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Typology of Platforms: A Fuzzy Set Approach to Platform Configurations

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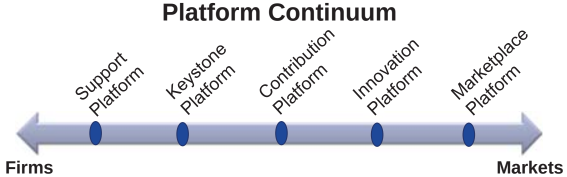
Introduction

- Different platforms have different value propositions (e.g. Apple, Facebook, Amazon). Though the question of how the platform characteristics influences its growth has been focal, little is known about how the varied value propositions impact these causal relationships.
- We build a typology of platforms based on its *marketness,* a construct to define the degree of market-like attributes employed in the platform to create value.
- We use fuzzy-set qualitative comparative analysis to arrive at the configuration of platform characteristics necessary for high growth in each type of platform.

Objective

- Extant typologies of platforms identified in the literature attempt to integrate the different literature streams but do not explore the underlying causal mechanisms between platform characteristics and growth. Our paper fills this gap by identifying a typology based on the *marketness* in a platform and then analyzes the causal relationships.

Platform Continuum



		Support ecosystem	Keystone ecosystem	Contribution ecosystem	Innovation ecosystem	Marketplace ecosystem
Market Attributes		Information exchange Trading Matching	Information exchange Trading Matching Substitutability	Information exchange Social activity Matching Substitutability	Information exchange Social activity Matching Substitutability Trading	Information exchange Trading Matching Substitutability Price competition
Examples		Online sales channels, support forums	Apple and Android app stores	Reddit, Facebook, Twitter	Kaggle, TopCoder, Coursera	Amazon.com, Expedia, Shopify

Characteristics	Solution 1	Solution 2	Solution 3	Solution 4
Marketness	LOW	MEDIUM	HIGH	
High Platform Control	⬤	●	⬤	⨂
Openness		●	⨂	
Complement variety	⨂	●	●	●
Non-generic complementarity	⬤	●	●	⊗
Consistency	0.968	0.969	0.751	0.86
Raw coverage	0.728	0.308	0.152	0.53
Unique coverage	0.728	0.287	0.129	0.13

⬤ - Core Condition Present
⨂ - Core Condition Absent
● - Peripheral Condition Present
⊗ - Peripheral Condition Absent

Marketness	Recipe for High Platform Growth
Low	High Platform Control . ~Complement variety . Specific complementarity
Medium	High Platform Control . Openness. Complement variety . Specific complementarity
High	[~High Platform Control . Complement variety . ~Specific complementarity] + [High Platform Control . ~Openness . Complement variety . Specific complementarity]

Boolean Algebra notation used above depicts:
"." denotes Logical AND
"~" denotes Logical negation
"+" denotes Logical OR

Method

- Sample consisted of 33 ecosystems having an online platform and based in North America.
- We used web scraped data across multiple web pages to identify the market attributes employed in the platform.
- We collected qualitative and quantitative data from company sources, news reports and industry analyst reports. The data for all variables were calibrated against industry benchmarks
- We used fsQCA that conceptualizes cases as configurations of causal attributes and identifies necessary and sufficient conditions for the presence or absence of the outcome using logic of set theory.

Results and Impact

- Platform characteristics are interconnected and take the form of different configurations at different degrees of marketness
- As marketness increases, platform firm control and complement variety decreases; non-generic complementarity gives way to generic complementarity
- In contrast to extant theory, we find that interface openness is only a peripheral condition and its absence can still lead to high growth when coupled with high platform firm control and non-generic complementarity

Discussion

- Platform continuum serves as an organizing framework to identify the type of platform based on marketness. The continuum shows that for high platform growth the configuration of characteristics needs to change as the position of the platform on the continuum changes.
- Heterogeneity in platform performance can come from differences in alignment between marketness and platform characteristics
- These findings can inform entrepreneurs in their decisions on defining platform characteristics.

Take away message

- Platforms differ based on the marketness employed
- No one dominant path to platform growth rather an alignment between platform characteristics and value proposition-defined marketness

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Green Building Adoption in Emerging Market Countries: The Role of Foreign Direct Investment

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Motivation: Emerging Markets are Key

Emerging market countries represent the majority of *GLOBAL:* population, greenhouse gas production, built world construction

As developing economies get richer, they will consume – and emit – more.

Global Greenhouse Gas and Built World Measures

(b) Total Gross Fixed Capital Formation, by Country Type

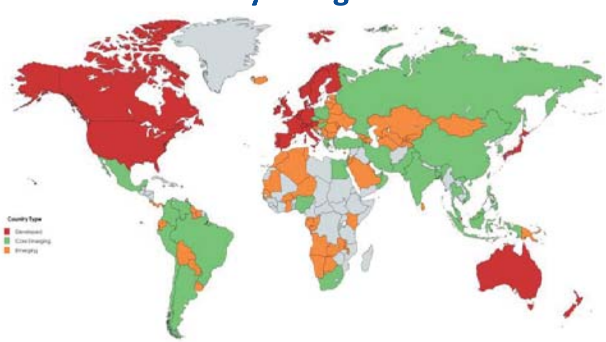
Hypotheses

H1: As emerging market countries advance their economies, they begin to adopt environmentally-sensitive building practices.

H2: Foreign Direct Investment (FDI) explains increases in the adoption of green building technology in emerging market countries.

H3: The creation and adoption of domestic environmental building certification schemes follows foreign investors' exportation of green building technology to an emerging market country.

Country Designations

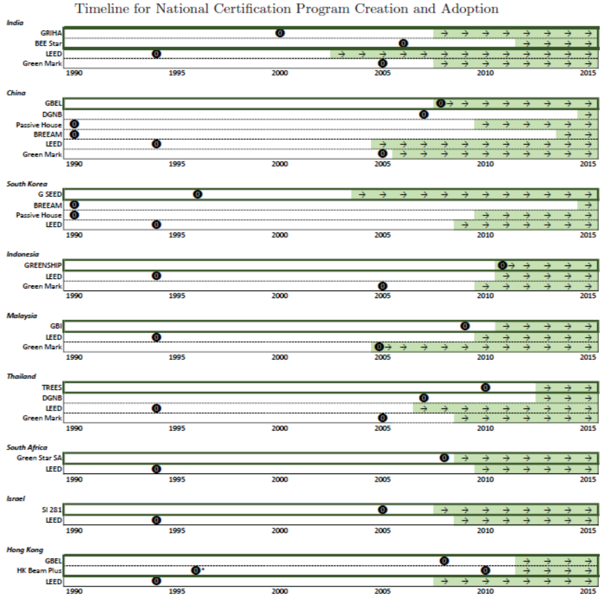


Certification Programs

Origins and Uptake in Core and Emerging Countries

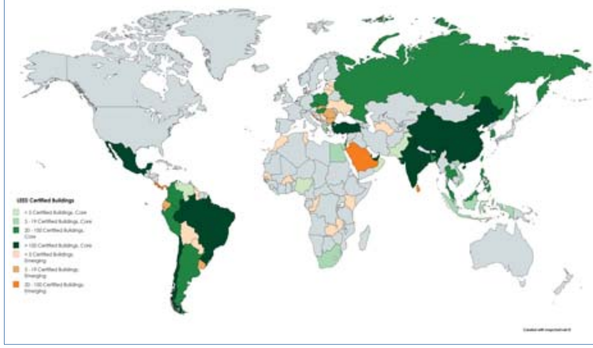
Program	Home Country	Year of Inception	Countries with Certifications, Total/Developing	Year End 2015 Certifications, Core/Emerging
BEE Star	India	2006	1 / 1	136 / 0
GBEL*	China	2008	2 / 2	1,446 / 0
GBI	Malaysia	2009	1 / 1	51 / 0
GREENSHIP	Indonesia	2011	1 / 1	14 / 0
Green Star SA	South Africa	2008	3 / 2	135 / 0
GRIHA	India	2000	1 / 1	550 / 0
G-SEED*	South Korea	1996	1 / 1	630 / 0
HK BEAM Plus	Hong Kong	2010	3 / 3	25 / 0
SI 5281	Israel	2005	1 / 1	259 / 0
TREES	Thailand	2010	1 / 1	11 / 0
BREEAM	United Kingdom	1990	48 / 17	174 / 47
DGNB	Germany	2007	14 / 8	6 / 7
Green Mark	Singapore	2005	21 / 13	104 / 27
LEED	United States	1994	109 / 67	2835 / 233
Passive House	Germany	1990	38 / 10	11 / 4

Timeline for National Certification Program Creation and Adoption



Developing Countries, LEED Adoption

Similar Analyses for other certification programs



Indicates program origin *Indicates program use*

Programs in dark boxes are domestic, below are international programs

Other Analyses

- Extensive Diffusion Margin
  - In sustainable building tech across different market development stages
- Dispersion, Speed of Convergence analyses
  - In green building certification vs. GDP per capita
- OLS, probit, and instrumented variable regressions
  - For FDI driving green building certification adoption
- For probability of creation and scale of adoption of new country-specific green building certification program

Findings

- More advanced developing economies adopt green building certification at a higher rate
- There is consistent evidence of positive, significant relationship between FDI and green building certification adoption
- In most advanced emerging economies with a domestic program, that program was preceded by international green building certification activity, exported to that market by FDI

Understanding Coworkers' Positive Responses to Disability Employment

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Introduction

RESEARCH QUESTION:

Why and under what conditions do coworkers of employees with intellectual and developmental disabilities (EIDD) respond in ways to working with PIDD that are beneficial to the organization?

PREVIOUS RESEARCH:

In organizational behavior research, disability is predominantly studied as a stigma and persons with disabilities (PWD) are stereotyped as lacking competence and in need of help from others (Beatty et al., 2018). In turn, PWD are thought to be subject to negative treatment, pity, and paternalism (Stone & Colella, 1996).

