that the results are universal enough to be valuable to others. It is what the writer Robert Olen Butler (2005) calls "sumo Zen," after seeing this idea repeatedly emerge from sumo

wrestlers interviewed before a big match. They will do their own brand of sumo and they will do their best, and the outcome is beyond their control.

I feel like I can come across a bit pollyannaish at times, with my focus on the possibility of good. Don't misunderstand. These are terrible times, and creativity isn't some Excalibur sword that will rescue humanity. Creativity is a difficult topic to study in many senses of the word. It is not an area that inspires a university or funding agency to say they want to hire or fund someone with that specialty. It is a hard construct to measure. Many of our paradigms are decades old and in need of advancement. Even within creativity journals, there seems to be a push to embrace a methodologically sound but unimportant and uninteresting paper over a more tentative one with more far-reaching implications and ideas. The minutiae of the mundane threatens to drown out much else.

But I hold onto hope. One of the stories I revisited talks of a man who swims to the deep ocean to get rid of a cursed necklace in the middle of the night. He drops it, only to have the necklace get ensnared on a shark's fin and wake it up. The narrator ends the story with the shark pursuing the swimmer, cautioning the reader against reading too tragic of an ending into the story: "The shark is now in possession of the necklace" (Holst, 1989, p. 54)

We are at a time when potential creators have access to technology and an audience that was unthinkable a few decades ago. To a degree, artists and scientists and entrepreneurs can bypass traditional gatekeepers and publish, produce, market, and release their own creations all on their own. There is absolutely a downside, with a glut of amateur products that make it difficult to find the flowers hidden among the garbage. But there are possibilities. Creativity is not always or usually a benevolent construct, but it can be. We are at a period of time when some

problems seem to run so deep and be so insurmountable that creativity may be our only hope – to find new ways of combatting climate change and widespread racism and pandemics.

One last reference to a brief piece of literary fiction, in which a narrator sees a woman threatening to jump off of a building. She reflects that she would tell her about the kidnapped businessman from Bogota. It took time for his family to raise the money, and the kidnappers had to make sure he didn't die. So they made him exercise and eat healthy food. By the time that he had been ransomed, his doctor says he is in the best shape of his life. The narrator hopes that the woman will have the same insight as that businessman: How do we know that what happens isn't good (Hempel, 1986, p. 98)?

In Conclusion:

Comparative Wrap-Up

In this section, we highlight the similarities and differences among our views on creativity.

Sternberg

Vlad, James, and I all believe in the same basic definition of creativity as entailing contributions that are novel and useful or effective. We further all believe that what is novel and useful is a sociocultural judgment. Indeed, it is hard to see how it could be otherwise, as there is no universal standard for novelty and usefulness. But I believe we have three major points of difference.

The Ultimate Arc of Creativity. James and Vlad are more optimistic about the ultimate positive arc of creativity than I am. James even has a book in press, *The Creativity Advantage*

(Kaufman, in press) about how creativity generally helps creators in their lives. I once shared these views, even back to the earliest days of my career (Sternberg, 1986); I no longer do.

Dictators, would-be dictators, and assorted autocrats, malefactors, and run-of-the-mill corrupt leaders in a growing number of countries are finding very novel, and to them, useful ways to shut off information from the outside to their countries and to create Orwellian nightmares for the people of those countries. Vlad states: “At the heart of creativity, we find a certain degree of openness to other perspectives and ways of seeing the world. In other words, a measure of flexibility and open-mindedness is inscribed into it.” But the dictators, although creative, are not open-minded: Rather, they are *single-minded* in their pursuit of power, riches, or often, a combination of the two.

It is not just dictators. Graduates of some of the best universities are going to work creatively in Silicon Valley and other incubators for insanely wealthy entrepreneurs or corporations whose agendas are to find creative ways to become even more insanely wealthy—not for the benefit of, but rather at the expense of the customers they are supposed to serve. Often, they do so in the supposed service of “free speech,” which too often translates to their promoting whatever increases their bottom line, regardless of its individual mental-health consequences and its consequences on societal wellbeing.

Those of us who teach for creativity have been and still are concerned with the excessively fact-based or, at best, analytical focus of school curricula. In the third decade of the 21st century, that concern no longer is enough: We must take responsibility for teaching students to deploy creativity positively and even transformationally rather than negatively.

Sociocultural view of creativity. All three of us share a sociocultural view of creativity, in that creativity is always embedded in a sociocultural context. However, I have become increasingly less enchanted with fully sociocultural views.

