Creativity Considered PCIX-SHU 101: Course Syllabus[1]

Professor Adam Brandenburger
Vice Chancellor Jeff Lehman

Overview

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: Can creativity be usefully studied or is it, in fact, something best left to life, luck, or other factors that may determine one's creative self? 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 — the arts, sciences, 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 mindsets, motives, identities, thinking, and work which we can find and put into practice.

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

Course Structure

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

---

[1] This syllabus has benefitted greatly from the commitment to learning made by the students who have taken earlier versions of the course. Discussions of concepts and creators in the classroom and beyond, and suggestions and ideas offered even after the course had ended, were extremely valuable and are gratefully acknowledged. Please note that some real-time adjustments may be made as the course progresses.

The course is organized as follows:

Class 1: Why Creativity?
Class 2: My Creativity I — Mindset, Motivation, and Identity
Class 3: My Creator I — Introduction
Class 4: My Creativity II — Combination, Subtraction, and Novelty
Class 5: The Neuroscience of Creativity
Class 6: Artificial Intelligence and Human Creativity I — Division of Labor
Class 7: Artificial Intelligence and Human Creativity II — Storytelling
Class 8: My Creator II — Characterization
Class 9: Creativity at Work I — Obstacles and Solutions
Class 10: My Creativity III — The Uncertainty of Knowledge
Class 11: Creativity at Work II — Individuals and Groups
Class 12: Presentations on Personal Lessons
Class 13: Presentations on Personal Lessons Cont'd
Class 14: Reflections

Learning Objectives and Outcomes

The course is designed to achieve several objectives and outcomes.

i. There is a common prevailing narrative about creativity — a narrative that emphasizes the quest for novelty, freeing of oneself from constraints, certainty of purpose, the role of the individual spirit, and so on. 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. The course will help students develop an expanded narrative about creativity — one that looks at the importance of paying close attention to what already exists as well as the new, of operating under constraints as well as free of them, of being fluid and open to exploration, of thinking and working in groups as well as individually, and more.

ii. We all carry around stories of our favorite (often, famous) creators. Often, these creators will be people who worked or work in our own areas of interest — a writer or artist, say, if we are in the humanities, or, perhaps, a scientist or mathematician, if these are more our areas of interest, or an entrepreneur, or a leader. The course will cover creators from all these domains. It will therefore help students broaden their knowledge and appreciation of creative work across domains.

iii. The course is an exploration of creativity out there in the world — as we study creators and writings about creativity. The course is also designed to help students gain a deeper understanding of their existing and evolving creative selves and, importantly, to help everyone gain greater confidence in their own creative capacities.

iv. Through readings, class discussions, project work, presentations, and a final essay, students will practice and further develop their general critical reading and thinking skills, and their effectiveness in listening, communicating, and writing.

General Information

1. Library and Research Services
The Library is available to support your research needs, and provides access to 14,000 print resources, 2,000 DVDs, and 1,000 databases (including over a million e-books, as well as

streaming audio & video and image databases). Librarians with expertise in fields such as Business, Economics, Humanities, Science (STEM), and Social Sciences are available in-person and online to help you with your research. Services include:

- one-to-one consultations to help you with your research projects
- reference Desk hours in the library for immediate help with finding & using resources
- workshops throughout the semester on research strategies, special databases, academic integrity, and using citation tools

Visit the Library in person or go to shanghai.nyu.edu/library to learn more.

2. Tutoring and Writing Support
The Academic Resource Center (ARC) provides tutoring and support to students looking to reach their highest academic potential. Students can schedule a meeting, or drop by, for any of the following:

- individual and small-group tutoring in over 30 STEM and Business & Economics courses
- individual writing consultations at any stage of the writing process
- academic coaching in areas such as time management, reading & note-taking strategies, exam preparation, and goal setting
- workshops on writing, academic skills, and technologies
- group study and conversation circles (students are also welcome to study on their own in the comfortable, supportive atmosphere of the ARC)

3. Moses Center for Student Accessibility
If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course (or as soon as your need arises) and provide a letter from the Moses Center for Student Accessibility (mosescsa@nyu.edu) verifying your registration and outlining the accommodations they recommend. For more information, visit the CSA website: https://www.nyu.edu/students/communities-and-groups/student-accessibility.html.

