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Acknowledgement to students: Giovanni Barbieri, Sara Sara Karabashlieva, Rishabh Holani

Outline

- Simple Question: Are Entrepreneurs born or can these seminal skills be learned?
- Our work supports the idea that these skills (mindset) can be learned
- Presentation Logic:
- Mindset Background (Carol Dweck)
 - "people only learn when they can step outside their comfort zone"
 - Mindset plays a role
 - People can be taught to change mindset
- Our study shows that a Comfort Zone Scale (CZone) is correlated with being an entrepreneur and/or innovator
- Because mindset can be changed,
 - o a person can be taught to increase their Comfort Zone
 - This reinforces the concept that seminal entrepreneurship and innovation skills can be learned

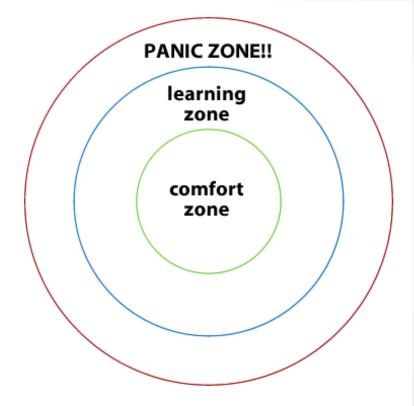


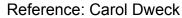


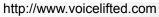


Background by Carol Dweck Growth vs Fixed Mindset Findings

- Fixed: Don't lose the "label".
- Growth: Comfortable that you don't know, but can learn.
- Results: K-12
- Reinforcement Matters













Comfort Zone Scale Personal P1 P2 P3 P4 Uncertainty Certainty W1 W2 W3 W4 Work/Professional Deletraz, Sidhu

- P1-4: Comfort with deciding but not knowing the result of personal decision.
- W1-4: Comfort with deciding but not knowing the result of professional decision
- Global data with Engineers, Business Managers, and Innovators/Entrepreneurs







1) Comfort with Personal Ambiguity

How much certainty do you need before making a significant choice in your personal life? P1: A very high degree of certainty (close to 100%)

P2: A significant level of certainty (50% or greater)

P3: More intuitive (less than 50%)

P4: Very little certainty, mostly instinctive (could be less than 10%)

2) Comfort with Professional Ambiguity

How much certainty do you need before making a significant choice in your professional life?

W1: A very high degree of certainty (close to 100%)

W2: A significant level of certainty (50% or greater)

W3: More intuitive (less than 50%)

W4: Very little certainty, mostly instinctive (could be less than 10%)

3) What were your Comfort Levels with Ambiguity in high school? (Personal) P1: A very high degree of certainty (close to 100%)

4) What were your Comfort Levels with Australia in high school 2 (Declarational) 14/1. A second high degree of certainty (close to 100%)

5) What factors most significant ambiguity comfort levels be

6) Do you associate an incre

a. Yes b. No

7) Do you associate an incre

a. Yes b. No

Measurement Instrument

ur personal life?

ur professional life?

- 8) What would you like your Ambiguity Comfort Level to be in the future? (Personal) Personal Scale Certainty Requirement
- 9) What would you like your Ambiguity Comfort Level to be in the future? (Professional) Personal Scale Certainty Requirement
- 10) Did you feel that your personal and professional comfort levels were coupled? E.g. if coupled: a P2 is generally also a W2, and a P4 would generally be a W4
- a. Yes, b. No, c. Not sure
- 11) What is your educational background?
- a. Engineering, science, or other technical area b. Liberal arts, Business, or other
- 12) What is your gender? a. Male b. Female
- 13) What is your age? a. Under 29, b. 30-39 c. 40 or older
- 14) Where do you currently work? a. USA b. Latin America c. Europe, d. Middle East e. Asia, f. Australia g. Other
- 15) How would you mostly consider yourself? a. Entrepreneur or innovator, b. Management, operations, or business c. Engineering or technicald. Administrative or other

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- 3) What were your Comfort Levels with Ambiguity in high school? (Personal) P1: A very high degree of certainty (close to 100%)
- 4) What were your Comfort Levels with Ambiguity in high school? (Professional) W1: A very high degree of certainty (close to 100%)
- 5) What factors most significantly caused the change in your personal and professional ambiguity comfort levels between high school and now?
- 6) Do you associate an increase in "Comfort with Ambiguity" with greater overall satisfaction in your personal life?
- a. Yes b. No
- 7) Do you associate an increase in "Comfort with Ambiguity" with greater overall satisfaction in your professional life?
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1) Comfort with Personal Ambiguity

How much certainty do you need before making a significant choice in your personal life? P1: A very high degree of certainty (close to 100%)

Population of over 1000 Data points

Range of Professions

Range of Educational Backgrounds

Global and Demographic Information

P2: A significant level of certainty (50% or greater)

P3: More intuitive (less than 50%)

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2) Comfort with Professional Ambiguity

