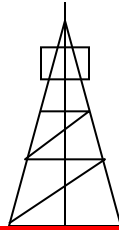




Introduction to Creativity & Innovation



Entrepreneurship

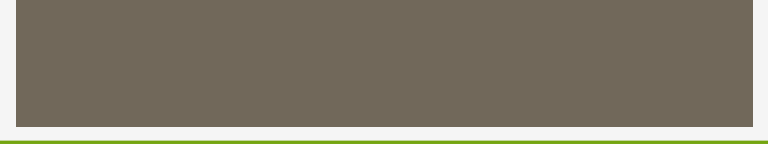
Innovation

Invention

Creativity



? **The Difference Between Invention and Innovation.mp4**



What is
creativity?

This is Creativity...

○ The Ability...

- to generate new ideas, new solutions and new ways of looking at problems and opportunities

○ The Attitude that...

- accepts change and welcomes new things,
- is flexible & willing to experiment with new possibilities,
- is always seeking to improve.

○ The Process...

- Of continually improving ideas and solutions, by making alterations and refinements



Creative methods

- Evolution,
- Revolution,
- Synthesis,
- Reapplication &
- Changing direction



Everything is a Remix.mp4

Are You A Creative Type?

- The Pareto Theory

- **CREATIVES** are preoccupied with possibilities of new combinations; are not content leaving well enough, and always wondering how to change things for the better ...

- **FOLLOWERS** are always ready adapt and adopt promising new combinations advanced by the creatives; always on a lookout for promising technologies ...

- **RENTIERS** are routine, steady-going, unimaginative, conserving people, whom the creatives manipulates

Two Competing Views of Social Influence

- People follow the group:
 - Social norms
 - Group polarization
 - Conformity (Majority influence)
- People remain independent:
 - Minority influence
 - Dissent

Conformity is ...

- an opportunity to:
 - socialize people to “fit” the organizations values.
 - “influence” people to continually follow and hold those values through the manipulation of norms and majority pressure.
- a serious problem that contributes to groupthink which leads to bad decisions.
- Creativity is a serious threat to conformity

How creative are you?

Here's a simple test that will shed some light on how creative you are.

I'm going to ask you a question. You will have two minutes to write down **AS MANY DIFFERENT** answers as you can.

READY?

How creative are you?

Think of all the different things that would happen if the sun did not rise for a month. List as many as you can in the next three minutes.

How do we measure Creativity?