4. Extended Illness
A student with an injury or medical condition that requires ongoing accommodations (temporary or permanent) should contact the NYU Moses Center for Student Accessibility (CSA). If an accommodation is recommended by the Moses Center, then Academic Affairs may communicate on behalf of students to advocate for excused absences/extensions. Reasonable accommodations, considering the course objectives, student learning, and fair standards, are ultimately decided by the professor.

5. Attendance
Attendance in all classes is required. If you are unable to attend a class, please let us know in advance so we can talk about how you can catch up. If you are sick and need to miss more than a week of classes, you should speak to the Health & Wellness Office to obtain an excused absence.

6. Academic Integrity
Students should read and adhere to the NYU Shanghai policy on academic integrity as described in the current NYU Shanghai Academic Bulletin.

Name Pronunciation and Pronouns

NYU students now have the ability to include their pronouns and name pronunciation in Albert. We encourage you to share your name pronunciation and pronouns this way. Please utilize this link for additional information: Pronouns & Name Pronunciation.

Religious Observances and Other Absences

NYU's Calendar Policy on Religious Holidays states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. You must notify me in advance of religious holidays or observances that might coincide with exams, assignments, or class times to schedule mutually acceptable alternatives. Students may also contact religiousaccommodations@nyu.edu for assistance.

NYU is committed to ensuring an equitable educational experience for all students regardless of identity or circumstances and strives to recognize the obligations its students have outside of school. Please review all class dates at the start of the semester and review all course requirements to identify any foreseeable conflicts with exams, course assignments, projects, or other items required for participation and attendance. If you are aware of a potential conflict, please contact me as soon as possible to discuss any potential conflicts to determine whether/how they can be accommodated.

Outside-Class Supplemental Time Expectations

You should expect to spend approximately 5.5 hours per week on your reading, preparation, and assignments for this course. This amount may vary week to week, depending on the nature of the reading and whether an assignment is due. If you find that you are regularly spending significantly more time on coursework than expected, please speak with me and consider reaching out to the Academic Resource Center (ARC) for additional support.

Inclusive Learning Environment

This course strives to support and cultivate diversity of thought, perspectives, and experiences. The intent is to present materials and activities that will challenge your current perspectives with a goal of understanding how others might see situations differently. By participating in this course, it is the expectation that everyone commits to making this an inclusive learning environment for all.

Course Schedule

Class 1: Why Creativity?
In preparation for our first class, please read through the syllabus, which will give you the overall picture of how our course will unfold.

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

Please then prepare:

a. Scott Barry Kaufman and Carolyn Gregoire, *Wired to Create: Unraveling the Mysteries of the Creative Mind*, TarcherPerigee, 2016, Preface and Introduction ("Messy Minds"), pp.xi-xxxiv, 189-198.

b. Ken Robinson, "Do Schools Kill Creativity?" 2006, at https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity.

c. Ken Robinson and Lou Aronica, *The Element*, Penguin, 2009, pp.52-55, 67-76, and 262.

Note: To access book excerpts for our course, please go to the More Tools tab and then the Course Reserves sub-tab on our Brightspace site. This will take you to the NYU Libraries ARes platform, where you can find the excerpts.

In the reading from *Wired to Create*, the authors review and then reject a classic four-stage model of creativity (preparation, incubation, illumination, verification). Why do the authors reject this model, and what do they mean by emphasizing instead the "messiness" of creativity? What does the word "duality" mean? List all the places in the reading you can find where the authors talk about dualities exhibited by the creative mind.

In his TED talk, Ken Robinson talks about how schools often kill children's natural creativity. What does he say they do to cause this? In the reading from *The Element*, the authors say that there are some elements of creative work common to creators across fields. What are these common elements?

You do not need to submit anything before class.

Class #2: My Creativity I — Mindset, Motivation, and Identity

For your first assignment, please write a brief — one-page — memo on the question "Do you think an AI is able to hold two opposing ideas at the same time?"

