

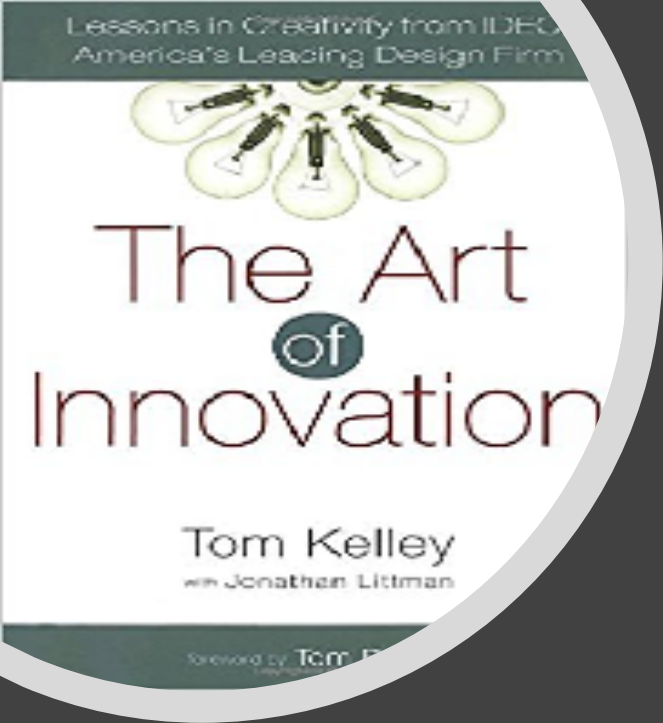


Innovation: The Other Discipline

Richard Reichard
Muskingum University
August 29, 2018



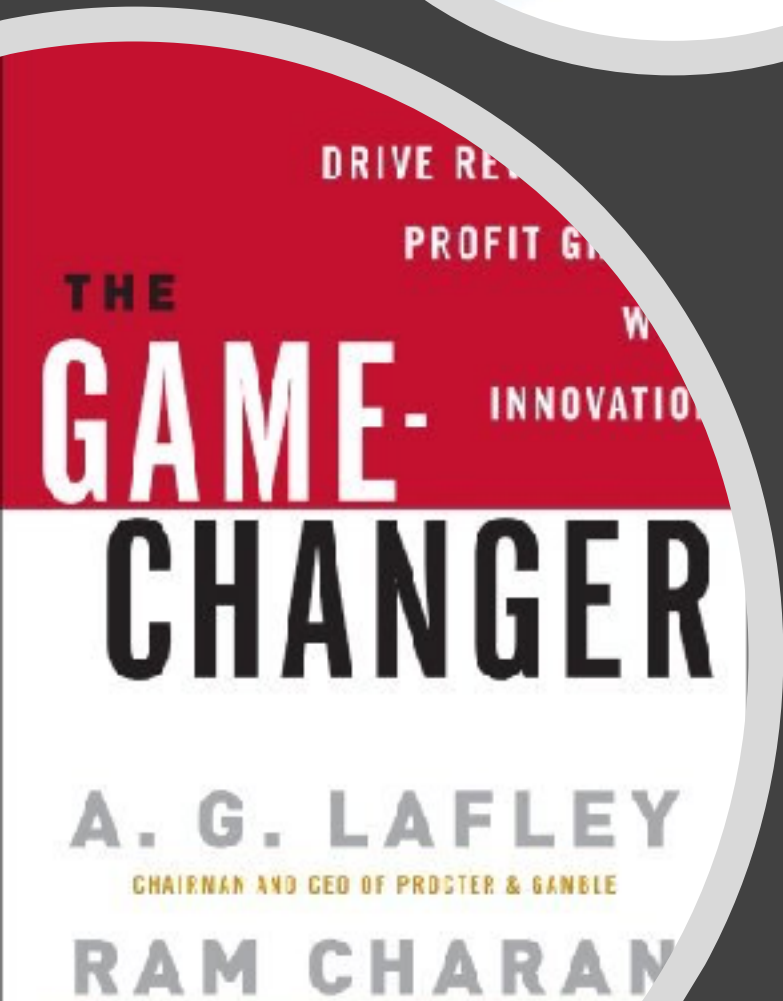
The Discipline of Innovation by Peter Drucker appeared in the June 1985 Harvard Business Review



“The biggest single trend ... innovation as the centerpiece of corporate strategies and initiatives ”

-Tom Kelley





“Innovation is the central job of every leader”

-A. G. Lafley



Innovation drives business success

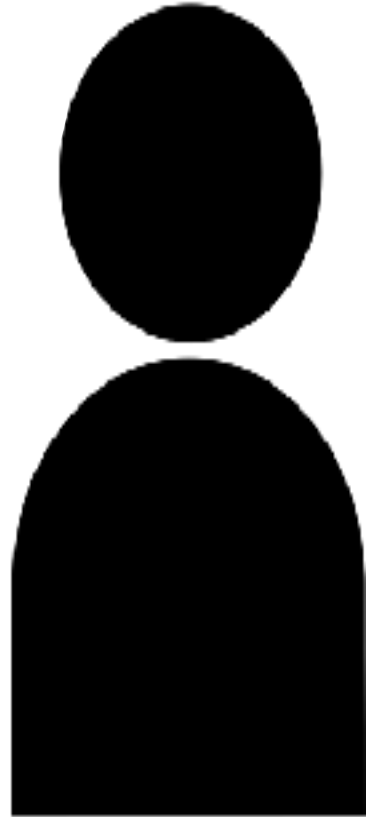
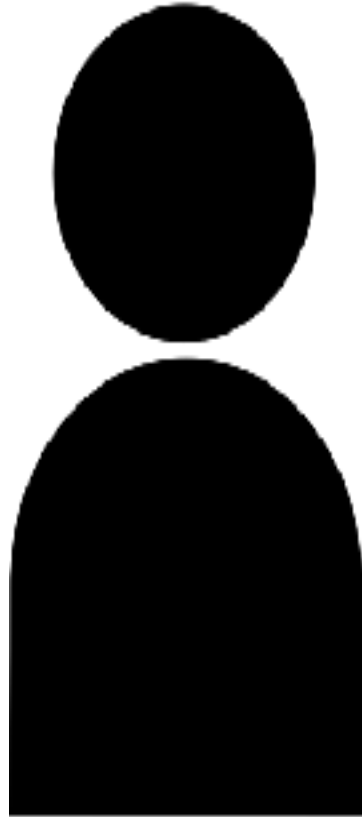
- **74% of companies surveyed have established formal process to foster innovation (up 12% since 2012)**
- **63% of companies surveyed have established chief innovation officers (up 9% since 2009)**
- **84% of executives surveyed believed that their business was either “extremely dependent” or “very dependent” on innovation for future success. (up 17% since 2012)**

