



## 创造力 + 创新研究项目 Program on Creativity + Innovation

### **Creativity Considered**

Spring 2017

Meeting time: Tuesdays, 2:00pm-5:00pm, Room 900

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### **Background**

We hear every day about the importance of creativity in our lives, careers, and societies — its importance for personal development, for the generation of new ideas, forms, and expressions, for the work of organizations, large or small in scale, science and technology or arts and culture-focused, in the private or public sector. And yet, it is important to ask if creativity can be usefully studied or is it, in fact, something best left to life, luck, or other factors that may determine one's abilities and opportunities in this area? The premise of this course is that, while not taking away from what can be called the magical aspect of creativity, we can benefit from considering creativity in some detail.

Another premise of the course is that there is merit in considering creativity across very different areas of human enterprise — science, art, business, government, and more. Implicit in this premise is the assumption that while creativity is manifested in many different ways, there are some common characteristics of creative work which we can identify and put into practice.

A detailed consideration of creativity across various areas of human enterprise is the subject matter of this course.

### **Method**

The course will adopt two-pronged approach to considering creativity. We will look together at a range of writing on the subject of creativity. We will also develop semester-long case studies of people (“creators”) who have produced important breakthroughs in the arts, sciences, technology, business, or elsewhere. This way, readings are supplemented with examinations of real people and their creative endeavors. At the same time, the case studies are informed by some general ideas and concepts, so that they become not just descriptions but also analyses of the creators in question.

For the case studies, students will form teams of two, and each team will select and study a particular pair of creators. By studying two people rather than just one person, each team will be helped to go beyond just telling the stories of creative people and to identify similarities and differences across creators. We will also pool together the full set of case studies undertaken in the course to look for overall patterns and lessons.

### **Objectives**

There is a common prevailing narrative about creativity — a narrative that emphasizes the quest for novelty, the freeing of oneself from constraints, the importance of the individual spirit, and the like. While not denying that there is truth in this narrative, we believe that it is an incomplete picture and

that there are also other characteristics to be found underneath creativity. A first objective of the course is to expand on this narrative and look at how creativity comes from paying close attention to what already exists as well as seeking the new, from operating under constraints as well as free of them, from groups as well as individuals, and from many other directions, too.

By the end of the course, we will have read and considered a variety of writings on creativity, and we will also have assembled a database of creators from a variety of times, places, and areas of work. We will have gone on an exploration of creativity 'out there in the world.' A second objective of the course is to use this journey as a way to gain a deeper understanding of our own creative selves.

## **Deliverables**

There are four deliverables associated with the course:

- first-round presentation (teams)
- accompanying handout (individuals)
- second-round presentation (teams)
- final essay (individuals)

Your grade for the course will be based on evaluations of your first-round presentation (10 percent), accompanying handout (30 percent), second-round presentation (10 percent), final essay (30 percent), and class participation (20 percent).

Each deliverable will be graded based on: (i) organization and clarity of the oral and/or written material; (ii) accuracy and depth in use of concepts from readings; (iii) power and originality of insights provided. Class participation will be graded based on: (i) level of pre-class preparation indicated by comments made in class; (ii) engagement in discussion in class of assigned readings; (iii) engagement in feedback in class on fellow students' work.

The grading scale is from A to F, where the grades indicate:

- A: excellent organization and clarity in all work, accurate and in-depth use of concepts, powerful and original insights, well-prepared and effective class contributions
- B: good performance with respect to these same criteria, with sound general grasp but less-than-outstanding content and engagement evidenced
- C: satisfactory performance with respect to these criteria, with basic understanding and engagement evidenced
- D: passable performance with respect to these criteria, with superficial understanding and limited engagement evidenced
- F: unsatisfactory performance with respect to these criteria

## **Schedule**

Class #1, February 7th: Introduction

### **Assignment**

In preparation for our first class, please read through the syllabus, which will give you a broad idea of how the course will unfold.

In class, we will do self-introductions and share our motivations for joining this semester-long consideration of creativity. So, please give some thought in advance to how you want to introduce yourself.