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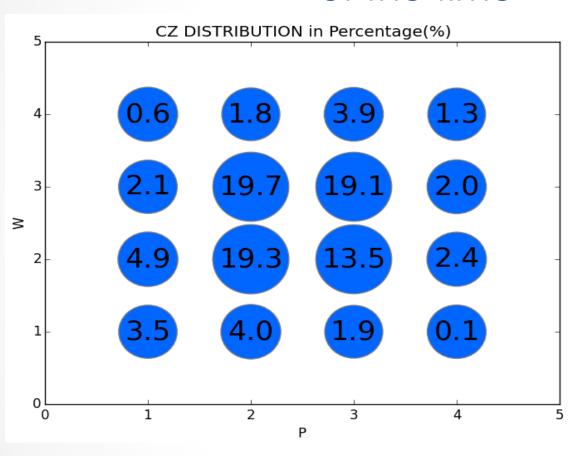
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enerally also a W2, and a

P and W are equivalent less than 50%

of the time



P /= W: 56.8% of people

70% of respondents positioned themselves in level 2 or 3, but half favor one over the other

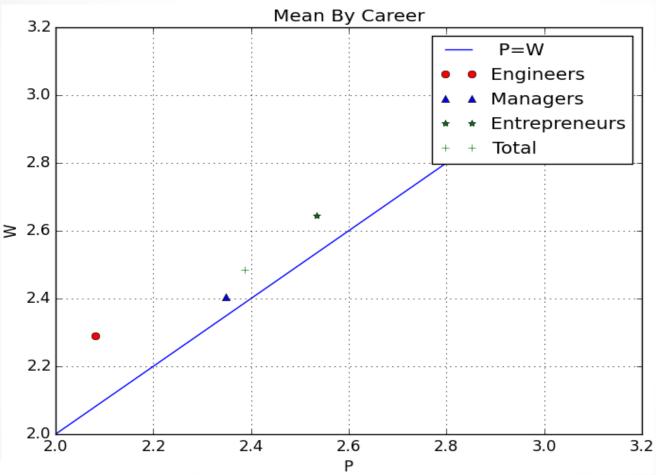
Deletraz, Sidhu







Entrepreneurs and Innovators have largest willingness to be outside comfort zones



95% confidence interval: plus or minus 0.042;

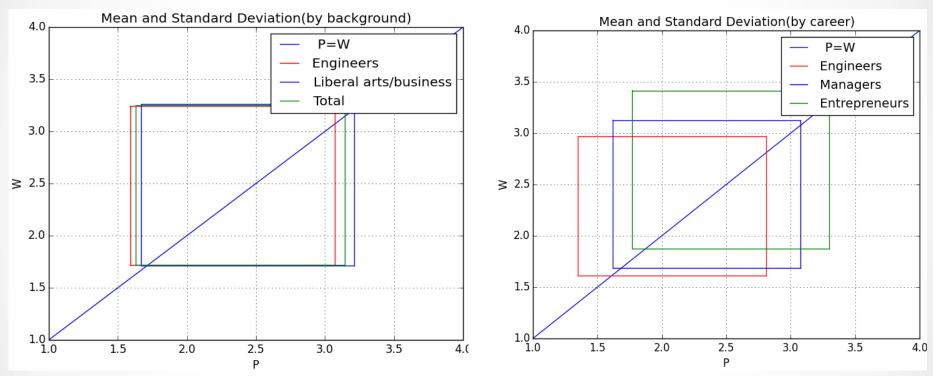
therefore the differences illustrated (e.g. 0.1 to 0.5 for changes on W and P) are statistically significant.







Innovators are not from the same background



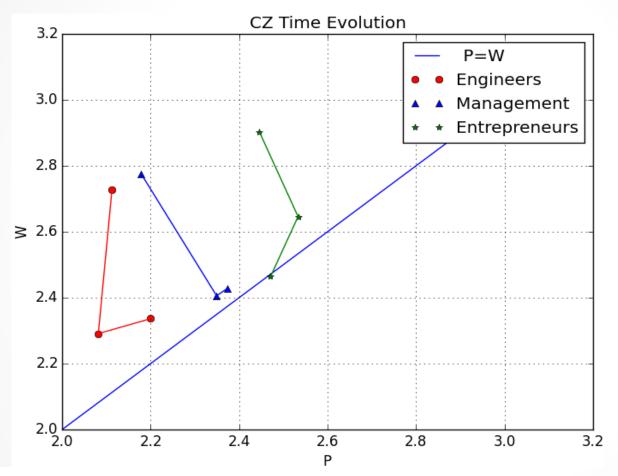
Mean and Standard Deviation by Background (4) and by Career (5) Deletraz, Sidhu







Evolution Over Time



Notably, entrepreneurs increase their comfort with uncertainty over their careers, which is not the case for nonengineers and managers.

Deletraz, Sidhu





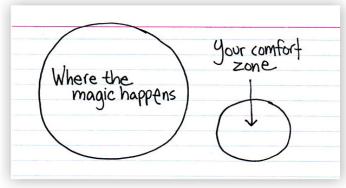


Summary: Line of Thought

- People can learn new things only when they are outside of their comfort zone.
- Innovators and entrepreneurs are the comfortable with uncertainty & ambiguity. (and in fact even increasingly so over time)
- Implications on Organizations:

Innovative Organizations & Cultures

- Must Learn faster
- Must be comfortable with new and ambiguous situations
- Mindset and psychology are at the root of innovation culture



Good News:

Comfort with growth, ambiguity, and resilience can be taught.

How: Reinforcement, Mental Training, and Berkeley Method Games







End of Section

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