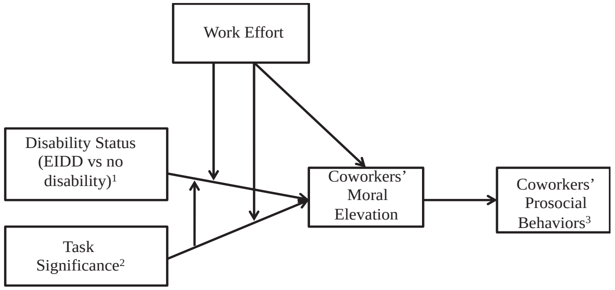
Coworkers' positive responses to PWD are typically thought to occur when PWD convey ***competence*** (i.e., good performance) which counteracts concerns of incompetence, decreases pity and increases admiration (Lyons et al., 2017; 2018). However, PWD may be unable to convey competence (e.g., lack of accommodation) and research is unclear about alternative routes through which coworkers respond positively toward PWD in ways that are beneficial to the organization.

CURRENT RESEARCH:

We propose that ***moral elevation***, an emotional state experienced by individuals when witnessing uncommon acts of goodness (Haidt, 2000, 2003), arises when working with PWD. Moral elevation explains coworkers' prosocial behaviors toward others in the organization.

We propose that moral elevation is most likely to be elicited in coworkers when PWD exhibit behaviors that are morally virtuous (***hard work***) and when their work is impactful on other people (***task significance***).

STUDY MODEL



Note:
[1] Study 1 and Study 2
[2] Study 2 and Study 3
[3] Study 3
EIDD = Employee with intellectual and/or developmental disability

Study 1 – Experimental Scenario

PURPOSE:

To examine the effect of disability status, effort, and task significance on coworkers' moral elevation.

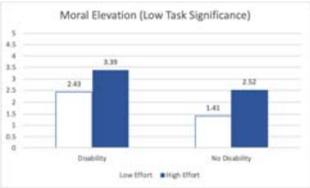
METHOD:

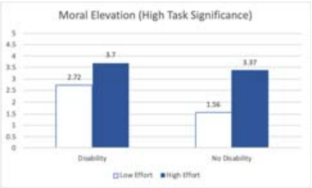
Participants were asked to think of themselves as a member of a project team with new member, David who is EIDD.

We randomly assigned 363 Mechanical Turk participants to one of eight experimental conditions: **Disability status** (no vs yes), David's **work effort** (high vs low), David's **task significance** (high vs low).

Participants then completed a measure of **moral elevation**, including three components: (1) desire to be a better person, (2) admiration, and (3) positive views of humanity.

RESULTS:





Study 2 – Field Study

PURPOSE:

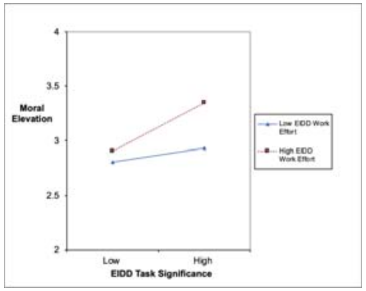
To examine the effect of EIDD effort and task significance on coworkers' moral elevation and prosocial behaviors in a real organization.

METHOD:

Participants were 80 employees of a credit union (in Western Canada) who recently started working with EIDD.

Measures were completed at two points, separated by 3-4 months. At Time 1, participants completed measures of **perceived EIDD work effort** and **perceived EIDD task significance** and at Time 2 participants completed measures of **moral elevation** and **prosocial behaviours**.

We also controlled for **perceptions of competence**.



Moral elevation positively related to prosocial behaviors ($b = .29$, $p<.05$) and mediated the association between task significance and prosocial behaviors.

The mediation was stronger when effort was high compared to low.

Take Away Message

We show another path, beyond competence, to coworkers' positive responses to disability employment. Coworkers of EIDD experience moral elevation when they encounter EIDD in the workplace, especially when EIDD exhibit high levels of work effort and engage in tasks that are significant. Moral elevation in turn influences coworkers' willingness to engage in prosocial behaviors toward others in the organization. Overall, our research demonstrates conditions under which disability employment can elevate coworkers and result in positive outcomes for organizations.

PRACTICAL IMPLICATIONS:

Our results suggest that organizations can benefit from placing EIDD in work that is significant and that is more likely to be beneficial when communication is clear in regard to EIDD work effort.

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Environmental Disclosure and the Cost of Capital: Evidence from the Fukushima Nuclear Disaster

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Introduction

- On March 11, 2011, a tsunami disabled the power supply and cooling units of the Fukushima Daiichi reactors, causing the meltdown of all nuclear cores over the following three days.
- Investor uncertainty about the economic implications of the disaster created an upsurge in demand for environmental information, particularly information about firms' exposure to the disaster.
- As such, we examine the relation between environmental disclosure and the cost of capital using the Fukushima nuclear disaster as a source of exogenous variation in the demand for environmental information; hence a shock to the cost of capital for Japanese firms.

Hypothesis

The precision of a firm's environmental disclosures in the pre-disaster period is negatively associated with the impact of the disaster on the firm's cost of capital.

Figure 1: Sensitivity of cost of capital to environmental performance

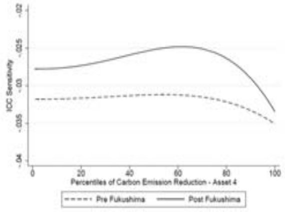

Figure 1 plots the sensitivity of the cost of capital, measured as the yearly average of the four cost of capital metrics, to environmental performance, measured as the carbon emission reduction score from Asset4, separately for the pre- (dash line) and post-disaster (continuous line) periods. All variables are defined in Appendix B.

Method

- To be included in the sample, a firm must be listed in the First Section of the Tokyo Stock Exchange for the 2002-2013 period and must have data available to compute the implied cost of capital metrics and disclosure and control variables.
- The sample comprises 4,216 firm-year observations from 392 unique firms during the 2002-2013 period.
- We take the firm-specific average of each disclosure precision determinant variable over the three years prior to the disaster (i.e., 2007-2009) and use a full set of control variables.
- We collapse the sample to the firm level, i.e., one observation per firm.
- We regress the CO_2_DISCLOSURE$_i$ dummy on the firm-specific average of the determinant variables, with industry fixed effects using the two-digit SIC industry classification code, to obtain the firm-specific weights that satisfy the pre-determined moment conditions.

Results and Impact

- Firms with high disclosure precision in their environmental reports experienced a **lower** increase in the cost of capital than firms with **low** disclosure precision.
- The effect on the cost of capital is driven by an increase in investor uncertainty about the energy supply shortage that followed the disaster, rather than future regulatory costs.
- After the disaster, firms with **low** disclosure precision in the pre-disaster period **increased** their environmental disclosures significantly more than firms with high disclosure precision.

Discussion

- Our findings provide insights into whether unregulated, non-financial disclosures inure to the benefit of firms when they are hit with economic shocks.
- We show that environmental disclosures mitigate the increase in the cost of capital and shed light on the underlying mechanism – energy dependence – through which environmental disclosure affects the cost of capital.

Take away message

- Firms that disclose carbon emission information experience a **lower** increase in the cost of capital compared with firms that do **not** disclose information about their carbon emissions.
- Effect of disclosure is more about firm's exposure to **energy shortage** (vs. relevance to future regulatory costs for pollution abatement.
- Disclosure reaction in the post-disaster period is **higher** for firms that do **not** disclose carbon emissions data before the disaster.

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Envy, Future Possible Self, and Career Self Management

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Research Question

- Does envy affect images of one's future self, and in turn, career self-management?

Future Possible Self

- Contains information about how to achieve the future self
- Social constructs, shaped by context and assessed by social comparison

Envy

- Social comparisons are ubiquitous and provide information about: 1) Which goals are valuable 2) What performance level to strive for 3) Relative social ranking and status
- BUT comparison can produce envy and, consequently: 1) Feelings of inferiority 2) Lowered self-esteem, efficacy 3) Impaired goal-setting, planning

Career Self Management

- A future oriented, strategic decision-making activity
- Multiple proactive behaviours: self-appraisal; information-gathering; goal-selection; planning; problem solving; anticipating; striving

Study 1

Inter- and intra-group envy

- **Envy**: Participants completed two separate comparison tasks thinking of a classmate (intragroup) or students from a competing business school (intergroup)
  - Completed intra- and intergroup envy scales
- **Future Self**: Cantril's Self Anchoring Scale (1965)
  - 'On which step of the ladder to you think you will be 5 years from now?'
- **Results**: With both envy scales in the analysis:
  - Intragroup envy was negatively associated with position on the Cantril Self Anchoring Scale ($\beta = -1.16$, $t(43) = -1.75$), $p = .09$)
  - Intergroup envy was not significantly associated with position

Study 2

Test of the mediation model

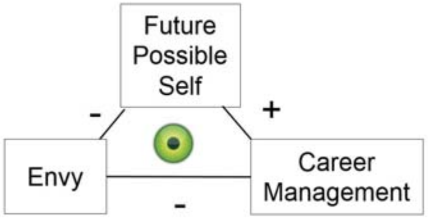
- Participants: undergraduate business students in a second year core course (N = 119; 68 female, 51 male; mean age 18.8, SD = .48)
- **Survey Wave 1**
  - **IV**: the envy prompts and measures (same as study 1)
  - **MED**: Possible self measure
    - o Write about future work self
    - o 'How vividly can you imagine your future self'
  - **Control:** Labile self esteem
- **Survey Wave 2**
  - DV: Proactive Career Behaviours (PCB)
    - o Skill development; networking, career planning, and advise seeking or consultation
  - DV: Career Decision-Making Self-Efficacy (CDMSE)
    - o Information gathering; Goal selection; Making plans; Problem solving