This exercise is designed to pick up on our hypothesis from the first class that embracing dualities may be important in creative work. Please take this question in any direction you want. For example, you can write about your understanding of what a current AI can do, or about what you think a future AI should be able to do, or about some other aspect. Have fun with the memo — and be a little creative in your answer! We will come back to the topic of AI later in the course.

At the beginning of our second class, we will ask for some volunteers to share their memos.

Important clarification: We invite you to make use of LLMs in your written work for our course, following the guidelines we shared at the end of Class #1. But, absolutely, you are under no obligation at all to follow this route. Of course, you can write by yourself, if you wish.

Please email your memo, as a pdf, to me at adam.brandenburger@stern.nyu.edu, with your name in the filename — by the beginning of Class #2.

Please prepare:

a. Adam Grant, *Originals: How Non-Conformists Move the World*, Viking, 2017, Chapter 1 ("Creative Destruction"), pp.1-14, 259-262.

b. George Orwell, "Why I Write," Gangrel magazine, Summer 1946, at http://gutenberg.net.au/ebooks03/0300011h.html#part47.

c. Twyla Tharp, with Mark Reiter, *The Creative Habit: Learn It and Use It for Life*, Simon & Schuster, reprint edition, 2006, Chapter 3 ("Your Creative DNA"), pp.34-44.

d. "Twyla Moves," preview of 2021 documentary, at https://www.pbs.org/wnet/americanmasters/twyla-tharp-documentary/16724/.

In the excerpt from *Originals*, the author mentions two paths to success. What are they? He also discusses a number of attitudes and behaviors which he argues work against our ability to be an "original." List the attitudes and behaviors of this kind which are mentioned.

Four "great motives" for writing are described in the essay "Why I Write." What does the essay say about the relative importance of these various motives and about the relationships among them?

The reading from *The Creative Habit* talks about the "creative DNA" which people possess. List the three dimensions of this DNA as discussed by the author. In class, we will have an exercise that combines the preceding reading (by George Orwell) and this one (by Twyla Tharp).

You do not need to submit anything before class — apart from your one-page memo on the question "Do you think an AI is able to hold two opposing ideas at the same time?"

Class #3: My Creator I — Introduction

Please finalize your choice of creator to study during the semester. Refer back to Slides #11-#13 from our slide deck for Class #2, for guidance. In particular, please run your candidate choice of creator past me (Adam) before committing. You can send me a short email on this.

Then, please prepare a presentation, to be shared in Class #3, that introduces your creator, goes into the reasons behind your choice of creator, and indicates what you hope to learn from your project.

Also, write an accompanying memo, to be submitted before Class #3, on the same topic. (In my view, it is a very good practice, when preparing any kind of communication, to create slides and prose in parallel. Slides expose the overall architecture of what one is trying to say, while prose indicates whether there is depth to what one is saying.)

Please create a maximum of 5 slides, title slide included. Your slides should be lightly populated. Put your name in the filename and also on the title slide. You will have a strict limit of 5 minutes to present. Please email your slides to me, as a pdf, prior to Class #3. (Please do not submit them via Brightspace.) These instructions are important. We need to ensure that everyone gets a chance to present. Also, I will preload your pdfs so that no time is lost during class in teeing up anyone's presentation. So, 5 sides, 5 minutes, pdf's to me!

On the memo, this should follow the same line of argument as your slides. (As mentioned above, testing an argument across the two formats can really help in arriving at an effective piece of communication.) Your memo should be a maximum of 2 pages. (I leave formatting

choices to your discretion.) Include your name in the filename and also on the first page of the memo. Please email your memo to me, as a pdf, prior to Class #3. (Do not submit via Brightspace.)

It will be very exciting to see the range of creators that you have chosen and to start learning about them in this class.