### **Plan**

We will outline a strategy towards studying creativity that involves studying both some frameworks and tentative theories, and collecting data. The data will take the form of semester-long case

studies which you will be undertake. We will use the case studies to try to discern some patterns and arrive at some hypotheses concerning creativity.

We will put forward an initial hypothesis on creativity, namely, that successful creators frequently exhibit dualities — in the form of the coexistence of opposite-seeming, even seemingly contradictory, characteristics and behaviors.

At the end of class, we will hand out playing cards, on each of which is the name of a famous creator (from the arts or sciences or professions) and ask you to come to the second class ready to teach the rest of us something about the person on your card.

### Class #2, February 14th: Creativity as Superposition

#### **Assignment**

For the creator on your playing card, come up with five surprising facts about that person's life and work. Use your own judgment as to what constitutes "surprising," but definitely of interest will be paradoxical-seeming facts such as an apparent setback that turned out to be key to the creator's future success (or similar fact).

Read the Preface and Introduction in *Wired to Create: Unraveling the Mysteries of the Creative Mind*, by Scott Barry Kaufman and Carolyn Gregoire, Penguin Random House, 2015.

(i) List all the instances of duality you can identify in the reading. Come to class ready to share the instances you have identified and to explain the role that the authors say each duality plays in creativity.

(ii) Kaufman and Gregoire write: "As with happiness, it seems that the more you strive for creativity the less likely you are to achieve it." Please come to class ready to talk about whether and why you agree or disagree with the idea that striving for creativity makes you less likely to achieve it.

#### **Plan**

You will spend a few minutes in class making a poster of your five surprising facts about your creator. We will go around the room and have short presentations of the posters.

We will then review, from the reading, some of the simple frameworks which have been proposed as capturing the creative process. There are various two-stage models: divergent thinking followed by convergent thinking; idea generation followed by idea selection. There is a textbook four-stage model: preparation, incubation, illumination, verification.

We will then move away from a view of the creative mind as operating unidirectionally, going from start of creative process to end, and towards a view of creativity as a superposition of mental processes, such as cognitive and emotional, deliberate and spontaneous. This view can be seen as a more concrete version of our initial duality hypothesis.

After our discussion of the reading, we will turn to laying out the process of choosing creative duos for the semester-long case studies. The first step will be to ask you to form teams of two. We will then go over some criteria for you, in each team, to employ as you make your choice of duo.

### Class #3, February 21st: Creativity as Paradigm Shift

#### **Assignment**

Please come to class with your team's choice of creative duo. As you home in on your choice, keep two considerations in mind. One is to make sure that there are some interesting contrasts between the two people who constitute your duo. The other is that you choose people whom you care about. (Likely, the people in your duo have some special meaning for you — as role models, or heroes, or,

perhaps, anti-heroes. Be sure to have some personal investment in your choice, so that your project takes on personal significance for you.)

Come to class with a poster depicting the creative duo you have chosen. Be ready to give all us a short briefing about who the people you chose are and, importantly, about your motivation for choosing your duo.

Read Chapter 10 (“Thinking Differently”) in *Wired to Create*. In this chapter, Kaufman and Gregoire paint a picture of the creator as thinking differently, initially unpopular, iconoclastic, dangerous, courageous, nonconformist, questioning, self-assured, skeptical, risk-taking, independent, playful, prepared to be wrong, individualistic, productive, and a maker of connections (and more).

(i) Which of these qualities would you argue are truly necessary to creative endeavor?

(ii) For which qualities can you think of creators who constitute counter-examples, i.e., who do not exhibit one (or more) of the qualities Kaufman and Gregoire list?

### **Plan**

We will go around the room so that you can present and share thoughts about your posters.

We will then turn to a discussion of the often-dominant narrative of the creator as the person who takes on the prevailing paradigm and succeeds in replacing that paradigm with a new one. We will consider ways in which this narrative is in need of modification, to allow for several factors: a creator can be part of a trend or even of a current paradigm; a creator can be part of a group; a creator can fail to dislodge an old paradigm (while someone who comes later succeeds). We will consider the risk that the dominant narrative fails to point to many examples of creativity all around us.