We need to pay much more attention not only to levels of creativity and kinds of creativity (e.g., Big-C, Pro-c), but to the (a) integrity and (b) transformational nature of creativity. Too much of creativity today, especially of societal leaders, including but not limited to those of autocracies, has little or no integrity at all (Sternberg, 2021b). It does not correspond to external reality. As Orwell (1950) said regarding control of the narrative: “Who controls the past controls the future. Who controls the present controls the past.” In other words, the stories of the past, present, and future are rewritten to satisfy the constraints of power, not of fact. Nor is much of creativity today internally consistent. Rather, it is deliberately Orwellian. As Orwell (1950) said with regard to internal inconsistency: “Doublethink means the power of holding two contradictory beliefs in one's mind simultaneously, and accepting both of them.” The idea is that an obedient servant of the state that engages in mind control will believe whatever they are told, including that, in Orwell’s terms: “War is peace. Freedom is slavery. Ignorance is strength.” On this view, for example, a war in Ukraine becomes a “special military operation,” a wonderfully meaningless but nevertheless menacing Orwellian term for an increasingly Orwellian society. Creativity without integrity often is pseudo-transformational rather than transformational, seeking to appear to serve the common good when it serves only the interests of those displaying it, such as those in malevolent governments.

In sum, the relativism of sociocultural views needs to be complemented by an emphasis on creative integrity and transformation, which transcend relativism. Is the creativity true to the

state of the world, at least, as best we can know it, is it internally consistent, and is it directed toward ends that serve a common good?

Pro-c. Finally, I wonder whether the time has come to retire, or at least to reconceptualize the category of professional (Pro-c) creativity (Kaufman & Beghetto, 2009). It may be too broad a category. For example, it lumps together the creativity for which hack scholars pay money to publish their work in predatory journals that virtually no one reads with that of serious scholars who publish in the top journals in their fields. It conflates a piece of published scholarship with no citations with one with thousands of citations. Nazi or Soviet artists may have been paid for their work supporting the propaganda of the state, but was their work in the same category as that displayed in serious museums that may not be world-changing (Big-C) but that is seriously impactful?

It may be true that, in each case, creative scholars are professionals in the sense of being paid for their work, but is being paid for work, or doing it as part of a job, paid or not, really a basis for creating a category for creativity? I suppose I once thought so. But many countries, including my own, have a problem: They have so emphasized memorization and, at best, analytical thinking in their education, that they have produced too many people who are creatively challenged because the schools never taught them how to think and act creatively. Add to this the toxic reward system of social media and even of the Internet in general, and we end up with too many people who are, if creative at all, toxically so (Sternberg, in press-b). Social media often reward self-assertion and stirring things up, not positively creative ideas (see Haidt, 2022). Too much of scholarship has migrated to social media because there simply are no standards for publishing there.

All three of us—Vlad, James, and I—share a commitment to the study and propagation of creativity. I believe that now all of us—you too!—share an obligation to ensure that the next generation uses their creativity to make the world a better place, one that we will be glad to leave to our children and children’s children.

Glăveanu

The fact that there is more that unites us than divides us shouldn’t come as a surprise. After all, we didn’t start a dialogue by chance and didn’t collaborate on past projects randomly. Common ground is what makes communication possible, and I was delighted when, a few years ago, both Bob and James agreed to co-author, with a number of other colleagues, the sociocultural manifesto in creativity research (Glăveanu et al., 2020). That piece stands as a reminder of what we have in common; but, as the present dialogue demonstrates, we don’t necessarily agree on everything. In fact, dialogues thrive on difference and require the interlocutors (and their audiences) to emerge with new understandings about the point of view of the other and, by extension, one’s own point of view.

There are two big directions toward which Bob and James are taking the community at the moment that I am really excited about and that enrich my own thinking about creativity. James’s emphasis on the relationship between creativity and meaning, especially meaning of life (see Kaufman, 2018) is inspirational for a number of reasons. First, it adds a new dimension to a field heavily oriented toward creative products and their qualities, a dimension that takes us closer to human experiences of the world and the way in which they are shaped by creativity. Second, it argues for the value of creativity beyond easy associations with novelty, originality, usefulness, etc. Creative action transforms the self and changes one’s life-course, infusing it with purpose and meaning. Third, this framework draws our attention to the individual without being

individualistic. Meaning of life is personal but, at the same time, it is deeply symbolic, social, and cultural. And so is creativity. We engage in meaningful acts of creativity for ourselves and for others, the two are intrinsically related. And if we want to understand better how this other-orientation can gain its pro-social and wise underpinning we can rely on Bob's lengthy discussions of 'transformational creativity' (e.g., Sternberg, 2021).