Class #4: My Creativity II — Combination, Subtraction, and Novelty

Please prepare:

a. Maria Popova, "What Is Creativity? Cultural Icons on What Ideation is and How It Works," *The Marginalian*, September 2013, at https://www.themarginalian.org/2013/09/06/what-is-creativity/. (In this reading, concentrate on the parts that talk about combination.)

b. Adam Alter, *Anatomy of a Breakthrough: How to Get Unstuck When It Matters Most*, Simon & Schuster, 2023, Chapter 8 ("Recombination and Pivoting"), pp. 137-145, 266-267.

c. Austin Kleon, *Steal Like an Artist: 10 Things Nobody Told You About Being Creative*, Workman, 2012, Chapter 1 ("Steal Like an Artist"), pp.5-9, 11, 13–15, and 17-23, and Chapter 10 ("Creativity is Subtraction"), pp.137-140.

d. Margaret Boden, "Creativity as a Neuroscientific Mystery," in Oshin Vartanian, Adam S. Bristol, and James C. Kaufman (eds.), *Neuroscience of Creativity*, MIT Press, paperback edition, 2016, Chapter 1, pp.5-7, 16.

The reading "What Is Creativity? Cultural Icons on What Ideation is and How It Works" mentions many creators from many fields who put combining as central to creative work. Identify different modes of combinatory thought suggested there.

In the reading from *Anatomy of a Breakthrough*, the author talks about recombination and randomness. What do you think is the distinction between the terms "combination" and "recombination"? What role do you think randomness can play in strategy from combination?

Go through the reading from *Steal Like an Artist* and list the techniques the author suggests for arriving at the "mashups" and "remixes" which he considers the essence of new ideas.

The excerpt from "Creativity as a Neuroscientific Mystery" describes three different kinds of creativity. Put the three definitions in your own words.

You do not need to submit anything before class.

Class #5: The Neuroscience of Creativity

Please prepare:

a. Scott Barry Kaufman, "The Real Neuroscience of Creativity," *HuffPost*, updated December 2017, at https://www.huffpost.com/entry/the-real-neuroscience-of_b_3870582.

b. Roger Beaty, Yoed Kenett, Alexander Christensen, Monica Rosenberg, Mathias Benedek, Qunlin Chen, Andreas Fink, Jiang Qiu, Thomas Kwapil, Michael Kane, and Paul Silvia, "Robust

Prediction of Individual Creative Ability from Brain Functional Connectivity," *Proceedings of the National Academy of Sciences*, 2018, at https://doi.org/10.1073/pnas.1713532115; summarized at https://www.sciencedaily.com/releases/2018/01/180117163954.htm.

c. Manoush Zomorodi, "What Boredom Does to You: The Science of the Wandering Mind," *Nautilus*, October 26, 2017, at http://nautil.us/issue/53/monsters/what-boredom-does-to-you.

d. Manoush Zomorodi, "How Boredom Can Lead to Your Most Brilliant Ideas," 2017, at https://www.ted.com/talks/manoush_zomorodi_how_boredom_can_lead_to_your_most_brilliant_ideas.

e. Maria Popova, "Inclining the Mind Toward "Sudden Illumination: French Polymath Henri Poincaré on How Creativity Works," *The Marginalian*, August 2013, at https://www.themarginalian.org/2013/08/15/henri-poincare-on-how-creativity-works/.

f. Evangelia Chrysikou et al., "Differences in Brain Activity Patterns During Creative Idea Generation Between Eminent and Non-Eminent Thinkers," *NeuroImage*, 220, 2020, at https://doi.org/10.1016/j.neuroimage.2020.117011.

The article "The Real Neuroscience of Creativity" mentions three brain networks as being important to neural processes underlying creativity. What does the article say about how these networks interact? How does this network view differ from older views of how the brain functions during creative activity?

Read also the *Science Daily* summary of the article "Robust Prediction of Individual Creative Ability from Brain Functional Connectivity." (Of course, you can also read the complete article, if you want to go further.) This article talks about "synchrony" across the three networks.

Read the article "What Boredom Does to You: The Science of the Wandering Mind," which talks in more detail about the Default Mode Network (DMN). Also watch the associated video. What does the author say about the various roles which this network — and, more generally, mindwandering — may play in our lives?

In "Inclining the Mind Toward "Sudden Illumination: French Polymath Henri Poincaré on How Creativity Works," Maria Popova writes about the interplay of the conscious and unconscious mind in creative work. What kind of interplay does she suggest is most conducive to successful results?