STUDY 2 RESULTS

	Positive Future Self				Proactive Career Behavior				CDMSE			
	B	t	LLCI	ULCI	B	t	LLCI	ULCI	B	t	LLCI	ULCI
Envy Log10	-.753†	-1.74	-1.47	-0.04	-.637*	-2.4	-1.08	-0.2	-.610**	-2.81	-0.97	-0.25
Labile Self Esteem	0.004	0.04	-0.15	0.16	-0.057	-1.02	-0.15	0.04	-0.053	-1.14	-0.13	0.02
Sex (0 = ♂; 1 = ♀)	-0.042	-0.22	-0.36	0.27	-0.189	-1.65	-0.38	0	-.251**	-2.67	-0.41	-0.1
Positive Future Self					.114*	2.02	0.02	0.21	.095*	2.04	0.02	0.17

Indirect effects: PCB $\beta = -.09$, 95% LLCI = -.30, ULCI = .00
CDMSE $\beta = -.07$, 95% LLCI = -.23, ULCI = .00

THE MEDIATION MODEL



Take away message

- Students' successful job placement represents a return on a significant investment made by themselves, their families, the educational institution, and society
- The academic environment and job search processes can be very competitive
  - A context of frequent social comparisons and potential envy
- Envy may be greater when the envied person's outcomes seem within reach
- BUT envy may impede success by eroding future possible selves, thereby reducing confidence, efficacy, and certainty about means to succeed

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The Digital-Industrial Complex

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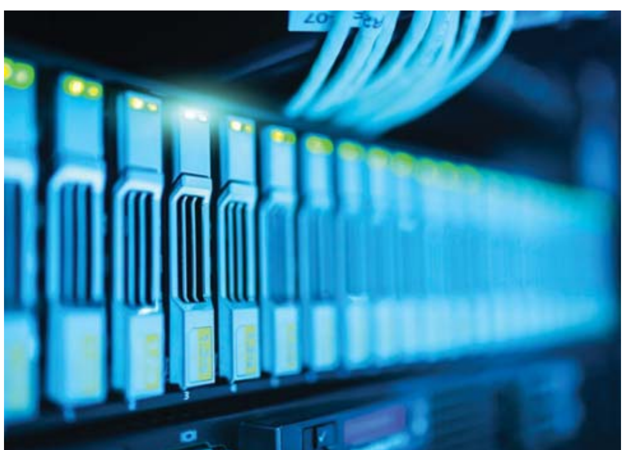
Introduction

- Referring to Eisenhower's coining of a 'military-industrial complex': "an informal alliance between a nation's military and the arms industry which supplies it, seen together as a vested interest which influences public policy.
- Digital-Industrial Complex (DIC): A group of companies (including part of companies) whose primary input resource is data. It creates value with goods and services based on a recombination of these data. The DIC can be thought of as a distinct industry with companies specifically dedicated to just the data aspect, but it is also part of virtually every other industry. The DIC has intricate, part open, part covert relations to governments and is related to governments by deep mutual interdependencies and mutual interests, some shared, some adversarial

Research Questions

- What are the social implication of the Digital-Industrial Complex?
- How do these companies handle their responsibilities with regard to privacy, transparency and accountability?
- How do companies like Facebook, Google or Twitter interfere with the democratic process in liberal democracies, and what should be their commitments, constraints, and responsibilities?



Methodology

Data:

- Document Analysis
- Qualitative data collection
- Big Data:
  - Scale of data collection
  - Algorithmic combination of data
  - Almost exclusively controlled by private sector companies

Three levels of analysis:

- Upstream (i.e., data generation)
  - Consent, Surveillance
- Manufacturing (i.e., data processing and aggregation)
  - Generation of metadata
- Downstream (i.e., data usage)
  - Privacy
  - Questionable applications (e.g. Snapchat)
  - Creation of the 'digital self' (Belk, 2013)

Findings and Discussion

- 'Datacapitalism': change in the nature of firms (Davis 2016)
  - From careers to jobs (Uber: 2000 employees, 160.000 driver)
  - Income inequality
  - Philanthropy vs welfare state
  - Management culture ('move fast and break things')
- Regulatory oversight
  - US: Laisser faire
  - EU: Attempts at containment
  - China, India: state capture and control
- Industry Structure and Implications:
  - Very nature of the business makes monopoly the only successful market structure
  - With data as key resource, successful DIC businesses can only offer limited degrees of privacy, transparency, and accountability
  - The products of DIC companies have assimilated public goods, hence they are political in their core product governance (rather than side effects)
    - o Free speech
    - o Democratic processes
  - Hybrid forms of private governance so far have had limited success (ie Global Network Initiative)

Take away message

- This is a new industry that changes our existing understanding of the nature and the boundaries of corporations
- The core values of this industry change our notions of basic values of liberal democracies, of what a corporation is, and what is the role of business in core functions of democratic societies?

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Racialized Myth Markets and Stigmatized Consumers: Insights from a Multisited Ethnography of “Gypsies”

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Introduction

- Previous consumer research has investigated the various strategies, practices, and performances different stigmatized consumer groups use in order to resist devaluing marketplace myths (Arsel and Thompson 2011) circulating throughout popular culture caricaturing their consumption communities.
- Overall, these studies demonstrate how mainstream commercial stories can disparage and degrade (rather than uplift and praise) non-mainstream consumer groups ranging from hipsters to East Germans to stay-at-home fathers to LGBTQ individuals to black middle-class Americans, which in turn, lead these consumers to defend, demythologize, and destigmatize their consumer choices and behavior.

Research Question

- Are all stigmatized consumers in a position to defend themselves from marketplace stigma?

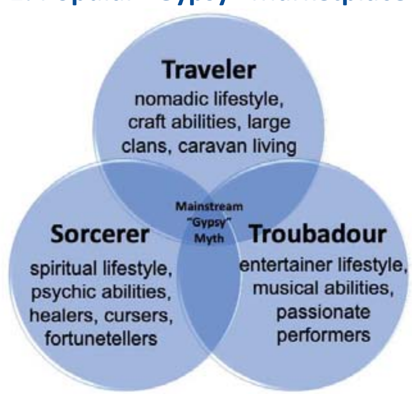
Results

- We uncover a marketplace phenomenon where one of the most racially stigmatized consumer group worldwide, disparagingly called “Gypsies” but self-denominated as Roma, enact rather than resist dominant devaluing marketplace “Gypsy” myths to ensure their group’s economic survival.
- Specifically, we unpack the market-mediated race reiterations through which impoverished transnational Roma across Europe and North America further commercialize three Western mainstream marketplace myths about “Gypsies” (the Traveler, the Mystic, and the Troubadour) in what we conceptualize as a racialized myth market.

Method

- **Ethnographic Data:** field notes, photos, videos, 41 in-depth interviews with Roma communities in Romania, Germany, and Canada
- **Historical Data:** expert materials, policy documents, mass media reports on Roma in Europe and North America
- **Marketing Data:** brand logos, entertainment products, advertising campaigns, other promotional materials using “Gypsy/ies” words and imagery in Europe and North America

Figure 1: Popular “Gypsy” Marketplace Myths



Discussion

- By critically interrogating how a highly racially stigmatized consumer group enacts rather than resits dominant devaluing marketplace myths for economic survival, we contribute to the literatures on marketplace myths (see Arsel and Thompson 2011 for an overview), marketplace performances (see Üstüner and Thompson 2015 for an overview), and consumer acculturation (see Veresiu and Giesler 2018 for an overview).
- Our findings also extend the racial performativity argument about individuals becoming their own stereotypes by revealing poor consumers’ responses to mainstream devaluing marketplace myths of racialized otherness.

Take away message

- We conceptualize **racialized myth markets** as experiential markets organized around the colonial gaze *of the other* and sustained through marketplace performances *by the other* that perpetuate problematic racial stereotypes and systemic inequalities.

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How Language Shapes Cultural Success

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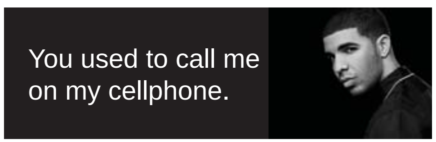
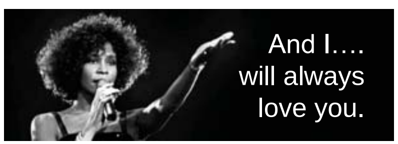
Abstract

- We show that aspects of language in cultural items (e.g. lyrics, poetry, scripts) can be used to predict the item's market success.
- **Project A ("Atypicality")** reveals that songs that are more lyrically differentiated (i.e., atypical) from their genres are more popular, an effect we attribute to the basic human need for novelty.
- **Project B ("Thinking of You")** reveals that songs and literature that use more second person pronouns (i.e., "you" words) are more successful as they activate a personal "other" in the audience's mind.





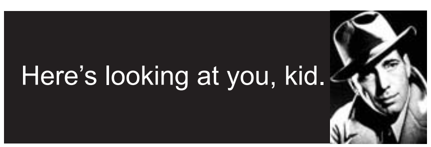


Image sources: imdb.com, pinterest.com, fanpop.com

Research Questions

- Why do some cultural items (songs, literature, movies) catch on?
- Firms make huge investments, but what becomes a hit seems random.
- What basic human needs drive marketplace adoption of cultural items?
- Can we answer these questions using a combination of natural language processing, computational linguistics, and psychological theory and method?

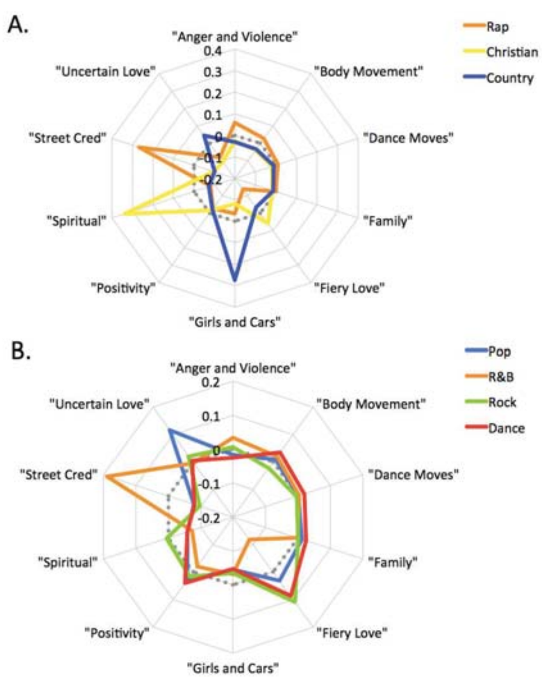
Method

- **Project A ("Atypicality")** analyzed the lyrics and other song attributes from over 4,000 songs ranked in the Billboard charts over 2014-16 using topic modeling (latent Dirichlet allocation; LDA) and regression.