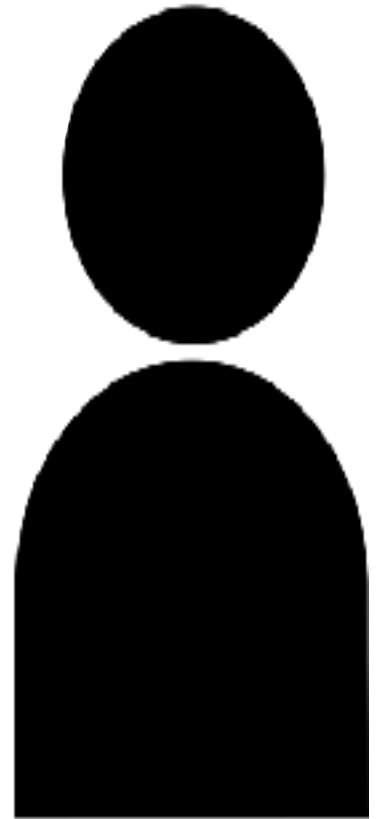
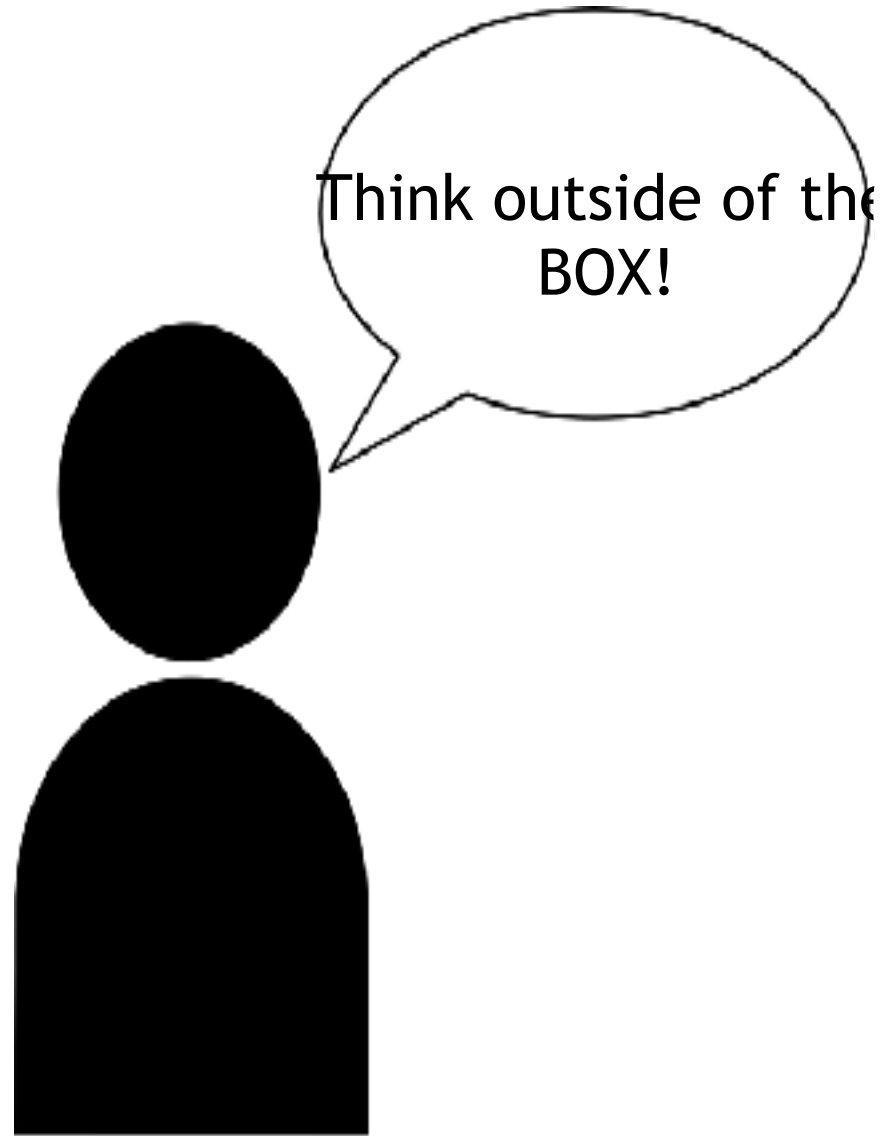