The final article "Differences in Brain Activity Patterns …" reports on activation in two of the three networks identified in the first article — and finds support for a neural efficiency hypothesis that distinguishes between "eminent" and "non-eminent" creators engaged in an idea-generation task.

This week, you should also begin work on your second presentation and memo on your chosen creator. The topic this time will be your evolving understanding of your creator as arrived at using our course concepts. Your presentation and memo will be due at the start of Class #8, but your memo will be a more comprehensive price of work this time (approx. five pages), so we recommend you get started now. A good first step will be to assemble your own list of creativity concepts we have covered thus far and to add to your list over the course of the next few classes, so you will be ready to bring the concepts to bear in preparing your presentation and memo.

Class #6: Artificial Intelligence and Human Creativity I — Division of Labor

Please prepare:

a. "AlphaGo - The Movie," 2017, at https://www.youtube.com/watch?v=WXuK6gekU1Y (length 1.5 hours).

b. Francisco Tigre Moura, "Artificial Intelligence, Creativity, and Intentionality: The Need for a Paradigm Shift," *Journal of Creative Behavior*, April 2023, at https://doi.org/10.1002/jocb.585.

c. Min Tang, Sebastian Hofreiter, Christian Werner, Aleksandra Zielińska, and Maciej Karwowski, ""Who" Is the Best Creative Thinking Partner? An Experimental Investigation of Human-Human, Human-Internet, and Human-AI Co-Creation," *Journal of Creative Behavior*, September 2025.

d. Foster Provost with Adam Brandenburger, "A Brief Explanation of Large Language Models," September 2023, at http://adambrandenburger.com/aux/material/provost-brandenburger-2023.pdf.

e. Pati Ruiz and Judi Fusco, "Glossary of Artificial Intelligence Terms for Educators," Center for Integrative Research in Computing and Learning Science, at https://circls.org/educatorcircls/ai-glossary.

These materials are chosen to help you prepare for an exercise we will undertake in this class, when you will propose candidates for a possible division of labor between AI and humans in the area of creativity.

The documentary "AlphaGo - The Movie" portrays events around the famous 2016 match between top Go player Lee Sedol and AlphaGo, a program developed by Google DeepMind. When watching, be sure to pay particular attention to Move 37 by AlphaGo in Game 2 and to how the various parties react to and interpret it.

Read the articles "Artificial Intelligence, Creativity, and Intentionality: The Need for a Paradigm Shift" and ""Who" Is the Best Creative Thinking Partner? An Experimental Investigation of Human-Human, Human-Internet, and Human-AI Co-Creation." (For the second article, you can read the Abstract, then read as far as the section titled Method, and then go to the Conclusion.) These two articles argue for different consequences of human-AI interaction. Make a list of the consequences each article indicates and come up with your own summary.

Read the Foster and Brandenburger note if you want to dig a bit into the components that make up an large language model. We will spend some time on this note in class.

The Ruiz and Fusco article is a very helpful glossary of terms in artificial intelligence. It goes well beyond what we will discuss in this class and is for your general reference.

Class #7: Artificial Intelligence and Human Creativity II — Storytelling

Please prepare:

a. Reid Hoffman with GPT-4, *Impromptu: Amplifying Our Humanity Through AI*, 2023, at https://www.impromptubook.com/wp-content/uploads/2023/03/impromptu-rh.pdf, Chapter 2 ("Creativity"), pp.49-68.

b. "Storytelling: Your Unique Perspective," at https://www.khanacademy.org/humanities/hass-storytelling/storytelling-pixar-in-a-box/ah-piab-we-are-all-storytellers/v/video1-final.

c. Anil Doshi and Oliver Hauser, "Generative AI Enhances Individual Creativity But Reduces the Collective Diversity of Novel Content," *Science Advances*, 10, 2024, at https://doi.org/10.1126/sciadv.adn5290.

In reading the chapter from the book *Impromptu*, focus on the material up to the new section starting on p.59. In this chapter, the author asks GPT-4 to summarize the threats and opportunities to musicians and other artists from AI. What are GPT-4's main responses?