- **Project B ("Thinking of You")** used the same field data set, analyzing it using a variety of NLP methods to identify the basic impact of second person pronouns accounting for a variety of controls and alternatives. Three laboratory experiments replicate the result and examine the causal mechanism and alternatives.

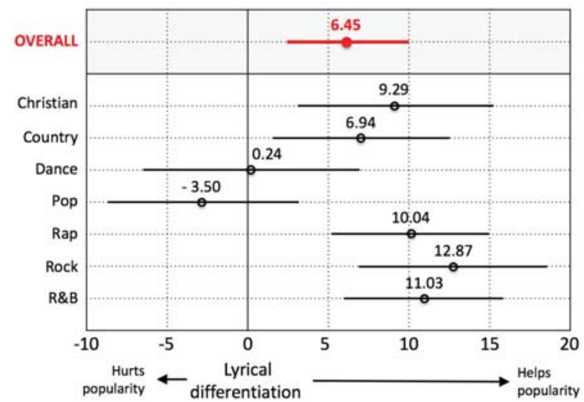
Relative use of lyrical topics by genre

Genres with more (A) or less (B) topical entropy



Results

- **Project A ("Atypicality")** finds that a 16% increase in lyrical differentiation is associated with a one-position gain in chart ranking.
- The effect is weaker where lyrics matter less (Dance) or differentiation matters less (Pop), and is robust to a variety of controls and alternatives.



- **Project B ("Thinking of You")** reveals that "you" words are positively linked to success and liking in music and literature
- The effect is moderated by the situated use of "you" as an other (object: "Shall I compare thee (you) to a summer's day") rather than as the protagonist his or herself (subject: "You better lose yourself").
- Activation of a personal "other" in the listener's own life drives the effect

Conclusions

- Culture-makers may wish to consider how item language shapes popularity in the narrative arts (music, literature, movies, TV)
- We shed light on how language makes meaning, the psychological foundations of culture, and situated factors in language.

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A Blockchain-based Scheme for Voltage Regulation

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[1]Schulich School of Business, York University, Toronto, [2]Department of Electrical Engineering & Computer Science, York University, Toronto, [3]Toronto Region and Conversation Authority (TRCA)

Introduction

- Legacy power distribution networks are rapidly being transformed by the introduction of smart grids, characterized by a greater proportion of renewable distributed energy generation (DG).
- DGs increase efficiency, reliability and reduce harmful CO_2 emissions.
- However, due to the intermittent nature of wind and solar energy, energy from renewable DGs fluctuate, requiring voltage regulation.
- Here we present a blockchain-based energy trading scheme for voltage regulation in a network of agents, each controlling multiple DGs.
- Relying on a blockchain is critical since it is auditable and allows agents to engage in automated trading without requiring mutual trust.

Research Questions

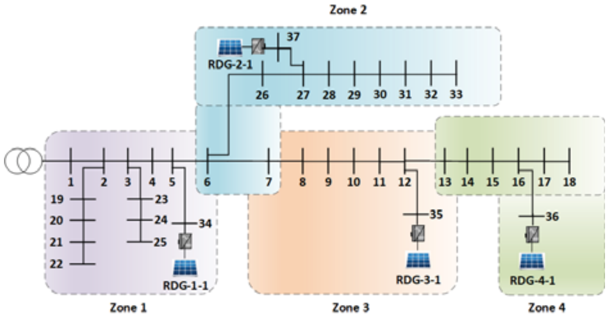
- How can we build a smarter energy grid more adapted to a future of distributed energy generation?
- Can this grid be built without relying on a centralized third party for energy trading?

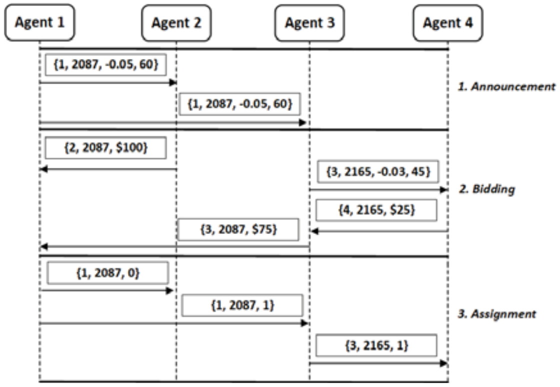
Method

- We used theoretical evaluation and simulations to develop the scheme and address three different scenarios. 1) Undervoltage and detection of a fraudulent transaction, 2) voltage mitigation via subcontract, 3) voltage violations in multiple zones.
- Simulations were run on Hyperledger Fabric, an industry-grade permissioned blockchain developed by the Linux Foundation.

Results

- Agents are assumed to be self-interested, rational, and require economic incentive to provide voltage regulation as an ancillary service.
- Each agent controls a zone containing multiple DGs.
- To incentivize agents to follow protocol, and when necessary, curb their energy production, a reputation rating is introduced. By contributing to voltage regulation an agents rating decreases, positively affecting its revenue.
- Negotiations between agents occur according to the contract net protocol and are implemented as a smart contract, running on a permissioned blockchain.
- When an agent detects a voltage violation, it broadcasts a request on the blockchain. Other agents place bids, and after a set time, the lowest bid is assigned to the request. The agent's reputation rating weights the bids.
- Voltage readings, agent reputation ratings, requests and bids are stored on the blockchain, and assignment and verification are performed automatically by the smart contract.





Discussion

- By utilizing a permissioned blockchain for decentralized energy trading, it is possible to achieve a grid that is more efficient and robust in the face of the voltage fluctuations inherent to renewable energy source s such as wind and solar.
- This has the potential of benefiting both energy producers and consumers, as well as, facilitating the transition from fossil to renewable energy.

Conclusions

- As energy generation is becoming more distributed and with a greater mix of renewable energy, the grid has to become more "smart" to adapt to the new conditions.
- Energy trading between agents controlling distributed energy generation capacity is a step in this direction.

Project is funded by the Ontario Centres of Excellence

Peeking into the Black Box of Infrastructure Investment: Understanding the Direct Infrastructure Investment Mandates of Large Institutional Investors

Sherena Hussain[1], James McKellar[1]

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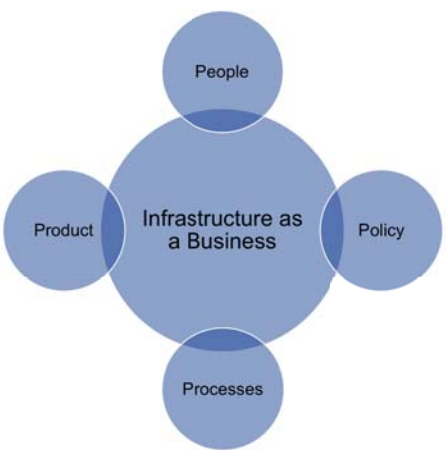
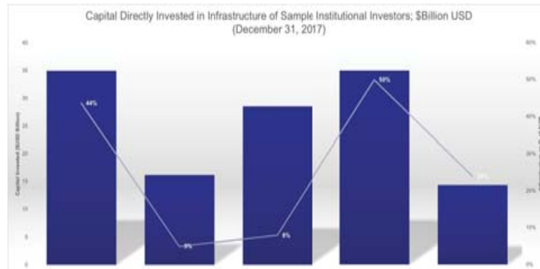
Introduction

- Infrastructure continues to attract interest from large institutional investors (long-term investors including pension plans and insurance companies) as a separate asset class or part of a real asset class within investment portfolios.
- In the past decade there has been a significant expansion in capital raised and invested (as debt and equity) in global infrastructure.
- There has been a parallel expansion in the expertise and activity of direct infrastructure investment among large institutional investors, resulting in a reduction in the use of investment funds to invest capital on their behalf.

Research Questions

- What are the investment strategies of large institutional investors that directly invest in infrastructure?
- How do large institutional investors create value for their beneficiaries through direct investments in infrastructure?
- What headwinds are potentially impeding institutional investments in large scale infrastructure projects?



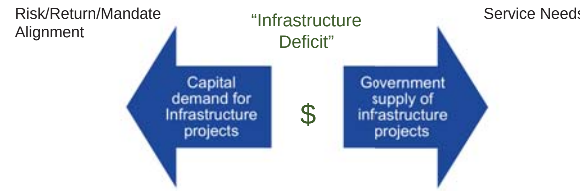


Method

- Interviews were conducted with managing partners and leaders of global infrastructure investment teams at large public and private institutional investors from G7 countries that directly invest in global infrastructure.
- Interviewed institutional investors collectively invested $129.2 billion USD in infrastructure and have over $3 trillion USD AUM (as of 2017) .
- Interviews were supplemented by secondary research evaluating investment mandates, infrastructure project profiles, asset management teams, and investment climates.

Results and Impact

- Direct institutional investors increasingly view infrastructure as operating businesses rather than a passive source of cash flow.
- Greater competition among large funds to invest in infrastructure projects with attractive risk profiles has compressed investment returns, resulting in greater emphasis on developing distinguishable investment strategies.
- Investment strategies draw upon the perceived strengths of institutional investors that can include investments earlier in an infrastructure project's lifecycle.
- Public Private Partnerships (PPPs), while promoted by governments as a solution to delivering critical infrastructure, accounts for a small percentage of infrastructure portfolios among direct large institutional investors.