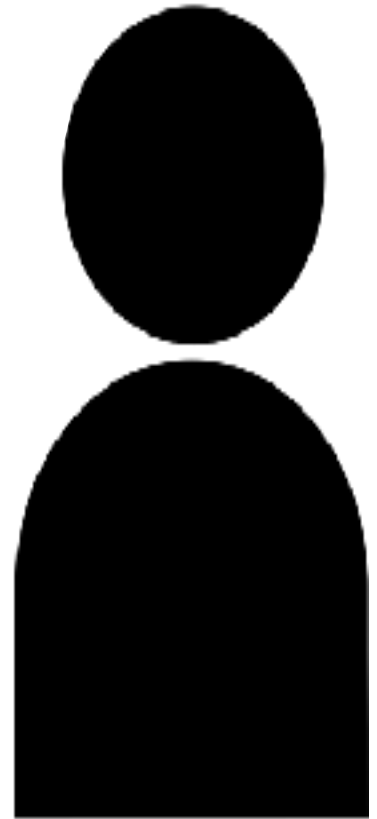
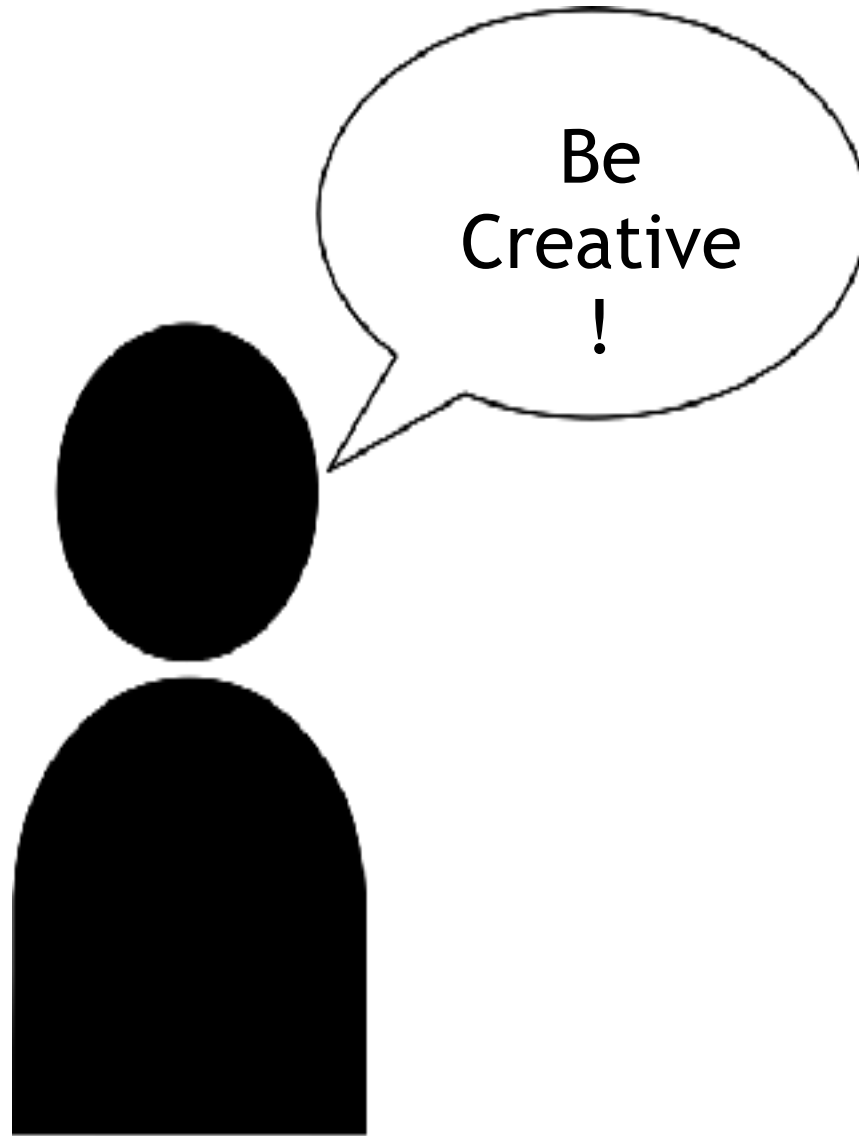
Change

The diagram features two dark gray circles, one on the left labeled 'Change' and one on the right labeled 'Innovation'. They are connected by two curved arrows forming a clockwise cycle. The background is a vibrant, abstract pattern of overlapping, blurred lines in various colors including blue, orange, yellow, green, and purple, creating a sense of dynamic movement and energy.

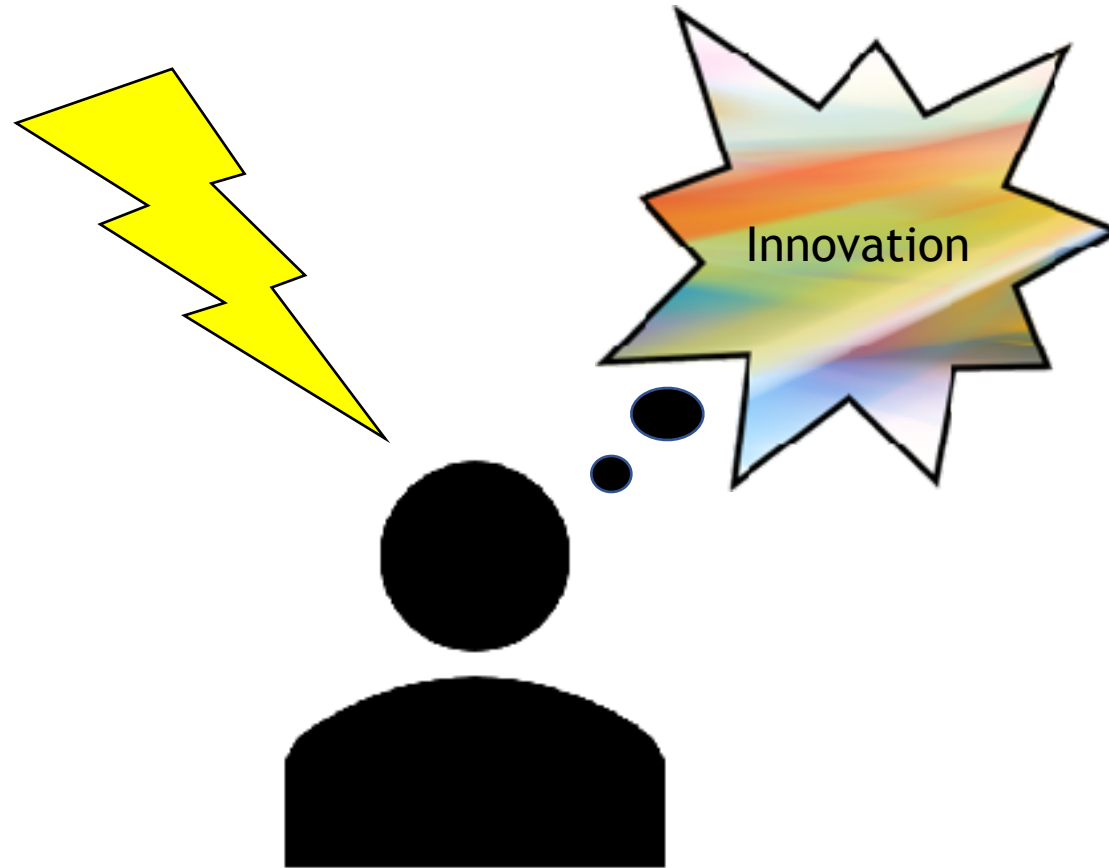
Innovation







Where does Innovation come from?





Creative Abilities in Identical and Fraternal Twins

Marvin Reznikoff,^{1,2} George Dornino,¹ Carolyn Bridges,¹ and
Morton Huxeyana²

Received 26 Oct. 1972 — Final 22 Feb. 1973

The present research set out to investigate the possibility of a genetic component in creative ability. The pool of subjects for this study consisted of 117 pairs of twins, 12–19 years of age, divided into 28 pairs of identical twins, 19 pairs of fraternal twins, 15 pairs of identical females, and 13 pairs of fraternal females. A battery of ten creativity tests, including five developed by Guilford, and one measure of verbal intelligence were administered to each subject. The majority of measures correlated for both the monozygotic and dizygotic twins on the 11 measures attained statistical significance, with the correlations tending to be somewhat higher in the identical twin groups. When the intraclass correlation of the identical and fraternal twins were compared directly on the various pairs, there were five statistically significant results. Interclassifications between the 11 tests compared two of a three revealed higher correlations in the monozygotic group, indicating a somewhat more consistent performance from test to test. The overall results, however, failed to provide convincing evidence of a genetic component in creativity.