The video from Khan Academy features story artists at Pixar Animation Studios talking about storytelling. (Pixar is a leading producer of computer-animated films, such as the *Toy Story* and *The Incredibles* franchises.) What do you think is their most important message to other storytellers?

The article "Generative AI Enhances …" reports on a study comparing outputs of AI-assisted and non AI-assisted prose tasks. We will refer to these findings when we de-brief our in-class exercise.

In class, we will do some real-time exercises with ChatGPT (or another LLM-based chatbot of your choice). So, please come to class with ready access to at least one such assistant.

Separately, please be sure to be working at this point on preparing your materials for Class #8, titled "My Creator II — Characterization." For this class, you are asked to prepare a five-minute presentation (a maximum of 5 slides, title slide included) on how our course concepts to date have helped you understand your creator's creative processes and products. You are also asked to submit, prior to Class #8, a five-page mini-essay making the same points about your creator, but in greater detail than in your presentation. Remember that you can refer to Slide 9 of last week's deck for a comprehensive list of course concepts thus far. Final preparation details will be posted shortly, but, again, please be sure to be working on these items now.

Class #8: My Creator II — Characterization

For Class #8, please prepare a presentation identifying some course concepts to date that have helped you understand the creative products and/or processes of your chosen creator. We suggest you start with your creator and identify a couple of major creative products of theirs and/or some important aspects of their creative processes. Then, go to Slide 9 of our deck from Class #6 and pick some concepts* there that you think are the best fit.

*In our Class #6, Professor Lehman also referred to these as "contributors" to creativity.

There are 18 entries on this slide and some entries include more than one concept. You definitely do not want to use all the concepts listed there! That would be forcing our course on reality and very likely distorting reality. You should use your good judgment in selecting a small number of concepts — three or four or five — that seem most important to your analysis.

Also, our list is not exhaustive. The big concepts we have covered are all there, but there are surely some nuances in our course materials and discussions that have been missed. If you think of an idea from our course that is not on the list, totally fine.

Your presentation should be a maximum of 5 slides (title slide included) and the slides should be lightly populated. Put your name in the filename and also on the title slide. You will have a strict limit of 5 minutes to present. Please email your slides to adam.brandenburger@stern.nyu.edu, as a pdf, prior to Class #8. (Please do not submit them via Brightspace.) These instructions are important. We need to ensure that everyone gets a chance to present. We were very disciplined about timing when you first presented in Class #3. We need to be the same in Class #8.

You are also asked to submit, prior to Class #8, a 5-page mini-essay making the same points about your creator, but in greater detail than in your presentation. (I leave formatting choices to your discretion.) Put your name in the filename and also on the first page of the essay. Please email your essay to adam.brandenburger@stern.nyu.edu, as a pdf, prior to Class #8. (Please do not submit via Brightspace.) Also, remember my advice from Class #3 about parallel-processing prose and slides. Prose is proof of substance but slides are proof of logic. Work on them together and make sure they tell the same story. They should.

Reminder: Each time you use an LLM as co-pilot (first officer!) in writing for our course, please add a reflection paragraph at the end (non-AI generated) on some lessons you learned and any strategies or heuristics you developed during the session.

It will be very exciting to see the analyses of your creators in class.

Class #9: Creativity at Work I — Obstacles and Solutions

Please prepare:

a. Adam Brandenburger, "Strategy Needs Creativity," *Harvard Business Review*, March-April 2019.

b. Julia Cameron, *The Artist's Way: A Spiritual Path to Higher Creativity*, TarcherPerigee, 25th Anniversary edition, 2016, pp.9-24 ("The Basic Tools").

c. "One to One: Sarah Lewis," with Sheryl McCarthy, CUNY TV, at https://www.youtube.com/watch?v=zTIFT3tMADc.

d. Aneesh Rai, Marissa Sharif, Edward Chang, Katy Milkman, and Angela Duckworth, "The Secret to Accomplishing Big Goals Lies in Breaking Them into Flexible, Bite-Size Chunks," *Scientific American*, May 2024, at https://www.scientificamerican.com/article/the-secret-to-accomplishing-big-goals-lies-in-breaking-them-into-flexible-bite-size-chunks/.

e. "4C's Strategy Generator" and "4C's Strategy Evaluator," by Adam Brandenburger and Shuyan Wang, 04/05/25.