### Class #4, February 28th: Creativity from Four Great Motives

#### **Assignment**

Read Chapter 2 (“Passion”) in *Wired to Create*. Come to class ready to advocate:

(i) in favor of one of the propositions the authors make in their inquiry in this chapter into passion and creativity;

(ii) against another of the propositions the authors make.

Read, too, the essay “Why I Write,” by George Orwell, *Gangrel* magazine, Summer 1946. Focus on what Orwell calls “four great motives” for writing. As you read, entertain the possibility that these motives also apply to other areas of creative human endeavor (aside from writing).

### **Plan**

We will consider George Orwell’s four great motives for writing: sheer egoism, aesthetic enthusiasm, historical impulse, and political purpose. (We assume that these motives can apply to many areas of human creative endeavor in addition to writing.) We will scrutinize Orwell’s definitions of these motives, and we will examine ways in which, as Orwell says, these motives may be in tension with one another and may also fluctuate in strength over time.

In class, you will spend some time, in your teams, developing posters on which you say something about the presence (or not) of each of Orwell’s four great motives in your creators’ lives. We will then go around the room for poster presentations.

## Class #5, March 7th: Creativity from the Integrating Brain

### **Assignment**

Read Chapter 6 (“Openness to Experience”) in *Wired to Create*. Read, too, Chapter 3 (“Reaching Xanadu”) in *The Creating Brain: The Neuroscience of Genius*, by Nancy Andreasen, Dana Press, 2005.

Both of these readings reach to some degree into neuroscientific inquiry into creativity. We want to be ‘consumers’ of some of these inquiries, and to discern what useful lessons we might be able to draw, at a non-technical level, from them as we consider creativity in our course.

A topic touched on in both readings is that of more ordered relative to less ordered thought. Come to class ready to summarize and share with the rest of us your understanding of what each reading has to say about the mechanisms of less ordered thought, in particular, and of what each reading says might be the benefits to creativity of less ordered thought.

### **Plan**

We will look at some of the insights which neuroscience — naturally, just tentative insights, at this stage of development of the field — can offer into the nature of creativity.

Important to note is that our goal will not be to reduce the study of creativity to the study of the brain. (This would be an error of confusing material with analytical reductionism. Just because creativity comes physically from the brain, it does not follow that all explanations of creativity must be sought at the neural level.)

We will learn that neuroscience identifies various dichotomies in mental processes, including, importantly: bottom-up (sensory inputs) vs. top-down (expectations, frames, etc.) processing, and conscious vs. unconscious processing. We will learn how the brain integrates these (and many other) mental processes, and we will discuss how integrating activities are the natural ones to associate with creative mental activity.

In class, you will devote some time to working on finding out what your creators have said about their own creative mental processes (or, what other people have said about your creators’ mental processes).

## Class #6, March 14th: Creativity from Five Forms of Combination

### **Assignment**

Read “Combinatorial Creativity and the Myth of Originality,” by Maria Popova, at <http://www.smithsonianmag.com/innovation/combinatorial-creativity-and-the-myth-of-originality-114843098/>; and “What Is Creativity? Cultural Icons on What Ideation is and How It Works,” by Maria Popova, at <https://www.brainpickings.org/2013/09/06/what-is-creativity/>. (In this second reading, concentrate on the parts that talk about combination.)

Come to class ready to discuss and help draw lessons from the different examples of creativity-as-combination described in these two readings.

### **Plan**

The idea from last class of the brain as integrator works well as a kind of physical foundation for what is very often argued to be a fundamental creative maneuver, namely, combination of ideas.

We will see how many creators from very different fields — literature, music, entrepreneurship, math, physics, evolutionary biology — converge on a very similar way of talking about creativity, namely, a way that puts combination of ideas center-stage.