Reducing the 'infrastructure deficit' to a monetary figure masks the misalignment of interests involved when attempts are made to connect capital to infrastructure projects, especially through Public Private Partnerships

Discussion

- The maturity of infrastructure as a perceived asset class has incentivized large institutional investors to craft competitive investment strategies.
- Strategies do not relate to raising capital; They relate to the deployment of capital in a manner that satisfies i) risk/return mandates, and ii) broader institutional goals.
- Developing strategies related to relationships, policy evolution, product offerings and internal and government policies, including regulatory and tax regimes, are key to managing infrastructure as successful businesses.

Take away message

- Access to capital is no longer a competitive advantage for large institutional investors directly investing in global infrastructure projects.
- Investment strategies are crafted to draw upon an institution's long-standing advantages such as location premiums, operational capabilities, and qualified talent located in targeted markets.
- Large institutional investors are increasingly seeking to be involved earlier in the creation of infrastructure programs to facilitate the investment of private institutional capital. This may alter risk/return premiums globally.

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Short Interest and Investment

Gustavo Grullon[1], Yelena Larkin[2], Alexei Zhdanov[3]

[1]Rice University, Texas, USA; [2]Schulich School of Business, York University, Toronto, Canada; [3]Penn State University, Pennsylvania, USA

What is Short Selling?

- Short selling – betting on prices going down
- Short seller can profit from security declines even if he doesn't own it
- Short interest – amount of outstanding short selling positions

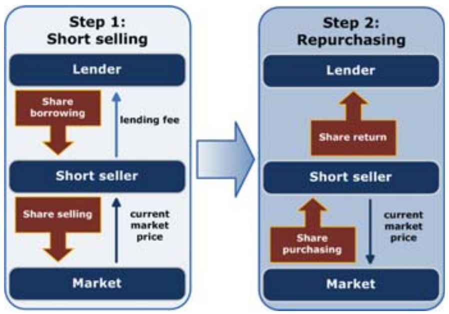


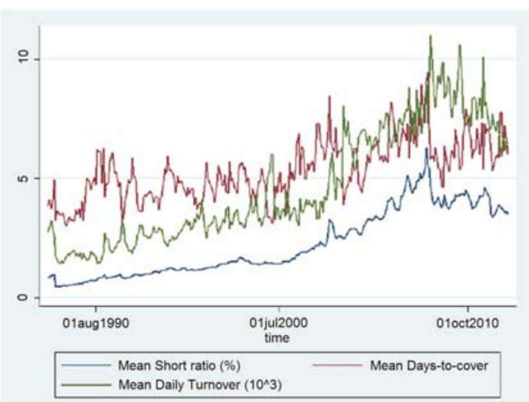
Image source: Wikipedia.org

Research Questions

- **Does short selling affect investment decisions of managers?**

Motivation:

- Existing literature shows that managers learn from financial markets
- Short selling activity has increased substantially over the past two decades (Hong et al. (2015) – see below):



Method

- Estimate panel regression of investment (*I*) of firm *i* in year *t* as a function of short interest (*SI*) at *t*-1, as well as control variables:

$$I_{i,t} = \alpha + \beta SI_{i,t-1} + \delta X_{i,t-1} + \eta_i + \nu_t + \varepsilon_{i,t},$$

- Control for:
  - Size
  - Investment opportunities (Market-to-book)
  - Profitability
  - Firm and year fixed effects

Results

- Short interest has a negative and statistically significant impact on future investments
- The results are robust to:
  - Alternative definitions of short interest
  - Alternative definitions of investment
- Endogeneity tests:
  - The impact of short interest is stronger after the passage of Reg SHO reform that has reduced short selling constraints

Table 1: Main results

	(1) Capex/PPE	(2) (Capex+R&D)/AT	(3) Δ(AT)
M/B	6.253^{***}	2.001^{***}	9.017^{***}
	(0.369)	(0.101)	(0.445)
CF	0.338^{***}	-0.017	0.146^{***}
	(0.028)	(0.012)	(0.030)
log(Assets)	-5.783^{***}	-2.403^{***}	-14.986^{***}
	(0.437)	(0.202)	(1.022)
SI/shares	-0.264^{***}	-0.088^{***}	-0.414^{***}
	(0.086)	(0.021)	(0.070)
N	68974	69100	69100
adj. R^2	0.33	0.69	0.23

Image source: *Wall Street Journal*

Discussion

- The channel at work: managerial learning
- Short interest is a negative signal of future prospects
- The results are stronger when:
  - The firms are more opaque – more opportunities to learn
  - The short selling signal is more precise

Take away message

- Managers do not know everything about their firms
- Financial market information can be helpful in understanding future investment opportunities
- Managers learn from short sellers' activity and adjust their investment accordingly

Acknowledgements: Project was funded by SSHRC 2017 Insight Development Grant

Devising Quantum Machine Learning Algorithms for FinTech Applications

Zhepeng (Lionel) Li, Wen-Yang Ku

Schulich School of Business, York University, Toronto, Canada

Introduction

- Developing machine learning (ML) methods in Fintech encounters noisy and imbalanced data. The volume of data is sometimes insufficient to train complex learning models such as neural networks.
- Ensemble methods are widely adopted for data limitations in industry applications, but they focus either on improving the bias or the variance.
- We propose a novel hybrid quantum-classical machine learning (QCML) algorithm, aiming to address both the bias and the variance issues due to limited dataset.
- Our method proposes a combinatorial optimization problem for ensemble training, which is then solved with the quantum annealer, a unique type of quantum computer specialized for quantum optimization.

Research Questions

- How do we devise a hybrid quantum-classical ML algorithm to improve current ML methods?
- When being used to tackle risk identification problem in FinTech applications, to what extent can it boost the business performance?

The Quantum Advantage

Our method achieves faster training and better predictive accuracy than classical optimization methods by proposing a quantum algorithm running on real quantum computing device.

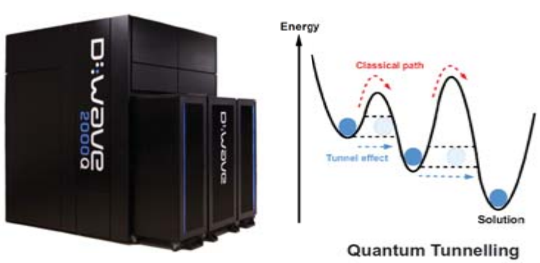


Figure 1: Quantum computing to address optimization problems

Method

Step One: Construct a strong learner by solving a quantum optimization problem to select the optimal set of decision tree regressors as follows.

$$\boldsymbol{w}^* = \underset{\boldsymbol{w}\in\{0,1\}^N}{\operatorname{argmin}} \sum_{i=1}^{M} \left(\boldsymbol{w}^T \boldsymbol{f}(\boldsymbol{x}_i)/N - y_i\right)^2, \qquad (1)$$

where x_i and y_i are the i-th instance and the true label in the training set, respectively. The function $f(x_i)$ denotes the vector of the output from the N decision trees. The resulting strong regressor is therefore $F(x_i) = \frac{w^T f(x_i)}{N}$.

Step Two: Incrementally add more sets of weak learners to further improve accuracy. The algorithm is presented in Algorithm 1.

Algorithm 1 The QCML algorithm

initialize $h_i^{(0)} = 0$ for $i = 1, 2, \ldots, M$.
for $k = 1$ to K **do**
  Let $y^{(k)} = -\partial L(\boldsymbol{h}^{(k-1)})/\partial h_i$.
  Construct N weak regression trees to predict $y^{(k)}$.
  Construct ensemble learner $F^{(k)}$ from the regression trees by solving Equation (1).
  Let $h_i^{(k)} = h_i^{(k-1)} + \eta F^{(k)}(\boldsymbol{x}_i)$ for $i = 1, 2, \ldots, M$.
end for
return $F(\boldsymbol{x}) = \sigma\left(\eta \sum_{k=1}^{K} F^{(k)}(\boldsymbol{x})\right)$.

The performance of the proposed algorithm (i.e., QCML) comparing to the state-of-art machine learning algorithms are shown as below

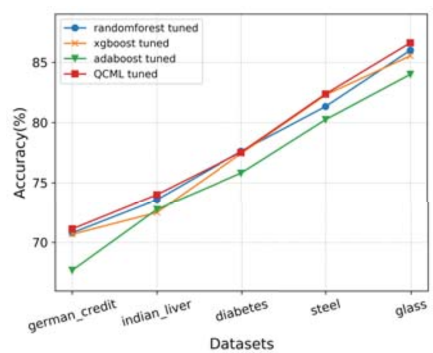


Figure 2: Average model accuracy after hyper-parameter tuning

The Credit Loan Problem

We implement the proposed hybrid quantum-classical machine learning method to identify high/low risk borrowers for credit loan business. The goal is to decrease the default rate of high risk borrowers, thus to boost profitability.

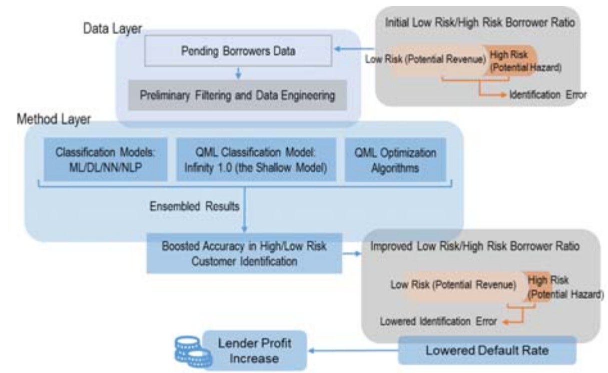


Figure 3: QML Optimized Risk Identification System

Results and Findings

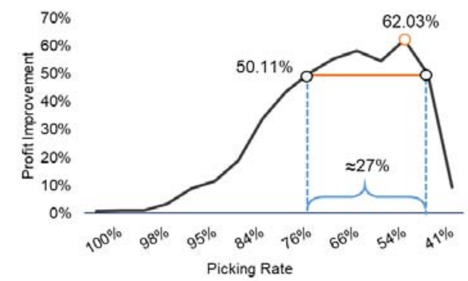


Figure 4: Profit Improvement over picking rates

Our approach has significantly outperformed the scoring system currently in use. Our model trades off between the number of eligible borrowers and their default rate. When it successfully improves identification accuracy, we can adjust this risk model in a wide range where business profit is lifted considerably. Our results show a plateau of performing area covering approximately 27% in the picking rates. The highest profitability improvement is by 62.03% at the picking rate of 53.78%.