The first two readings and the video all speak to the issues of external and/or internal challenges and constraints that arise in creative work — although they do so in quite different ways. These materials also offer some — again different — prescriptions when facing challenges. Identify these varying prescriptions and think about how each might usefully play a role in how you approach your own creative endeavors.

The reading from *Scientific American* examines the potential benefits of reframing a big task as a series of smaller ones. It complements an in-class exercise we will explore.

There are two custom GPT's to accompany the first reading. Here are the links:

https://chat.openai.com/g/g-8RXqNUAN7-4cs-strategy-generator

https://chat.openai.com/g/g-VO0SxoUDE-4c-s-strategy-evaluator

See e. above for the user manuals for these GPT's. These tools are built to augment one's creative thinking in the area of business. Feel free to explore them before or after class, if you wish. (This is not part of the formal assignment for Class #9.)

Class 10: My Creativity III — The Uncertainty of Knowledge

Please prepare:

a. "Richard Feynman — The Uncertainty of Knowledge," at https://www.youtube.com/watch?v=QkhBcLk_8f0.

b. Stuart Firestein, *Ignorance: How It Drives Science*, Oxford University Press, 2012, Introduction and Chapter 1 ("A Short View of Ignorance"), pp.1-18, 177-179.

c. Dale Peterson,"Jane Goodall: She Dreamed of Tarzan," and Charlotte Decroes Jacobs, "Jonas Salk: American Hero, Scientific Outcast," in Oren Harman and Michael Dietrich (eds.), *Dreamers, Visionaries, and Revolutionaries in the Life Sciences*, The University of Chicago Press, 2018, Chapters 13 and 5, pp.210-226 and pp.83-95.

d. "Jane," a film by Brett Morgen, 2017, trailer at https://films.nationalgeographic.com/jane-the-movie#watch-the-trailer.

e. "Jonas Salk's Legacy," Salk Institute, 2014, at https://www.youtube.com/watch?v=swPdkPmIEpk.

f. Kyna Leski, *The Storm of Creativity*, MIT Press, 2020, Chapter 2 ("Unlearning"), pp.11-18, 167.

g. Beau Lotto, "The Neuroscience of Creativity, Perception, and Confirmation Bias," 2017, at https://www.youtube.com/watch?v=vR2P5vW-nVc.

In the video of physicist Richard Feynman, what myths about science does he counter?

In the excerpt from *Ignorance*, the author offers a positive view of ignorance and its role in science. What is this view?

Go through the reading from *Dreamers, Visionaries, and Revolutionaries in the Life Sciences* and document some characteristics of the two scientists, primatologist Jane Goodall and virologist Jonas Salk, described there. Watch the short videos on Goodall and Salk.

In the reading from *The Storm of Creativity*, the author talks about "unlearning." What is unlearning and what is her argument for its importance to creativity?

Watch the video by neuroscientist Beau Lotto. Relate what he says about how the brain handles uncertainty to what the other readings this week say about the unknown.

Looking ahead to Classes #12 and #13, these will be devoted to longer presentations by each of you, sharing what you have learned during the course about creativity in general and your own creative self in particular. You are asked to cover where the class materials, class discussions, class exercises, and your study of a creator have brought you in your thinking. You should talk in terms of "before" and "after," i.e., compare where your thinking was back before the course began with where it is now.

Also, to be handed in by the start of our final class (Class #14), will be an individual essay elaborating on your Class #12 or #13 presentation. The expectation is that this essay will be approximately 10 pages in length.

Half the class will present in Class #12 and the other half in Class #13. Closer to the date, we will randomly assign you to one or other session and let you know. (If you want to swap, email Prof. Brandenburger and, if there is someone who wants the opposite swap, he will facilitate.)

Logistical details will come in due course, but please do start on this work now.