INTRODUCTION

Although creativity has been much studied, there exist a number of basic questions that have not been fully investigated. One such question concerns the development of creativity. We need more knowledge and understanding of the origin of individual differences in divergent thinking and other creative abilities.

This study was funded by the Connecticut Research Commission.

¹Purdue University, West, New York.

²Requests for reprints should be sent to Dr. Marvin Reznikoff, Department of Psychology, Purdue University, West, New York.

³State Department of Health, Connecticut.

385

© 1973 Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011.

Can be learned?

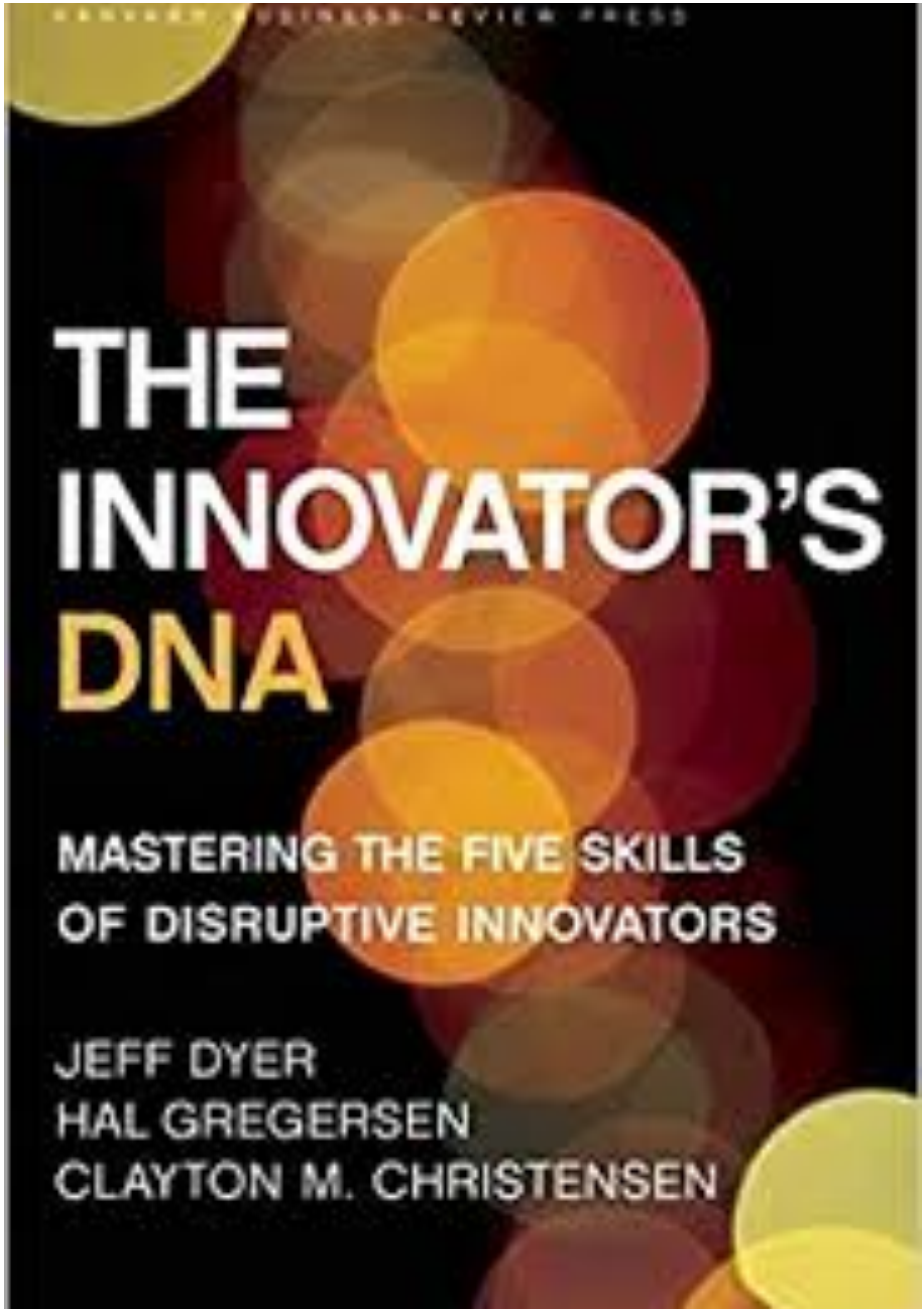
Creativity

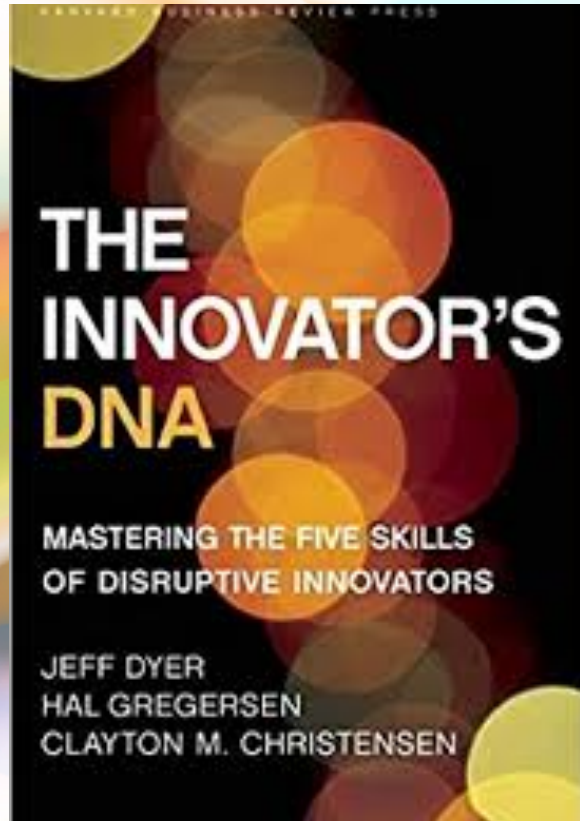


60 - 75%

General Intelligence







4 Behavioral Skills
+ 1 Cognitive Skill

5 Discovery Skills

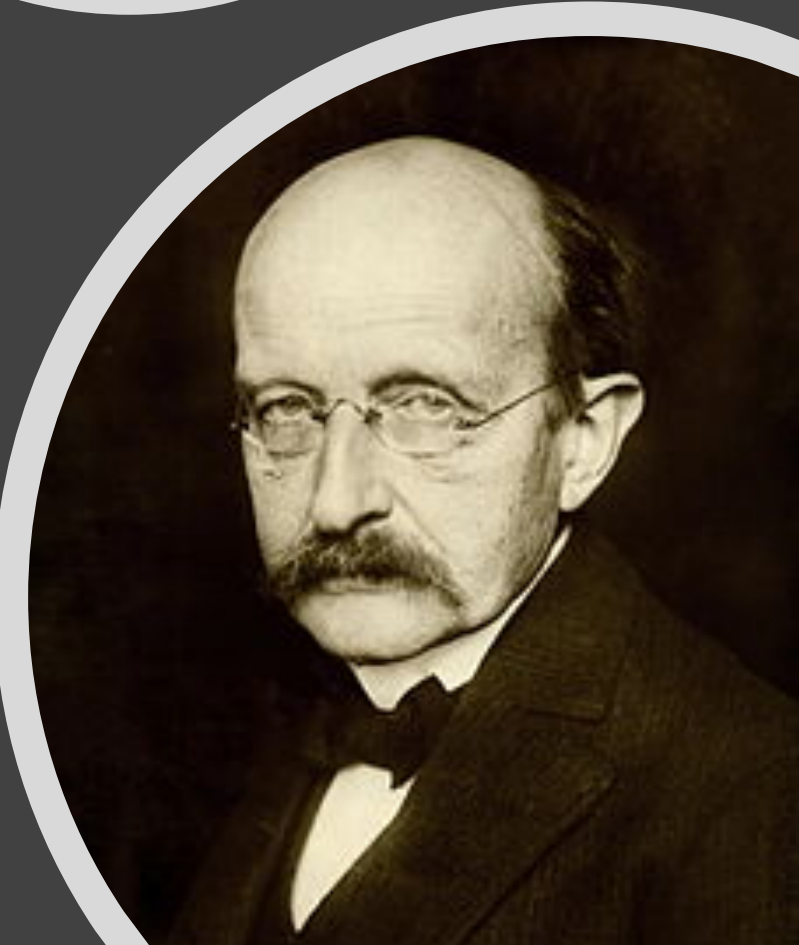


Behavioral Skill #1

Observing



A circular inset showing handwritten mathematical equations on a dark background, likely a chalkboard. The equations include:
$$p = -i\hbar \frac{\partial}{\partial x}$$
$$(a^\dagger + a)\psi$$
$$(a^\dagger - a)\psi$$
$$(a^\dagger + a + a^\dagger a - a a^\dagger)$$
$$(2a^\dagger a + 1)$$



“When you change the way you look at things, the things you look at change.”

-Max Planck



“Basic observation is a game changer in our business.”

-Scott Cook

How to improve observational skill

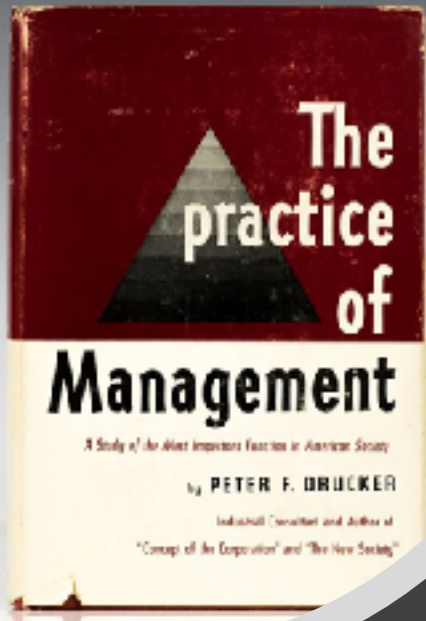


- Practice mindfulness
- Change your environment
- Identify things (e.g. plants and animals)
- Note own tendencies, mannerisms
- Silently observe customers using your products
- Engage all senses



Behavioral Skill #2

Questioning



Peter Drucker

Peter Drucker (“the founder of modern management”)

“The important and difficult job is never to find the right answers, it is to find the right question. For there are few things as useless - if not dangerous - as the right answer to the wrong question.”