The Earnings 'Performance': From Ritual to Meaning

Matt Bamber[1] & Santhosh Abraham[2]

[1]Schulich School of Business, York University, Toronto, Canada, [2]McAfee School of Business, Union University

Abstract

Employing extensive fieldwork data and drawing on theories of liminality, this article proposes a conceptualization of firms' results day earnings presentations as symbolically-mediated rituals of performance. We argue that these investor-manager meetings function as threshold-crossing devices, guiding a meaningful transition from a *before earnings* to an *after earnings* state. Analysis of our data shows that earnings presentations (re-)instate order during moments of information uncertainty and investment decision-making ambiguity. Furthermore, they function as ceremonies of closure. Management engage in these costly, unsettling, and disruptive calendrical rituals to achieve consensus around certain key themes among the *star-group*. We propose that our Turnerian-influenced conceptual framework can be usefully employed as an analytic lens to better understand similar interactive workplace encounters. In so doing, we make a case 'for meetings'.

Research Questions

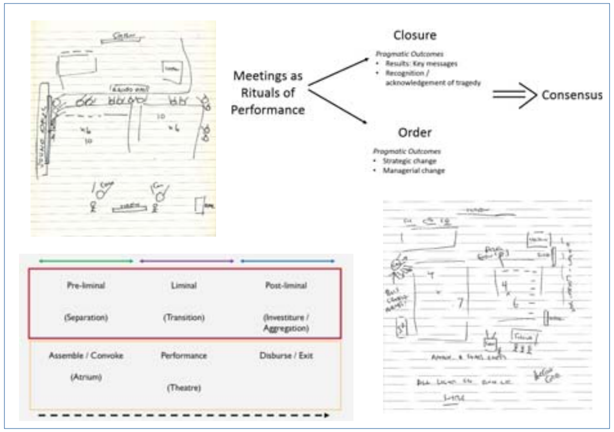
- Our study is motivated by two research questions:
  - First, we ask what motivates and incentivizes management to engage in these costly, unsettling, and disruptive events
  - Second, adopting an anthropological perspective, we address whether, and if so why, these ostensibly economic encounters are transformed into meaningful rituals of performance.

Method

- We adopt an ethnographic (netnographic) data collection and analysis approach
- Observations of face-to-face results presentations, physically (17 companies) and virtually (<500 meetings)
- Interviews with key stakeholders, including:
  - 35 Senior Managers
  - 12 Investor Relations teams
  - 24 Analysts

Results

- Earnings presentations function as performance rituals, and function as liminal encounters.
- Throughout the event, the audience is encouraged to cross various physical and psychological thresholds.
- The intended result on the part of the management team is to bring the assembled analysts to a position of consensus.
- Management recurrently and repetitively engage in key rituals of closure and order.



Discussion

- Liminality is a useful analytic lens to better understand the nature and purpose of face-to-face meetings
- Investor-manager encounters are frequently studied through a narrow neo-classical economic lens, but this ignores their social and political purposes.
- For management, the potential costs of engaging in these unsettling encounters is that they can be transformatively persuasive performance rituals.
  - In a world where analysts' research matters, and consensus amongst analysts is highly desirable, these threshold-crossing events are significant.

Take away message

- We challenge the dominant view in the literature which holds that public meetings are symbolic rituals, with scant real or pragmatic outcomes.
- Whilst this might be true in some cases, meetings such as results presentations are meaningful, and appear to represent management striving to establish a consensus around a set of self-designed key messages.
- Furthermore, management engage in key rituals of closure and order.

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Generous Spirits: Sacred Economies, and the Upscaling of Canadian Whisky

Hovig Tchalian[1], Maxim Voronov[2]

[1]Peter F. Drucker and Masatoshi Ito Graduate School of Management, Claremont Graduate University, Claremont, California, USA. [2]Schulich School of Business, York University, Toronto, Canada,

Introduction

- Human experience is increasingly commercial and impersonal. Even intimate spaces like our homes and cars are available for commercial use by Airbnb and Uber. In response, people desire more sacred experiences. Products, like "craft beer" and grass-fed beef, and so on, capitalize on the concept of craft to elevate the act of consumption from a merely commercial transaction to a sacred exchange.
- We argue that the successful positioning of a brand or product category as "craft" requires *category consecration*, via management of boundaries, and content of the category through material and symbolic tools.

Research Question

- What social and material practices do organizations employ in consecrating low-status categories as upscale "craft" ones?
  - Put differently, how can commercial ventures like whisky distillers infuse the ennobling spirit of craft into a clearly commercial product category?

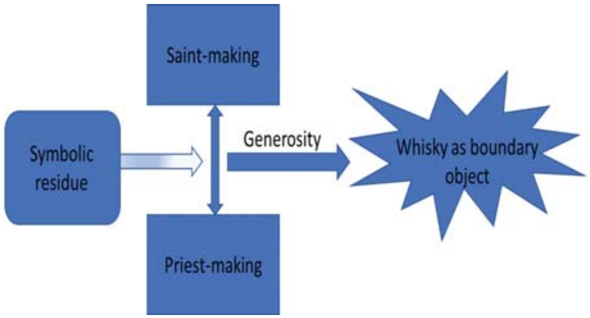
Method

- Canadian whisky industry among the oldest (starting in 1700s) and most distinctive whisky segments. Failed to respond to upscaling moves by rival whisky producing regions, resulting in reputational damage and low status.
- We examine the efforts of Canadian whisky producers to elevate Canadian whisky from a low-status "budget" category to a high-status craft product category.
- Inductive qualitative study: 2015-present: 90 interviews; 300 hours of observations; documents; media coverage.

Results

- **Generosity:** Whisky tradition and expertise embodied in products that are sacred texts.
- **Saint-making:** Whisky makers sacrifice for their craft and for a community of devout followers.
- **Priest-making:** Creating valued connoisseur identities for those who can interpret and evangelize for whisky.
- **Boundary object:** Whisky builds relationships: producers to consumers; consumers to consumers; consumers to history and culture.

Whisky as a sacred gift



Discussion

- Placing a brand within the craft category places it within a process of sacred exchange.
- Important to study organizations organize their activities, methods and practices, not just how they talk about them.
- We open inquiry into neo-sacred economy: producers and consumers seek to elevate economic exchanges as virtuous and socially good.

Take away message

- "Craft" is not an objective term. The way we think about 'craft' is the result of a long and deliberate process of making it so. That process is value-driven and cannot be dissociated from its commercial motives.
- Appropriating prestige from high-status categories primarily through rhetorical claims is insufficient. Our research suggests that consecrating a category like whisky is not the result of rhetorical reconstruction, or talk, alone; it is the result of a more fundamental change in the relationship between commercial and social practices.

Acknowledgements:
The project was funded by Social Sciences and Humanities Research Council

Disentangling the Impact of Indirect Network Effects on Platform Growth

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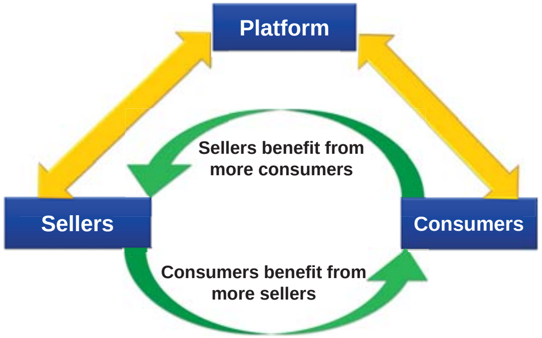
Introduction

- In 2018, **seven of the top 10** firms were platform-based businesses like Amazon, Facebook, with a market cap of **$4.7 trillion**
- Indirect network effects are the engines for platform growth and arise when actors on one side of a platform (e.g., consumers) benefit from the size and characteristics of the other sides of the platform (e.g., sellers)
- Indirect network effects can be asymmetrical
  - For newspaper platforms, advertisers benefit from more readers but readers do not always benefit from more advertisers
- Little scholarly attention has been paid to the symmetricity of indirect network effects and how it influences platform growth

Research Questions

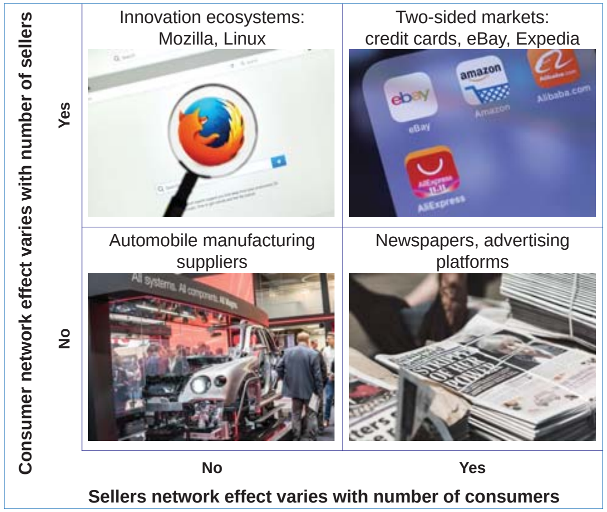
- How do asymmetric indirect network effects influence platform growth?
- How do the relative levels of membership benefits and usage benefits influence platform growth in cases of symmetric and asymmetric network effects?