Class #11: Creativity at Work II — Individuals and Groups

Please prepare:

a. Isaac Asimov, "On Creativity," 1959, at https://www.technologyreview.com/s/531911/isaac-asimov-asks-how-do-people-get-new-ideas/.

b. Keith Sawyer, *Group Genius: The Creative Power of Collaboration, Basic Books*, rev. edition, 2017, Chapter 4 ("From Groupthink to Group Genius"), pp.69-84, 293-298.

c. Misiek Piskorski and Amit Joshi, "What Roles Could Generative AI Play on Your Team?" *Harvard Business Review*, June 2023.

d. Yiling Lin, Carl Benedikt Frey, and Lingfei Wu, "Remote Collaboration Fuses Fewer Breakthrough Ideas," *Nature*, 623, 2023, at https://doi.org/10.1038/s41586-023-06767-1. (Please access this article through the NYU network.)

What are the different roles proposed in the essay "On Creativity," for individual thinking and group discussion, respectively, when seeking cross-connections between ideas?

What is the argument advanced in the reading from *Group Genius* for why groups may encounter problems in performing creative work?

Skim the article "What Roles Could Generative AI Play on Your Team?" — paying most attention to the subsection "GroupGPT." In our class exercise, you will have an opportunity to offer some hypotheses on how Generative AI might act as co-pilot to a group engaged in creative work.

The final article ""Remote Collaboration Fuses Fewer Breakthrough Ideas" finds that in-person and remote groups are differentially effective at different stages of the creative process in the areas of scientific research and invention. We will touch on this topic in class.

Class #12: Presentations on Personal Lessons

In this class or next class, you will give a presentation sharing what you have learned during the course about creativity in general and your own creative self in particular. Cover where the class materials, class discussions, class exercises, and your study of a creator have brought you in your thinking. Talk in terms of "before" and "after," i.e., compare where your thinking was back before the course began with where it is now.

Your presentation should be a maximum of 10 slides (title slide included) and the slides should be lightly populated. Put your name in the filename and also on the title slide. You will have a strict limit of 10 minutes to present. Please email your slides to adam.brandenburger@stern.nyu.edu, as a pdf, prior to Class #12 or #13. (Please do not submit them via Brightspace.) These instructions are important. We need to ensure that everyone gets a chance to present. We were very disciplined about timing when you presented in Classes #3 and #8. We need to be the same in Classes #12 and #13.

Also, to be handed in by the start of our final class (Class #14), is an individual essay elaborating on your Class #12 or #13 presentation. That is, this essay, like your presentation, will draw on the materials, class discussions, class exercises, and your study of a creator to reflect on what you have learned during the course about creativity in general and your own creative self in particular. The expectation is that your essay will be approximately 10 pages in length. (I leave formatting choices to your discretion.) Put your name in the filename and also on the first page of the essay. Please email your essay to adam.brandenburger@stern.nyu.edu, as a pdf, prior to Class #14. (Please do not submit via Brightspace.)

Please use your presentation as an opportunity to "test-drive" your essay as you are working on it.

Reminder: Each time you use an LLM as co-pilot (first officer!) in writing for our course, please add a reflection paragraph at the end (non-AI generated) on some lessons you learned and any strategies or heuristics you developed during the session.

It will be very exciting to see your reflections in this and the next class.

Class #13: Presentations on Personal Lessons Contd.

We will continue with presentations on personal lessons.

Class #14: Reflections

We will work together to reflect back on the course and to come up with some ideas for continuing the journey into creativity after the course ends.

Grading

Class participation will comprise 20 percent of your overall grade, class presentations 40 percent, and written deliverables 40 percent.

Grading of the presentations and essays will be according to the criteria: (i) organization and clarity of the oral or written material; (ii) accuracy and depth in use of concepts from the

course; and (iii) power and originality of insights provided. Grading of class participation will be according to: (i) level of pre-class preparation indicated by comments made in class; (ii) engagement in discussion in class of assigned materials; and (iii) engagement in feedback in class on fellow students' work.

The grading scale for the course 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 and good-but-not-always-excellent 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