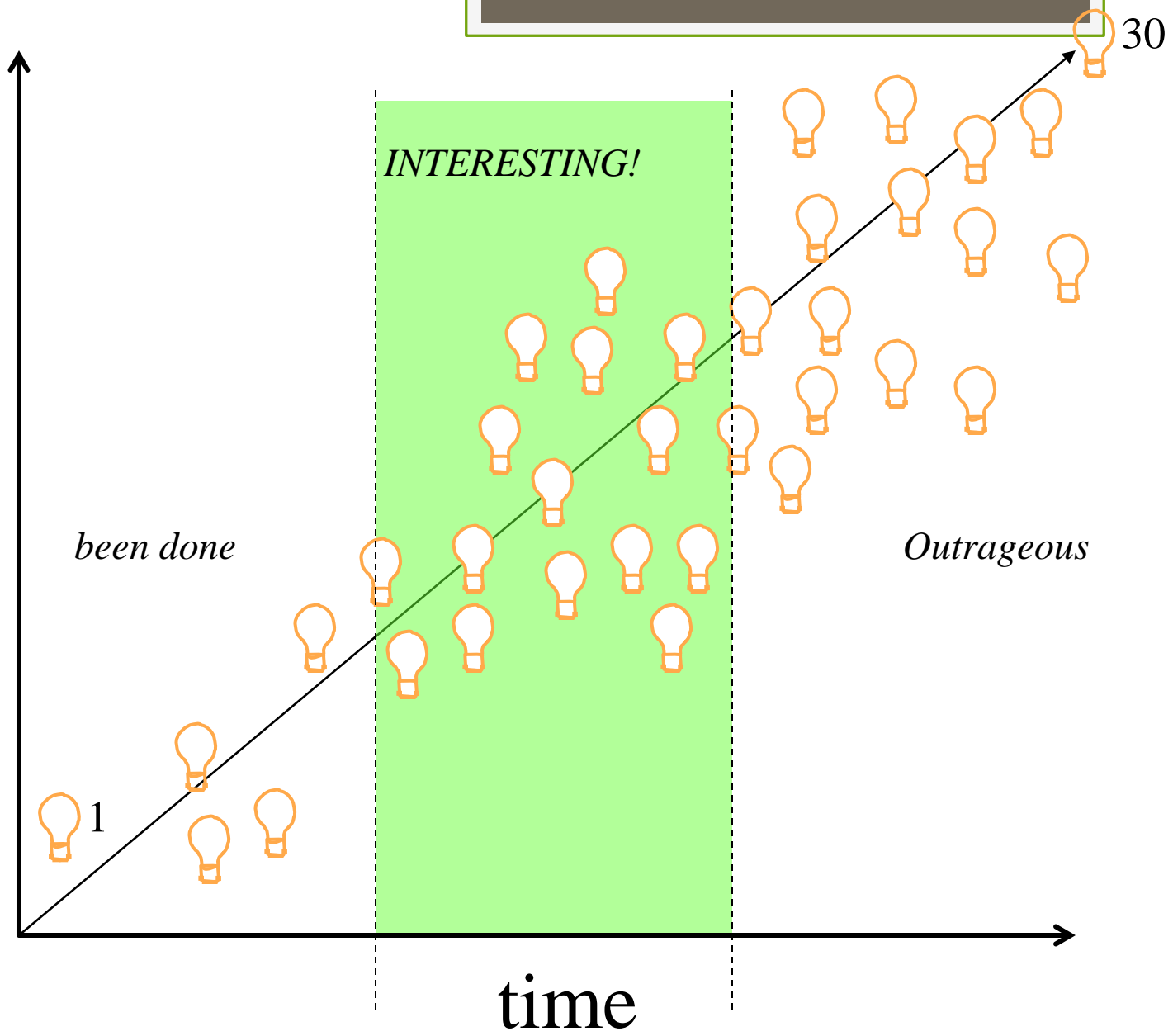
- First, count how many responses you wrote down for each question. Simply count each one -- it doesn't matter whether they are good or bad. **FLUENCY.**
- Second, divide up your responses into categories. Find out how many different types of responses you had. **FLEXIBILITY.**
- Third, let's look for the most outrageous responses. The degree to which responses are unique is called **ORIGINALITY.**
- Finally, consider the level of detail - How much information is given for each answer? This is called **ELABORATION.**



How do we measure Creativity?

How did you perform?

craziness



INTERESTING!

been done

Outrageous

time

Most of Us Use Only 3% of Our Brain....

- This leaves 97% capacity to expand our thoughts, ideas, information, and knowledge

People who are creative....

- Are more likely to advance at work.
- Are more persistent in difficult situations.
- Achieve more and are better rewarded.
- Are more successful in developing a business.
- Tend to be happier.

Theories of Creativity

Theories of Creativity

GRACE

- Creativity is something of a mystery, causing images of wonderful insights, imaginative efforts, illumination and intuitions that come from nowhere.
- It is the work of magic or Devine intervention.
- Related to the idea of genius since creative artists, musicians, etc. seem to be endowed with superhuman potential.
- Creativity in this sense is seen as a divine gift.

ACCIDENT

- This is the opposite of it being a divine gift.
- It rises by chance.
- Holders of this view offer various types of accidental discoveries such as those of immunisation arising from an interruption in work, radioactivity from the wrong hypothesis, and the smallpox vaccination from observation.

The Psychoanalytical Theory

- People become creative in reaction to difficult circumstances or repressed emotions.
- emotions related to repressed memories of traumatic episodes or events are released through creative outlets.
- People are able to demonstrate creativity when they link the personal unconscious with the collective conscious.