Examples of a “wrong” question

- **(When discussing career options) What are you passionate about?**
- **Better question: What are you good at?**
- **Better question: What does the world need?**

Examples of a “wrong” question

- (When discussing corporate strategy) What are our competitors doing?
- Better question: What are customer pain points using the products of our industry?
- Better question: Are there noncustomers that can be induced to buy our offerings?

How to improve questioning skill



- Build confidence; do homework
- Start with “what-is” questions - who, what, when, where and how
- Ask “what caused” questions
- Disrupt with “why”, “why-not”, “what-if” questions
- Focus on constraints
- Be humble - “I’m sorry but I don’t get it. Why are we ...”



Behavioral Skill #3

Experimenting



“Experiments are the key to innovation because they rarely turn out as you expect, and you learn so much”
-Jeff Bezos

Amazon “failures”

- Amazon Fire (smartphone - launched 2014, \$170M loss)
- Destinations (Travel site - shutdown in 2015)
- Amazon Local (Local deals- launched 2011, shutdown 2015)
- Amazon Wallet (Digital wallet - shutdown 2015 after 6 months)
- Local Register (Square like credit card processor - shutdown in 2016)
- WebPay (Paypal-like service launched in 2007, shutdown in 2014)

Google “failures”

- Google Glass (Augmented reality glasses - launched 2012, shutdown in 2015)
- Google Wave (Collaboration platform - launched 2009, shutdown 2010)
- Google Lively (Virtual reality world - launched in 2007, shutdown 2008)
- Google Buzz (Facebook like service - launched in 2010, shutdown in 2012)
- Google Helpouts (Service for selling online help - Launched 2013, shutdown 2015)

How to improve experimenting skill



- Commit to satisfying your curiosity
- Take apart products, processes and ideas
- Test ideas through pilots and prototypes
- Crafting/Cooking
- Get comfortable with failure



“I haven’t failed ... I just found
10,000 ways that don’t work.”

