Creativity, Innovation & Entrepreneurship

Institute for Social Sciences
2013-2016 Theme Project

April 9, 2014
Premises

• Innovation and entrepreneurship are important engines of the global economy
• There is growing interest in, and demand for, entrepreneurship education
• There is a need for an interdisciplinary social science perspective to build new knowledge and inform curriculum

Cornell can bring a *distinctive perspective* to the study of creativity, innovation, & entrepreneurship
History of Combining Theory & Practice

- Founding vision
- Land Grant Mission
- Elite Orientation

Disciplinary Excellence

Strong Social Science Departments

- Sociology
- Psychology
- Applied Economics

Deep Traditions

Unique Strengths

Distinctive Programs

- Industrial & Labor Relations
- Science & Technology Studies
- Law & Economics
Creativity

Innovation

Entrepreneurship
John Harrison
(1693-1776)
The Longitude Act of 1714
Longitude at Sea
1737 Board of Longitude

Sir Charles Wager,
First Lord of the Admiralty

Right Honorable Arthur Onslow,
Speaker of the House of Commons

Lord Monson,
Commissioner of Lands and Plantations

Sir John Norris,
Admiral and head of the fleet at Lisbon

Sir Hans Sloan,
President of the Royal Society

Dr. Edmond Halley,
Astronomer Royal

Dr. James Bradley,
Savilian Professor of Astronomy at Oxford

Dr. Robert Smith,
Plumian Professor of Astronomy at Cambridge
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Conventional Wisdom

Disruptive Innovation
Conventional Wisdom
Disruptive Innovation
John Harrison
Awarded prize money by Parliament in 1773
Why this story?
Myth or Reality?

- Are prizes an effective way to stimulate innovation?
- How are innovations evaluated?
- Who decides what is novel & useful?
- Who judges? How?
- What biases are activated?

Lone Genius

Graph: Number of Inventions vs. Value, Quality or Financial Returns of Inventions

Breakthroughs
Myth or Reality?

Are prizes an effective way to stimulate innovation?

Sources of philanthropic prize capital, 2000–07, %

- Foundation/not-for-profit (established after 1995): 47%
- Corporation: 27%
- Government: 17%
- Foundation/not-for-profit (established before 1995): 5%
- Other: 5%

Distribution of philanthropic prize capital by sector, $ million

- Science, engineering: 88
- Aviation, space: 27
- Climate, environment: 77
- Arts: 30
- Other: 33
- Total: 315

Lone Genius

Incentives
Myth or Reality?

Are prizes an effective way to stimulate innovation?
Myth or Reality?

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What constitutes a creative output? Is “novel and useful” a sufficient definition?
Myth or Reality?

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What constitutes a creative output? Is “novel and useful” a sufficient definition?

How are innovations evaluated? Who decides what is novel & useful?
Who judges? How?
What biases are activated?
Science & Technology Studies

Psychological Perspectives

CREATIVITY

ECONOMICS

INNOVATION

Sociology, Institutions, Organizations

ENTREPRENEURSHIP

Law, Strategy

Economic Perspectives
How are ideas protected? How should innovations be governed? How are innovations assigned value?

What are the institutional arrangements that best foster and support innovation?

When are institutions and economic orders overturned? What is the role of societal norms and values?

When and why do innovations diffuse?
John Harrison
(1693-1776)

What is missing from this story?
Has the world changed?
Not Attracting Talented People to Work on Important Problems

“Why do these smart, quantitatively trained engineers, who could help cure cancer or fix healthcare.gov, want to work for a sexting app?”
Not Attracting Investors

Federal R&D in the Budget and the Economy
Outlays as share of total, 1962 - 2014

Source: Budget of the United States Government, FY 2014. FY 2013 data do not reflect sequestration. FY 2014 is the President's request.
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Private Sector R&D Investments
Venture Capital Investments

($ in millions)
All results rounded

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<th>Year</th>
<th>Q1</th>
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<th>Q3</th>
<th>Q4</th>
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<td>7,074</td>
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</table>