The notion of transformational creativity makes us aware that creativity relates to more than human experience – it is also called upon to help us navigate the big challenges of today and the ethical dilemmas that accompany them. Creativity might not always be positive in its impact (despite what the relation to meaning of life might suggest) but this should make us even more committed than ever to studying and fostering its 'noble' forms.

In this context, what might set my views apart from those of Bob and James? To zoom in on an important difference, I return to the Manifesto. Within it, we collectively argued for the fact that creative expression has a social and cultural dynamic that cannot be ignored or downplayed. My personal views go a step further and consider society and culture central for creativity, a true condition of possibility for any creative act (see also Glăveanu, 2015). This means that, from meaning of life to world-changing breakthroughs, we need to consider creative processes and outcomes as co-created. This is a radical position inasmuch, as Bob often reminds me, creators do often need to struggle against the society and culture of their time. James, talking about assessment, makes the point that we need to measure creativity and it is only pragmatic to continue to do so in a more standardized, individual-based way. The sociocultural perspective I develop in my work aims to transcend the kind of dichotomies hidden in the assertions above. The 'us versus them,' 'person versus the world' discourse ignores the fact that there would be no creative person to talk about outside a sociocultural environment and, as such, any oppositions

need to be understood on the background of a fundamental interdependence between self and other, mind and context, creative actors and their audiences. This has important consequences for how we think of our own creativity, the creativity of others, and the assessment of both.

Assessing creativity is, after all, a social and cultural practice and what this means is that upholding standardization and individualization are sociocultural choices. The question of what creativity theories and assessments are available reflects to the broader question of what other worlds are possible. And, coming back to the solid bridges between the three of us, they come back to how any new worlds for creativity, society, and culture depend on meaning and its continuous transformation.

Kaufman

In response to quite reasonable initial reviews that our three views are too similar, I have tried to highlight areas of divergence. I think that, ultimately, the biggest way that I differ from Bob and Vlad is that I am ultimately very focused on the practical and doable.

Bob speaks of the importance of transformational creativity that changes the world. I do not fault his arguments for implementing this concept into our educational system, other than

that I simply cannot envision a context for this to happen on a wide-scale basis. This past month, Florida banned mathematics textbooks that included any reference to social emotional learning (Schlack, 2022). I don't see a time coming any time soon when even a progressive public school district would consider mentioning most of his ideas about transformational creativity. I like the idea and I generally agree with the idea, but I don't see it happening. My forthcoming book *The Creativity Advantage* (Kaufman, in press) focuses on how creativity benefits the creator, because I think people may be more likely to try being creative if they think it will have specific advantages *for themselves*. I would argue that my own perspective is exponentially more cynical about human nature and the transformative power of creativity because most people are, at best, self-interested.

It is a little harder to speak to how I differ from Vlad; even an unobservant reader may notice we often cite co-authored papers in our responses. Like Bob, I can appreciate and endorse the sociocultural perspective without fully aligning with all of its tenets. One major place I diverge from Vlad's – and Bob's – perspective is in how I see the importance and value of the measurement of creativity.

I am, literally, the child of assessment. My parents develop IQ tests (e.g., Kaufman & Kaufman, 2004) with the idea that tests can be improved from within; by working with major test publishers, they might improve the theoretical basis of IQ tests, move beyond a global score, reduce differences by ethnicity, and generally encourage smarter and more ethical usage of these tests (Kaufman et al., 2015). The extent to which they have succeeded can be hotly debated (Sternberg, 1984), but I grew up seeing the good that testing can do (the bad that testing can do is already well-known to most people). As in my earlier point, I do not disagree with any of the specific points that Bob or Vlad make about measurement (I am strongly in favor of domain-

specific approaches and being realistic about what a test actually measures). I do, however, disagree with the spirit of some of the points.

If creativity is not measured, even with the mediocre tools we readily have at our disposal, then it typically is not considered in gifted or college admissions. Given, for example, the general lack of individual differences by ethnicity, gender, or culture on creativity measures compared to intelligence and ability measures (Kaufman, 2010; Luria et al., 2016), this omission has striking implications for issues of equity and diversity. When Bob's measures were used in college admissions, the results were terrific (Sternberg, 2010). However, they haven't been widely adopted. Part of the reason is that when fixed and near-trivial measures are completely disavowed, what is left is time and resource intensive. When we favor dynamic interviews over standardization, as Vlad favors, we end up using up even more time and resources. I wish we lived in a world where public universities (or the world) had the wisdom to see the long-term benefits of such an investment... but we don't. If faced with a choice between incremental change or no change, I choose incremental change.

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