We will identify five distinct modes of combination from the reading: bringing together two equal-matched components; bringing a peripheral component into contact with a core; putting ingredients into a conceptual ‘slot machine’ and, metaphorically, pulling the handle; putting next to each other two very different components which are in some tension with each other (“bisociation”); and putting the spotlight on a particular combination by taking away all other ingredients present (“subtraction”).

We will again devote some class time to your projects — this time, looking for places where combinatory thinking is evident in your creators’ work.

### Class #7, March 21st: Creativity from the Group

#### **Assignment**

Read Chapter 12 (“Group Creativity”) in *Explaining Creativity: The Science of Human Innovation*, by R. Keith Sawyer, 2nd edition, Oxford University Press, 2012. Come to class ready to:

- (i) summarize for everyone the main group creativity processes described (i.e., brainstorming, nominal groups, ...);
- (ii) share what you consider to be the most counter-intuitive research findings mentioned about the effectiveness or ineffectiveness of group creativity.

#### **Plan**

So far, our focus has been on creativity at the level of the individual. This session, we will shift attention from the individual to the group. The interest in creativity at the level of the group is the natural hope that some kind of ‘superadditivity’ comes into play — that the creative output of a group is greater, in some suitably measured way, than the sum of the outputs that would result from individual work by members of the group.

We will consider some of processes that have been proposed over the years to promote group creativity, including: brainstorming (which has four main ingredients: no criticism, freewheeling, quantity, and combination), nominal groups (where individuals work first alone and then pool their work), and competitions.

We will cover some research which reaches the counter-intuitive conclusion that groups can sometimes be ineffective. The famous term “groupthink” was coined to describe this case. We will consider the challenge of effective group creativity, namely, how to achieve the benefits (different knowledge, perspectives, etc. among group members) without taking on accompanying cost.

### Class #8, March 28th: Creativity from Constraints

#### **Assignment**

Read Chapter 9 (“Turning Adversity into Advantage”) from *Wired to Create*. Read, too, “Can limitations and restrictions be liberating?” by Garr Reynolds, at [http://www.presentationzen.com/presentationzen/2007/03/can\\_limitations.html](http://www.presentationzen.com/presentationzen/2007/03/can_limitations.html).

Come to class ready to address the questions:

- (i) What are the differences between the two readings in terms of the kinds of constraints they describe?
- (ii) To what extent do some or all of the constraints described apply to your creators’ lives, processes, and environments?

#### **Plan**

A variety of constraints and limitations have been argued to enhance creativity. We will distinguish and discuss two main types: externally imposed constraints and self-imposed constraints. We will

review some of the famous examples of the first type of constraint, which are mostly stories of artists and writers who turned setbacks and even tragedies into moments that led to great accomplishment. Our goal here is not to advocate seeking adversity (a cartoon view of the creator's life), but to be open to the general possibility that obstacles can become opportunities.

In this vein, we will talk about less dramatic instances of external constraints, such as those of limited money, time, space, available people, etc., which often arise in creative projects. We will consider the view that the presence of such constraints, up to a point, at least, can actually enhance creative output.

This line of argument will lead us to look at how creators may deliberately choose to impose constraints on themselves (such as when someone adopts the rules of a particular form of poetry or music). More broadly, many creators talk about a 'stripping away' process involved in uncovering the real work one is attempting bring to a successful point. We will examine this idea.

#### Class #9, April 11th: First-Round Presentations

##### **Assignment**

See the sections "First-Round Presentation" and "Accompanying Handout" below, for detailed instructions on preparing these deliverables.

As you are finalizing your first-round presentations, please remember a few things:

(i) choose the presentation format which you feel suits you and your topic best --- slides, short video, paper-based, mainly oral, ... --- but remember that your presentation should include, for each of your two creators, a visual representation of at least one breakthrough piece of his or her work;

(ii) tell a story, which is based on the research you have done, but which is, nevertheless, a story in the sense that you command our attention by the way you take us through: a case study of each creator; some thoughts about the comparison between the two creators; and, very important if relatively brief in this first-round presentation, what all this means for you and your creative self;

(iii) in short, dig into your own thoughts and feelings and, in this way, make us care about what you are telling us;

(iv) prepare and distribute an accompanying handout (as an individual piece of work).