- Thomas Edison





Behavioral Skill #4

Networking



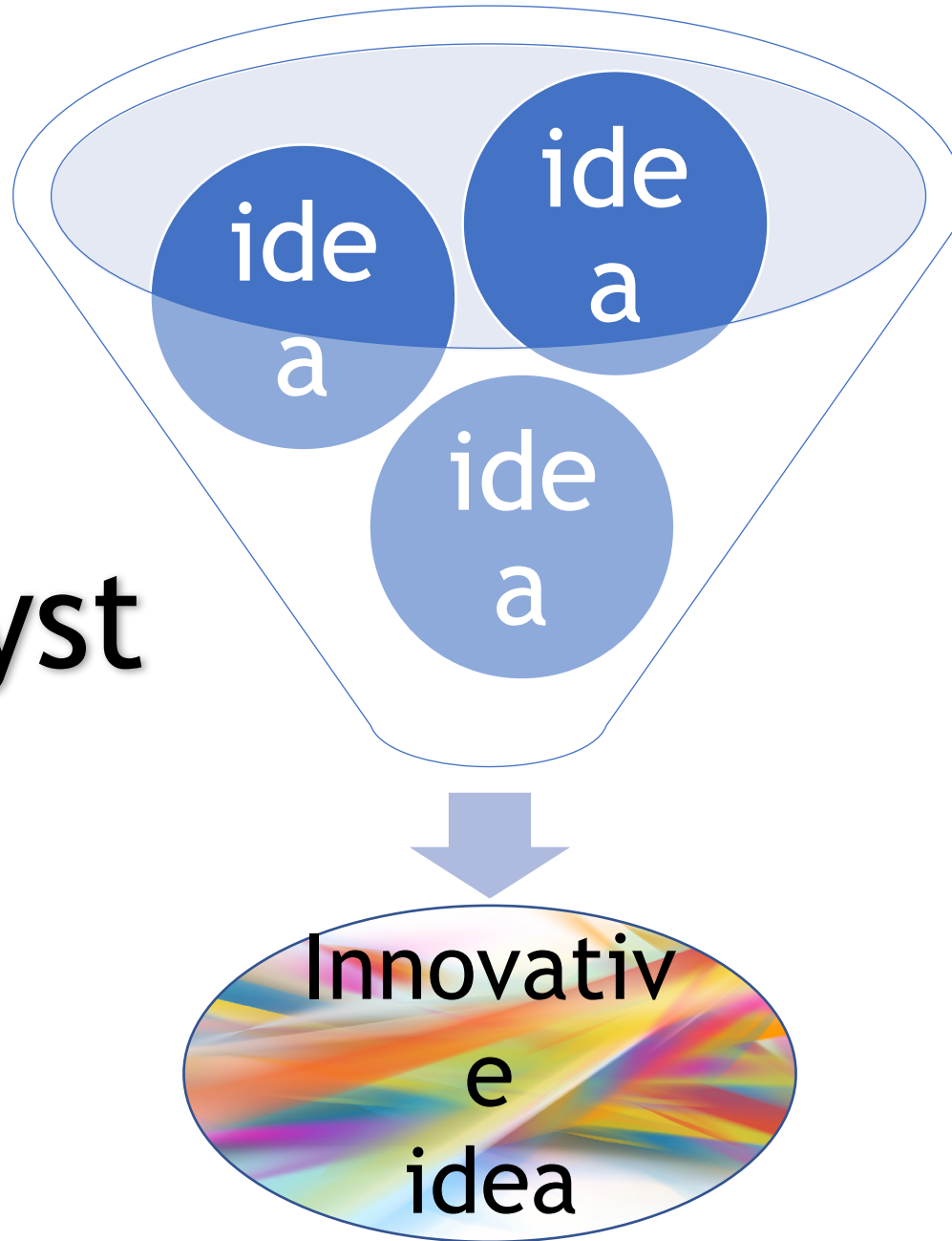
“Everyone you will ever meet
knows something you don’t”
-Bill Nye

How to improve networking skill



- Idea networking
- Be interesting!
- Develop network diversity
- Attend conferences (Oh yeah - already started!)
- Develop personal network of creative confidants
- Be an idea catalyst!

Idea Catalyst





“I think of myself as a little bee. I go from one area of the studio to another and gather pollen and stimulate everyone.”

- Walt Disney

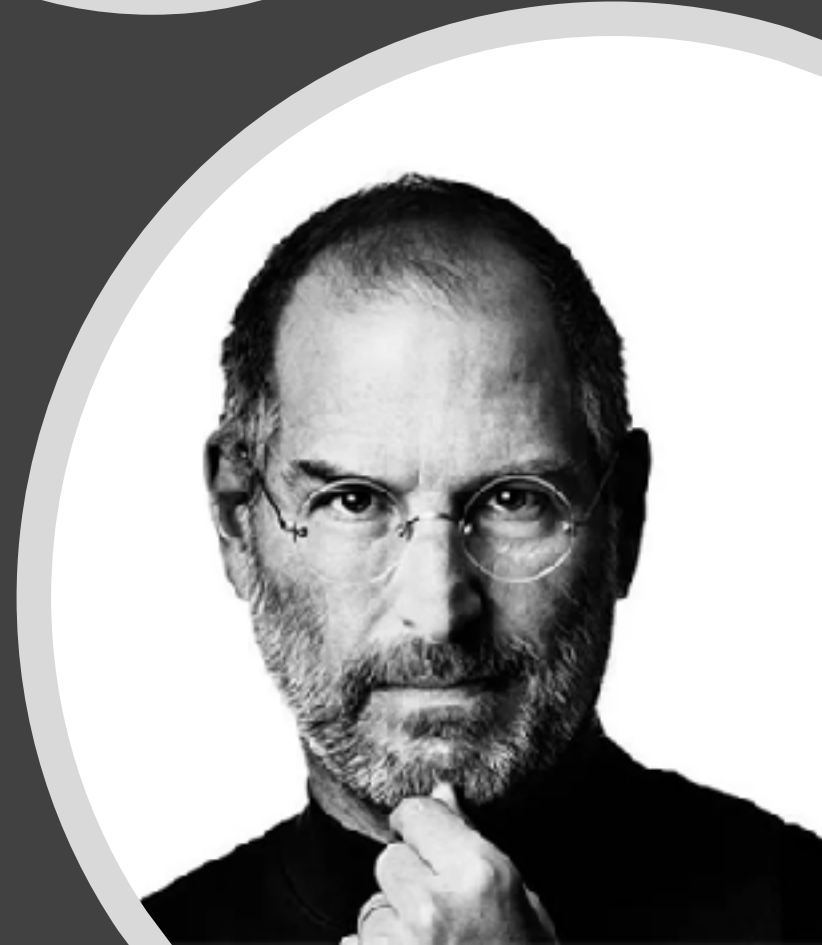


Cognitive Skill #1

Associating



Steve Jobs



Steve Jobs

“When you ask creative people how they did something, they feel a little guilty because they didn’t really do it, they just saw something...”