Indirect Network Effects

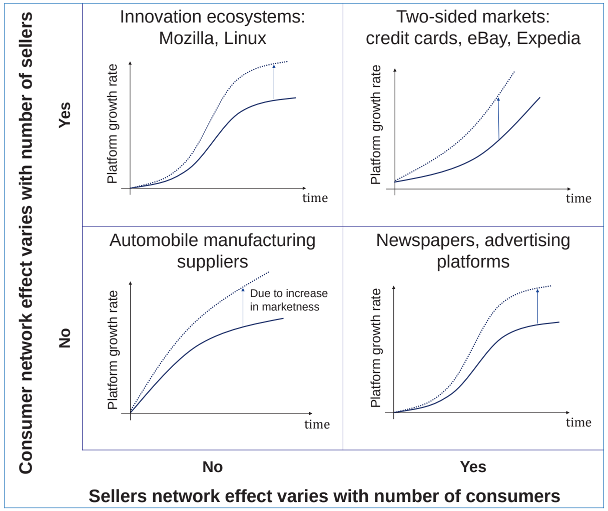
Method

- We use mathematical modelling and logic to identify tradeoffs and key relationships, accompanied by theory of network externalities to substantiate model assumptions and explain model implications



Results

- Platform growth trajectories depend on the symmetricity of indirect network effects
  - Symmetric indirect network effects increase the growth rate
  - Asymmetric indirect network effects correspond to an S-shaped growth trajectory
  - No indirect network effects diminish the growth rate
- Indirect network effects are impacted by the level of marketness – a proxy for the relative levels of membership benefits (value from availability of other actors) and usage benefits (value from transacting with other actors)
- Growth rates increase with higher marketness levels if usage benefits exceed membership benefits for at least one of the platform sides



Discussion

- The influence of indirect network effects on platform growth depends on its directionality and symmetricity
- Marketness of a platform can be used as a tool by the platform sponsor to augment or diminish the platform growth rate
- Platform sponsors' strategies should be aligned with the platform's position on the growth trajectory and the corresponding time thresholds

Take away message

- Platforms differ in the underlying dynamics of indirect network effects and thus have different growth trajectories
- Irrespective of the underlying dynamics, marketness can augment (or diminish) the growth rate when at least one side derives more (or less) usage benefit than membership benefit

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Discovery vs. Repositioning: An Empirical Study of Time Allocation Contingencies in Drug Development

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[3] Department of Strategic Management & Entrepreneurship, Rotterdam School of Management, Rotterdam, The Netherlands

Introduction

- Bringing a drug from invention stage to pharmacy shelves costs an estimated **$2.7 billion**
- **90%** of new drugs in development worldwide do not reach the market because they are either unsafe or ineffective
- The industry recognizes the added value of drug repositioning (a.k.a. repurposing or reprofiling) as an alternative
  - Repositioned drugs must pass clinical tests for efficacy, but not safety, although safety concerns account for **30%** of drug failures
  - They require **1/2** the time and **1/3** of the cost to develop

Research Questions

- With repositioned drugs accounting for **30%** of all drugs approved in a year and **three to four** drug repositioning firms emerging every year to reap the benefits

What is the ideal time ratio for exploring new drug discoveries vs. exploiting and repositioning existing drugs?

- Literature remains silent on the ideal balance between exploration and exploitation activities, and how much time firms should allocate to the two competing activities

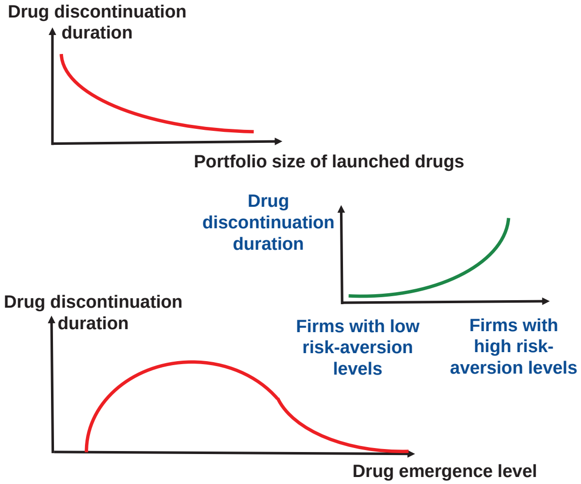
White background images used with kind permission of Drug Discovery World

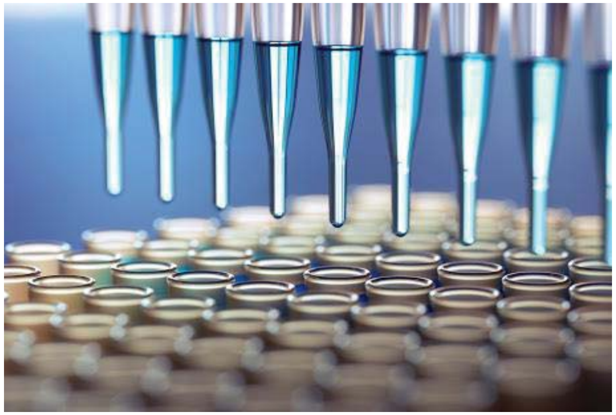
Method

- Mathematically model and empirically test how firms *should* and actually *do* allocate time to exploring a new drug discovery project, beyond which the project is discontinued so that time is better spent on exploiting previously approved drugs for repositioning
- Hypothesize how the exploration-exploitation balance may be impacted by changes in:
  - Number of existing approved drugs available for exploitation
  - Emergent nature of the explorative activity
  - Firm's level of aversion to risk
- Test the hypotheses on a sample of 1,382 new drug-development projects in biotechnology and pharmaceutical firms worldwide

Results

- The larger a firm's launched drug portfolio is, the shorter is the discontinuation duration of the explorative drug discovery project
- The explorative drug discovery project's discontinuation duration has an inverted U-shaped relationship with that project's emergence level
- Regardless of the emergence level of the explorative drug discovery project, the relationship between a firm's risk-aversion level and the project's discontinuation duration is positive, such that a high risk-averse firm has a longer discontinuation duration than a less risk-averse firm





Discussion

Policymakers should:

- Incentivize firms to persist on developing high-risk emergent drugs such as those for rare diseases also knowns as orphan drugs
- Develop incentives and other programs that promote industry and academia collaboration, especially for firms with large portfolios of previously discontinued drugs
- Develop initiatives that give access to patient information, as increasing the transparency and information channels between patients, doctors, and biotechnology and pharmaceutical firms could help make drug repositioning even more attractive

Take away message

In the drug development context, the best balance between exploration and exploitation is <u>not</u> necessarily the recommended 50-50 split, but it is contingent on project- and firm-level characteristics

50/50?

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Towards a Theory of Strategic Insurgency: From Disruptive Innovation to Entrepreneurial (Dis)advantage

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Challenge We Address

- Identify sources of firms' competitive advantage in the modern era of disruptive innovation
- From Industry Positioning:
  - Incumbents out-compete their rivals by specializing in industry areas with attractive market forces to define the competitive field *status quo*
- From Dynamic Capabilities View:
  - Through agility in resource deployment in high-velocity environments, new entrants can win by developing insurgent capabilities to disrupt the *status quo*

Research Question

- **Under what conditions will insurgents with *status-quo*-disrupting capabilities win against incumbents with *status-quo*-defining powers?**
- Disruptive innovation puts pressure on:
  - *Incumbents*, as it can render the *status-quo*-defining powers obsolete
  - *Insurgents*, as developing the *status-quo*-disrupting capabilities is often an expensive exercise with no promise on return
- Theories of competitive advantage fall short in answering whether disruption leads to entrepreneurial advantage or disadvantage

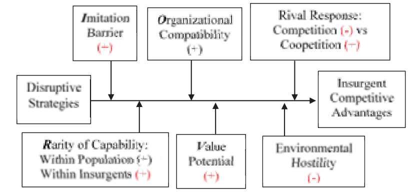
Method

- Consider the disruption- and competition-specific characteristics that delineate firm performances
  - Value potential, rarity, imitation barriers, and organizational compatibility (or VRIO) of insurgent disruptive capabilities
  - Incumbents' competitive or cooperative actions to preserve the *status quo*
- Use a game theoretic framework for interfirm competition
- Build a simulation model that varies incumbent rivalry responses and the degrees of VRIO of insurgent disruptive capabilities

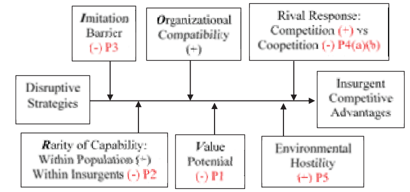
Results

- Insurgents are **more likely to out-compete** incumbents with *status-quo*-disruptive strategies when:
  - Disruptive innovation yields low value potential (P1)
  - Disruptive innovation capabilities are not rare within the insurgent population (P2)
  - Imitation barrier of innovation is low (P3)
  - Rival responses are competition-driven (P4a)
  - Environmental hostility is high (P5)
- However, when rival responses are coopetition-driven, insurgents are **less likely to out-compete** incumbents with *status-quo*-disruptive strategies (P4b)

Extant vs emergent contingency models of strategic insurgency



(a) Extant model based on stylized facts



(b) Emergent model from stimulation findings

Note: red font indicates disagreements between findings and stylized facts

Discussion

- Offer novel insights towards a theory of strategic insurgency to depict how disruptive innovation leads to firm competitive (dis)advantages
- Address a key challenge in theorizing entrepreneurial (dis)advantage in the disruptive innovation era
  - Identify the disruption- and competition-specific conditions that delineate comparative firm performances between incumbents and insurgents

Conclusion

- While some findings agree with extant views, others challenge received wisdom in the literature
- Contribute by contextualizing the central thesis of the classic Industry Positioning and Dynamic Capability Paradigm in the age of disruption

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Longevity Insurance for a Biological Age

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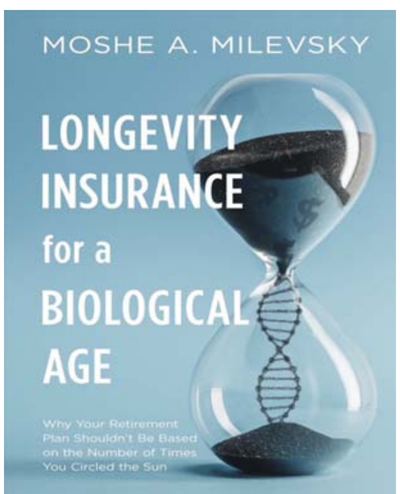
Introduction

- Conventional finance theory, and in particular the classical life-cycle model of investment, saving & consumption, assumes that (i.) age and (ii.) time march in complete lockstep. If you are 45 years-old today, then in 20 calendar years you will be 65 years-old.
- But different people age at different rates, and recent bio-demographic evidence (e.g. using telomere length) suggests your true **biological age** can differ by as much as 10 to 15 years relative to your chronological age.
- This is another way of thinking about mortality heterogeneity.
- For example, in times of epidemics (e.g. the 1918 Spanish Flu) and depending on what country you live in, a (local) 30 year-old can have the same life expectancy as a (global) 70 year-old.