#### Class #10, April 18th: First-Round Presentations Cont'd.

After the first-round presentations are complete and the accompanying handouts have been submitted, there will be detailed feedback sessions scheduled to help you move to the next level of work in your second-round presentations and final essays.

#### Class #11, April 25th: Creativity in Action

##### **Assignment**

Read the chosen excerpts from the book *The Artist's Way*, by Julia Cameron, TarcherPerigee, 25th Anniversary Edition, 2016. This is a popular book which offers readers an approach to developing their own creativity. Please read the excerpts lightly (you do not need to study them closely) and come to class ready to respond to the following questions:

(i) Does the approach taken in *The Artist's Way* fit with the theoretical analyses of creativity which we have read this semester? How does it, or how does it not?

(ii) Do you believe that following the approach prescribed in *The Artist's Way* can help you to unleash your own creativity? Why or why not?

## Plan

The reading and discussion for this class will move us into the final phase of the course, where we will work on ‘owning’ what we have discovered during the semester, so that the ideas from the course will continue to matter, after the course ends, as we each go on building our creative selves.

The reading talks to practical steps one might undertake in daily life to continue this building process. The main theme is the re-emergence of a duality. There is the practice of paying attention to developing one’s internal life. There is also the practice of paying attention to developing one’s external life. In the reading, the respective practical tools are the “morning pages” and the “artist date.” The first exercise is very tightly defined and specific. The second exercise is more loosely defined and free-form. We will share thoughts on the extent to which these two exercises might or might not be effective in our lives.

### Class #12, May 2nd: Second-Round Presentations

See the sections “Second-Round Presentation” and “Final Essay” below, for detailed instructions on preparing these deliverables.

### Class #13, May 9th: Second-Round Presentations Cont’d.

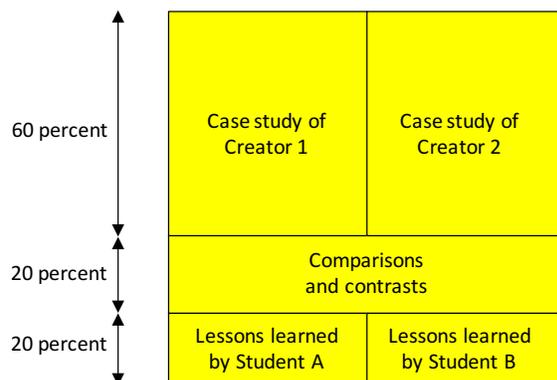
After the presentations, we will spend some time reinforcing expectations about the final essay.

### Class #14, May 16th: Concluding Thoughts

In our final class session, we will each share thoughts on what the course has taught us and on how we each plan to keep learning.

## First-Round Presentation

Your first-round presentation will be a joint activity undertaken by your team. Build a 20-minute presentation which accords with the following template. (For each presentation, there will be 10 minutes scheduled afterwards for audience questions and discussion.)



As you can see from the template, you should devote something over half of your presentation to giving us brief case studies of each of your two creators. (You can divide up this task, and each focus on one of your two creators.) Then, there will be a shorter part of the presentation where, together, you look at your two creators side-by-side and make comparisons and contrasts. The final part of the presentation will consist of what lessons each of you have drawn from your project about your own creative selves.

### Questions to be Addressed in the First Part of the Presentation

As you put together your case studies, be sure to cover the following ground.

1. For each creator, address the following general questions about the person:

- a. Was the creator thought of by other people as very smart, or not?
- b. In what ways was the creator curious or exploratory?
- c. Did the creator exhibit courage, or self-doubts, or both?
- d. What were the creator's important family, mentor, patron, or other relationships?

2. For at least one breakthrough piece of work by your creator, provide a small visual representation (photo or video or diagram or similar). Then address the following questions:

- a. What domain or domains of human activity were affected by the breakthrough?
- b. How was the breakthrough different from what had come before?
- c. Why was the breakthrough important in relationship to existing domains?
- d. Was the influence of the breakthrough immediate or did its effect take time to develop?