Amount Invested  # of Deals
Venture Capital Investments by Stage

<table>
<thead>
<tr>
<th>Stage</th>
<th>2012</th>
<th>2013</th>
<th>($ in millions)</th>
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<tbody>
<tr>
<td>Later Stage</td>
<td>8,742</td>
<td>8,825</td>
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<tr>
<td>Expansion</td>
<td>9,445</td>
<td>9,838</td>
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<tr>
<td>Early Stage</td>
<td>8,312</td>
<td>9,759</td>
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</table>

Note: All results rounded.
Barriers and Biases

Investors prefer entrepreneurial ventures pitched by attractive men

Alison Wood Brooks, Laura Huang, Sarah Wood Kearney, and Fiona E. Murray

Although the gender imbalance is undesirable and challenging for female entrepreneurs, it remains unclear whether the gender imbalance is due to irrational investor behavior. If male entrepreneurs are inherently more talented or more likely to be at an advantage throughout their ventures or throughout their careers, then the gender gap in entrepreneurship may result from rational statistical discrimination by investors. In the same way that participants in the classic Keynesian beauty contest game were asked to choose the most popular — (rather than the most beautiful) — contestant, investors may rationally seek to invest in male-led ventures that other investors and future customers are most likely to prefer.

Across the broad landscape of entrepreneurial ventures, it is unclear whether men outperform women. Some prior work has found that, compared to men, women are likely to have fewer employees, lower growth projections, and lower levels of internationalization. On the other hand, recent work using 15 years of panel data from the Standard & Poor’s Financial Services...
Interdisciplinary Approach
RESEARCH
Funding for collaborative interdisciplinary research projects

TEACHING
Doctoral seminar
New undergraduate offerings

OUTREACH
Jointly sponsored seminars
Topical Workshops
**CREATIVITY**
- Laboratory based psychological research
- Engagement with extraordinarily creative individuals
- Workshop on the theories and practices of creativity
- New graduate seminar on creativity

**INNOVATION**
- Quantitative and archival research on intellectual property, organizational innovation, alternatives to patenting, innovation governance
- Focus project on innovations in finance and music
- Co-sponsored academic seminars and workshops
- New graduate & undergraduate courses in Ithaca and NYC

**ENTREPRENEURSHIP**
- Quantitative and field research on new venture creations, entrepreneurial careers, and job creation.
- Case-based research on nascent entrepreneurs
- Co-sponsored seminars and workshops with Eship@Cornell
- Entrepreneurial careers conference
- New graduate course on law & entrepreneurship
Individual and Joint Research

**In Residence**
- Co-sponsored research seminars
- Collaborative research

**Entrepreneurship conference**

**Outreach and Dissemination**
- Preparing publications
- Fundraising and grant writing
- Developing new courses

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**Summer 2014**

**Fall 2014**

**Spring 2015**

**Summer 2015**

**Fall 2015**

**Spring 2016**
Creativity

• How does context and environment influence creativity?
• How do we recognize creative ideas?
• What can we learn from extraordinarily creative individuals?
• Can we teach people to be more creative?
Innovation

• What can we learn from studying innovation at different levels of analysis (e.g., individual, group, organization, region)?
• How are social and cultural values embodied in innovations?
• How and why do innovations become widely adopted?
• How do institutions enable/inhibit/moderate innovation?
• How can innovation be stimulated/encouraged?
Entrepreneurship

• To what extent do innovation and entrepreneurship drive economic prosperity?
• What accounts for the dramatic variation in rates in innovation, social entrepreneurship and venture creation?
• Can creativity be sparked in ways that lead to innovation and entrepreneurship? Should it?
• How do new firms and new industries differ in structure, rewards, stability and other features?
• Do entrepreneurial ventures provide "good jobs" or "bad jobs," and under what conditions?
Entrepreneurship

• To what extent do innovation and entrepreneurship drive economic prosperity? social welfare?
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Mission

We seek a rigorous social scientific understanding of the processes by which creative people develop novel ideas that garner interest and support from stakeholders and lead to new organizations and new industries that fundamentally alter economic and social orders.
Thank You