How to improve associating skill



- Creative flash; a chance event
- Build a large stock of ideas
- Sometimes occurs while practicing other discovery skills
- Frequently occurs while in a relaxed state
- Know your safe places and times
- Take care of your brain!



“Chance favors the prepared mind”
-Louis Pasteur



MUSKINGUM
UNIVERSITY

“Chance favors the observant,
inquisitive, playful, networker”

-Richard Reichard

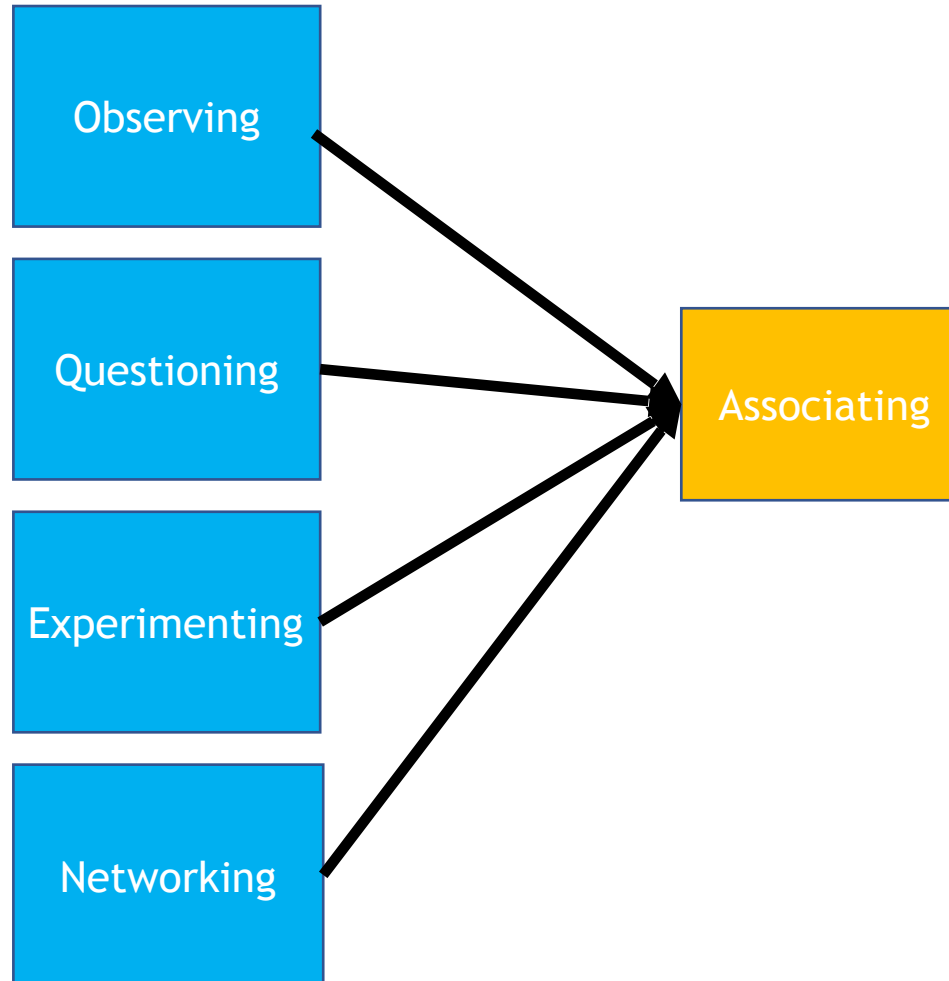


Innovator's DNA Innovation Model

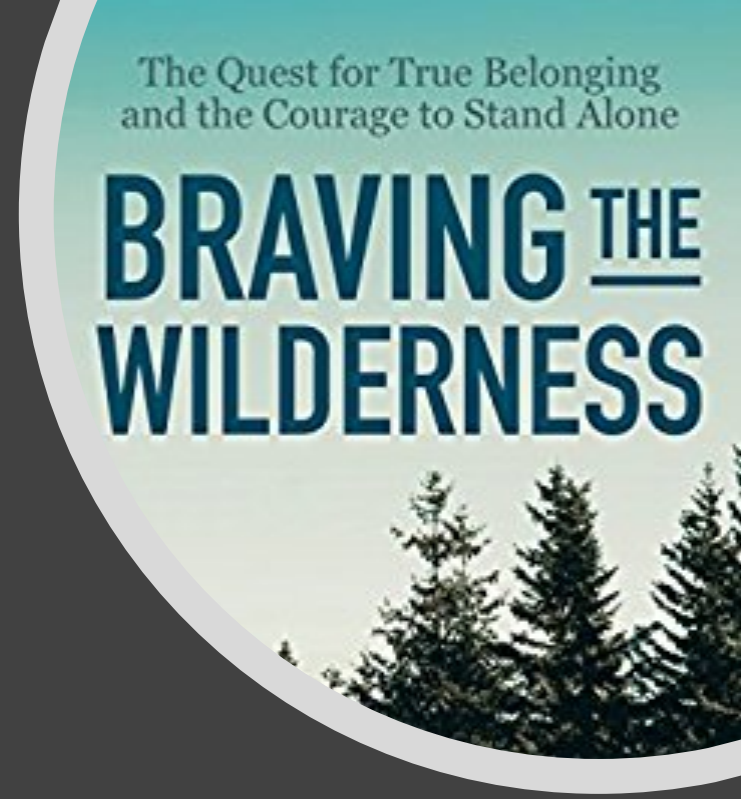
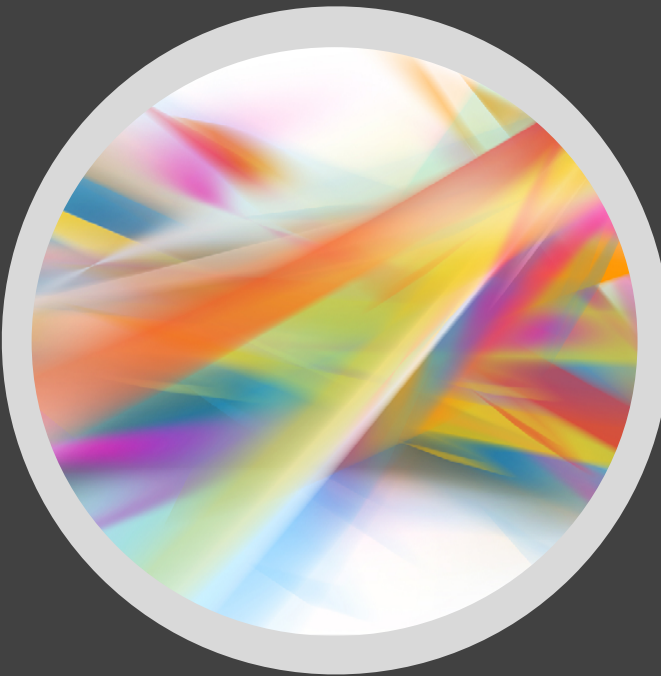
Motivation