3. For the breakthrough piece of work you have chosen, address the following questions about the creator's process and environment:

- a. What motivated the creator to do the work?
- b. Did the creator report a thought process that was fully conscious or more dreamlike?
- c. Can the breakthrough be seen as arising from combinatory thinking by the creator?
- d. Were there significant constraints which the creator overcame in doing the work?
- e. Was the creator working alone or as part of a group at the time of the breakthrough?
- f. Was the creator living in a single culture or in a place where cultures met?
- g. What was the economic and political environment in which the creator was working?

#### Questions to be Addressed in the Second Part of the Presentation

As you conduct your compare-and-contrast exercise, think, in particular, about the following questions.

4. What are the most striking differences between your two creators, concerning their lives?
5. What are the most striking differences between your two creators, concerning their work and thinking processes?
6. What are the most striking differences between your two creators, concerning the environments in which they worked?
7. In light of differences across creators you have uncovered in the course of addressing the preceding three questions, what do you think is the best way to develop a general framework to understand creativity?

#### Questions to be Addressed in the Third Part of the Presentation

This will be the most subjective and personal part of each presentation. You should give a lot of individual thought to this part. Here are some questions to help guide your thinking.

8. What was your perception of your own creative persona at the start of the course?
9. Which readings were most challenging of assumptions you had previously held about what creativity is and how it occurs?
10. What aspects of the lives, work, processes, and environments of the creators you have studied were most surprising to you?
11. What aspects of their lives, work, processes, and environments were most inspiring to you?

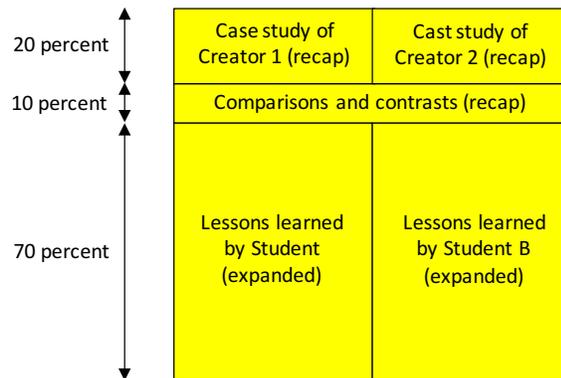
12. How has the course changed your perception of your creative persona, and what mental habits, behaviors, and decisions will you adopt, following the course, to develop further your creative self?

### Accompanying Handout

You will each produce a handout, as an individual piece of work, to accompany your joint first-round presentation. The handout will cover your case study of your chosen creator in your team’s creative duo, the joint compare-and-contrast exercise, and your individual lessons learned.

### Second-Round Presentation

Your second-round presentation will a joint activity undertaken by your team. Build a 15-minute presentation which accords with the following template. (For each presentation, there will be 15 minutes scheduled afterwards for audience questions and discussion.)



As you can see from the template, you should begin with a recap — a highly streamlined recap — of the case study of each creator which you put together for your first-round presentation. (The guess is that you will show at most two slides on each of your creators.) Likewise, offer a very brief recap of the comparisons and contrasts you made across your two creators. (Most likely, show one slide on this material.) You should draw here on the work we do together in our feedback sessions on identifying major points from your first round. (But these are your presentations, and you should design what you consider to be the most effective recap.)

The large majority of your second-round presentation should be devoted to your sharing the current state of your thinking about creativity in general and your creative self in particular. Describe where your project, put together with the class readings and discussions, has brought you in regard to these issues. Talk here in terms of “before” and “after,” i.e., compare where your thinking was back before the course began with where it is now. Each member of the team should talk to his or her individual journey to date.

### Final Essay

Your final essay is an individual piece of work. Your essay should include your story and analysis of your creator, some brief remarks on what you learned from the comparison with the creator your team partner chose, and then a significant amount on your current state of thinking about creativity (as in the second-round presentation). The expectation is for a 10-page paper. We will not be looking for great length, but for organization and clarity in writing, accuracy and depth in use of concepts, and power and originality in insights offered.