The Mental Illness Theory

- Some type of mental illness is necessary for people to be creative, even if that illness is exceptionally mild.
- Mental disorders most frequently associated with increased creativity are bipolar and manic-depressive syndromes.
- Sufferers undergo extreme mood swings that perhaps contribute to enhanced creative expression.
- **Eysenck's Theory of Psychoticism**
- **Addiction theory**

The Humanistic Theory of Creativity

- Based on Maslow's Hierarchy of Needs, which maintains that humans have six basic needs that must be met in order for them to thrive and reach maximum potential.
- Lower needs, must be met in order to progress to the next highest level,
- Upon reaching self-actualization, people are free enough and comfortable enough to express themselves creatively.

ASSOCIATION

- The most popular theory
- Suggests applying procedures from one area to another
- Underlies the justification for many divergent thinking techniques such as lateral thinking and brainstorming

COGNITIVE

- Creativity is a normal human activity
- It uses cognitive processes like recognition, reasoning and understanding

PERSONALITY

- Creativity is a state of mind which can be learned
- Some people seem to have a facility for it while others do not, but they can improve with practice
- Mental barriers to creativity have to be removed to allow innate spontaneity to flourish
- Creative acts are not isolated acts of perception, they require an emotional disposition too, for any new idea replaces and in effect destroys the previous order
- It takes courage and persistence to brave the resistance that any change seems to engender

Confirmation bias

- Overestimating the strength of evidence that supports our own conceptions
- Using confirming evidence and ignoring disconfirming evidence
- Rather than being more “critical” thinkers, many people are characterized by stubbornness and rigidity
- By reducing confirmation bias, we become less judgemental and more creative

Cognitive flexibility

Extended practice may produce rigidity and inflexibility and lead to mindless routines. Novices are, however, more rigid and inflexible in complex problem solving situations than experts. Some experts are able to quickly adapt to changes in conditions

- Knowledge-based flexibility (extremely rich knowledge of exceptional cases)
- Flexibility based on deeper thinking (early identification of anomalous cases)

Bounded Rationality (Simon, 1969)

- Human beings have only limited cognitive resources.
- Meaning that actual problem situations are too complex for us to handle.
- Therefore, we are forced to work with simplified version of real-world problems

Reductive bias (Feltovich, Spiro, & Coulson, 1997)

Models and rules learned early with simple situations no longer apply in more complex situations, but still cause the observer to reduce the problems to more simple than they actually are.

World One	World Two
Discontinuous	Continuous
Static	Dynamic
Sequential	Simultaneous
Mechanistic	Organic
Separable	Interactive
Universal	Contextual
Homogeneous	Heterogeneous
Regular	Irregular
Linear	Nonlinear
Surface	Deep
Single	Multiple

Co-Creation

- One person's half-baked suggestion resonates in the mind of another and suddenly takes a definite shape.
- An insightful critique of one way of thinking about a problem leads to another, better understanding.
- An incomprehensible simulation result suddenly makes sense as two people try to understand it together.

Distributed cognition

- A process in which cognitive resources are shared socially in order to extend individual cognitive resources or to accomplish something that an individual person could not achieve alone.
- Individual and distributed cognitions are in interaction, co-evolve, and reciprocally affect each other.
- Exceptional competencies do not presuppose an exceptional mind but sustained interaction with cultural knowledge resources

Flow experience

- A peak experience in which a person concentrates on some activity so deeply that he or she temporarily forgets all worries or uncertainties related to his or her competency or life situation.
- Flow represents enjoyment of activity that leads to human development and increased complexity of his or her activity.
- In order to experience flow, people need to work at the edge of their competence and surpass themselves.

Social dimensions of creativity

- Even if creative insight would take place within human mind, it is preceded with a long process of social interaction
- The conceptual spaces through which exploration and restructuring take place come from the culture
- The tools and goals involved in creative activity do not come from human mind
- Creation and discovery take place between people rather than only within people