Behavioral Skills

Cognitive Skill



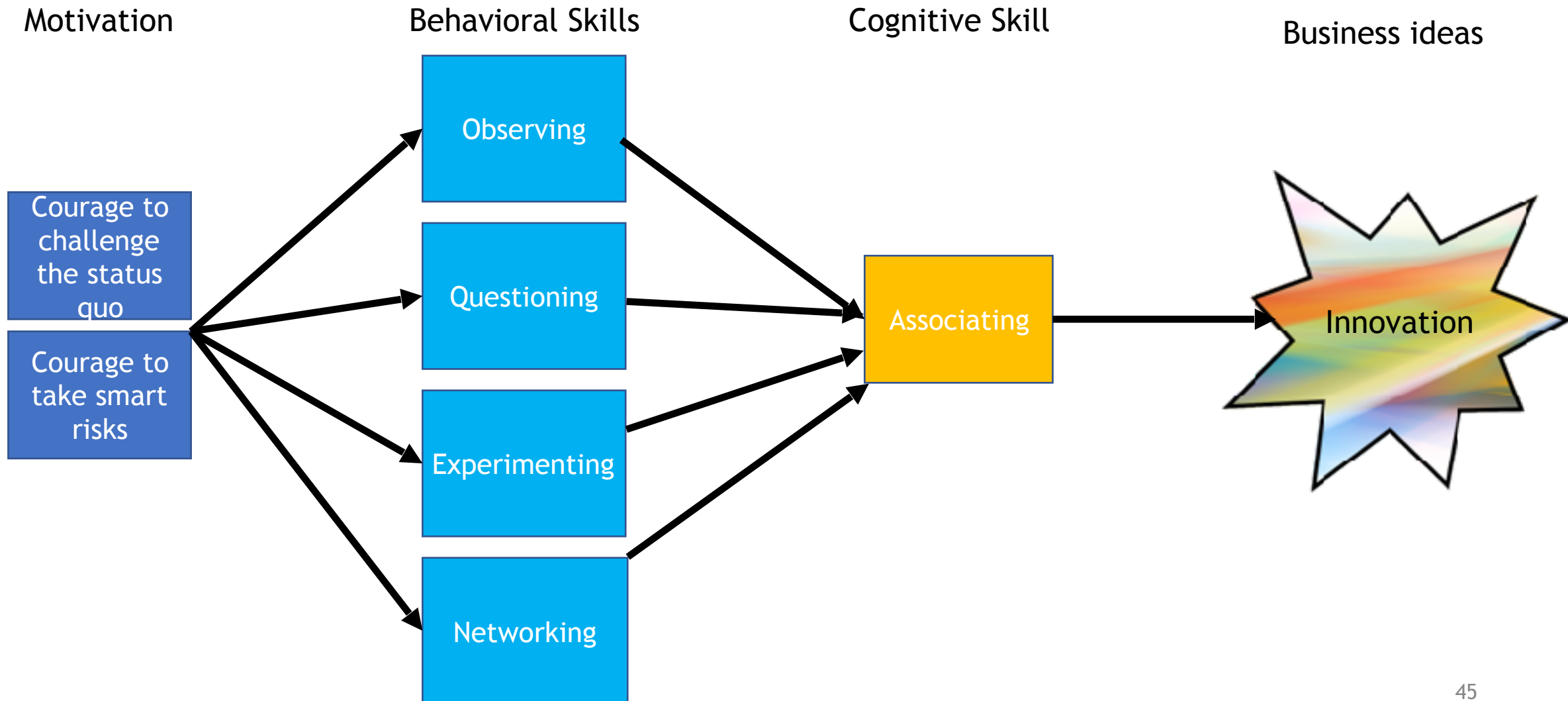
Courage to innovate

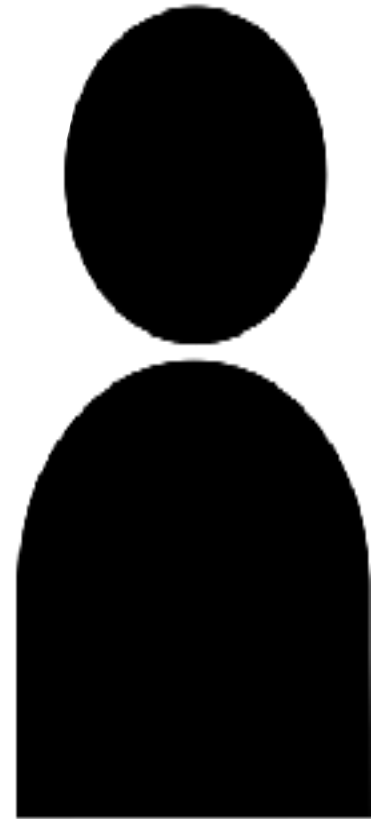
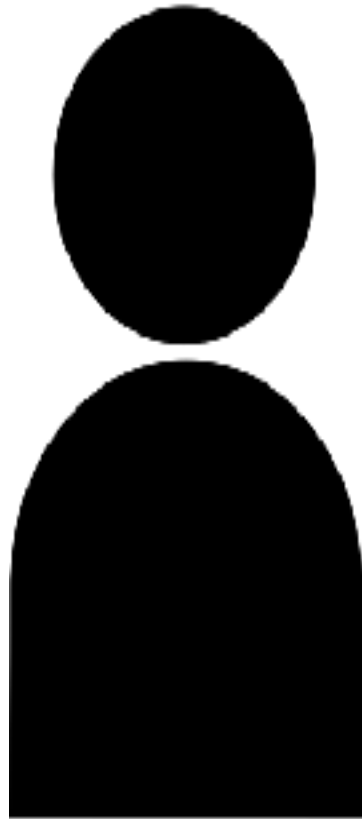


Integrity is choosing courage
over comfort.

- Brene Brown

Innovator's DNA Innovation Model





How do I become more innovative?

- Be ready and willing to challenge the status quo
- Be ready and willing to take smart risks
- Develop your four behavioral skills (i.e. build your stock of ideas)
 - Observing
 - Questioning
 - Experimenting
 - Networking
- Maximize your chance of having a creative insight by taking care of your brain

Taking questions