Research Question

- There are a number of immediate implications for the field of household finance, namely (i.) retirement pension policy, (ii.) investment asset allocation strategy, and (iii.) optimal product design. How are they impacted by the fact that you have **two ages**?

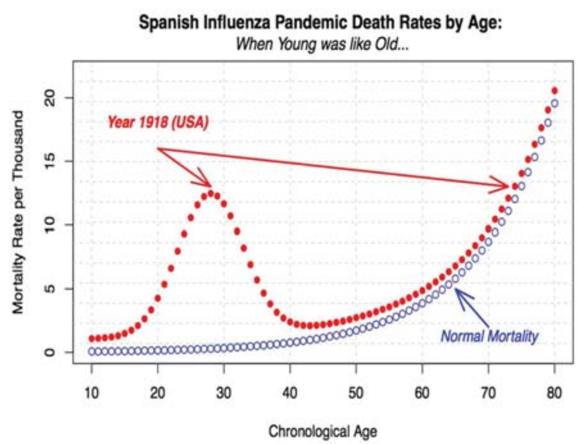


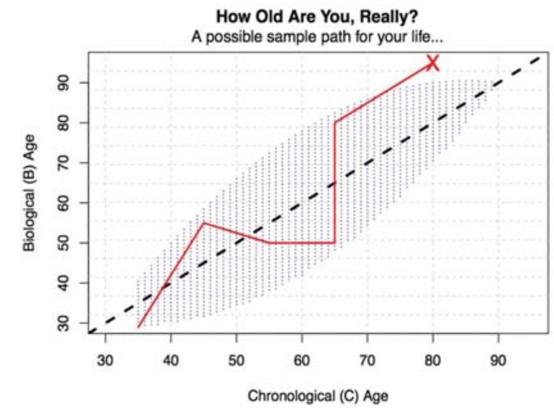
Method

- This research is interdisciplinary, multi-faceted and part of a larger agenda to investigate best-practices for retirement income planning.
- The first step is **statistical & actuarial,** focused on estimating the dispersion between B-Age and C-Age, in various countries and within demographic groups. Namely, we examine the bio-markers of aging.
- The next step is to **mathematically** model the process of aging, within a framework that can be imported into traditional **economic** models.
- The final step is to derive **financial** predictions about how (rational) people behave when they have access to information about their B-Age.

Results

- Implementing the lifecycle model (i.e. a proper financial plan) requires knowledge of both Biological Age and Chronological Age.
- The age at which you retire, start your pension (e.g. CPP) and begin drawing down your nest egg, should account for your Biological Age.
- Your asset allocation and the type of longevity insurance products you own (e.g. annuities and tontines) should depend on Biological Age.





Larger Discussion

- One can make a strong argument that CPP (and other government pension) claiming ages should be based on Biological Age, not your Chronological Age. If you are 65 chronologically, but as young as 50 biologically, should you be entitled to income for the rest of your life? Can governments afford it? Vice versa, if you are (only) 55 chronologically, but as old as 70 biologically, should you have to wait a decade to start the pension. Is that fair? Think of the transfer effect.

Practical Implications

- Regardless of whether governments around the world ever adopt B-Age "thinking" for pension policy purposes, individuals should look beyond their chronological age when making retirement planning decisions. One day – think wearable technology that updates us in real time -- we will identify ourselves by our B-age, not C-age.

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Historic Corporate Social Responsibility

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Introduction

- Increasingly, corporations are held responsible for activities in their value chain extending beyond their traditional corporate boundaries. How can current managers face these critiques and how does the past affect the legitimacy of current business?
- We examine the interaction between the legitimacy of historic CSR claims and corporations' reactions to these claims.
- The resulting contest of narratives between corporations, critics and society over past actions and their current interpretation potentially affects the legitimacy of the corporations themselves.

Research Questions

1. What is the **theoretical basis** for holding a corporation responsible for decisions made by prior generations of managers?
2. What is **the process** by which such claims are raised and contested?
3. What are **the relevant features** that render a charge of historical harm-doing more or less legitimate in the current context?
4. How does **a corporations response** to such charges affect the intensity of the future narrative contests and its own legitimacy?

Results and Impact

- Other things being equal, lesser institutional pressure and greater perceived discretion in the past increase perceptions of claim legitimacy.
- Independent of claim legitimacy it seems that a communicative/open contest usually proves to be of greater benefit to the company.
- The inclusion of historians to analyze a company's legacy alongside a recognition of a past action can at very least separate future events from a troubled past.

Method

1. We begin with the building blocks of CSR & socially constructed legitimacy, with a brief defense of corporations as intergenerational moral actors and, hence, conceptually apt subjects of such responsibility.
2. We then present our theory of historic CSR, including the problematization of the corporate past and the interactions between the legitimacy of the claims about the past and the corporate engagement in present narrative contests.
3. Lastly, we elaborate on implications of historic CSR for managers and scholars.

Table 1: Effects of claim legitimacy and corporate engagement

Legitimacy and Level of Engagement	Type of Contest	Future Intensity of Contest	Effect on Corporate Legitimacy	Example
Limited claim legitimacy/ limited corporate engagement	Latent	Decreasing	Modest	IBM and Nazi Germany
High claim legitimacy/ high corporate engagement	Communicative	High but moderating	Increasing	Volkswagen and Nazi Germany
High claim legitimacy/ limited corporate engagement	Hostile	Increasing	Decreasing	Monsanto and Agent Orange
Limited claim legitimacy/ high corporate engagement	Open	Decreasing	Increasing	Chiquita and Latin America

Discussion

- Organizational scholars discuss legitimacy mainly as a property of (private) organizations, whereas political scientists examine the legitimacy of (public) regulatory regimes.
- Recently both debates have been brought together in the debate on political CSR.
- These scholars have argued that globalization shifts power to private actors who start to assume responsibilities that previously were seen as public or governmental responsibilities, such as he protection of human rights.
- What is the legitimacy of these private solutions?

Future Research

- Responsibilities of critics in problematizing and contesting corporate historical narratives.
- The role of medium as a factor in perceived legitimacy, corporate engagement and narratives [e.g. arts, religious bodies, government laws]
- The individual's complicity in historical injustices
- A focus on emerging issues (e.g., environmental sustainability and human rights abuses) and the organizational and managerial legacies being created today.

Take away message

- As powerful actors, existing in perpetuity, corporations today bear responsibilities resulting from the decisions and actions of past leaders.
- Historians have a key role to play in clarifying both the actions taken by the legacy companies and the "chain of custody" of responsibility for past actions.
- Managers today would do well to consider how their decisions will affect their own and the organization's legacy.

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Supersize My Chances: Promotional Lotteries Impact Product Size Choices

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Introduction

- Many companies annually launch promotional lottery campaigns, where consumers are given a chance to win a prize with each purchase.
- For example, Tim Hortons' *Roll-Up-The-Rim* campaign gives explicit odds of a 1 in 6 chance to win, with the prizes ranging from a hot beverage to a new car.
- Although the chances of winning is objectively the same across offerings, a recent article in the Huffington Post suggests that consumers are purchasing larger products (or 'supersizing') during Roll-Up-The-Rim campaign (Yum, 2013).

Hypotheses

- Consumers will be more likely to purchase the largest product alternative (i.e., supersize) during promotional lottery campaigns than otherwise.
- Supersizing is a means of elevating the perceived chances of winning the desirable, but elusive, grand prize.

Imagine that you are at a Tim Hortons, about to purchase a cup of coffee.

Which cup size do you select?

Our research shows that consumers are 16.4% more likely to select the X-large cup during Roll-Up-The-Rim.

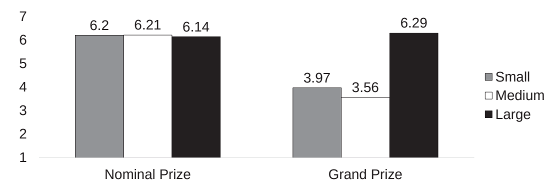
Methodology

- Four main studies (N = 893) and four supplementary studies (N = 592) explored the supersizing phenomenon.
- The studies used real brands (Tim Hortons, Starbucks, Lays), and included participants from different geographical regions (Canada, United States).
- Participants made product size selections either during a promotional lottery campaign or during a time when promotional lottery campaign was not active.
- Participants rated the perceived likelihood of winning either a grand or a nominal prize (anchored: 0 = *not likely at all*, 11 = *very likely*).

Results

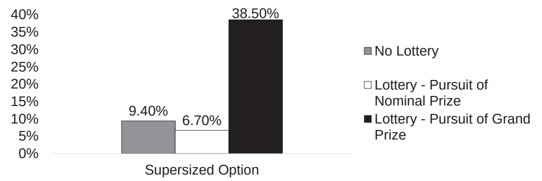
- Promotional lotteries led to an average increase in supersizing of 16.4% (95% CI: 8.84, 24.03).
- Participants perceived a greater likelihood of winning with the supersized option for the grand prize (ps < .001), but not the nominal prize (ps < .97, see Table1).

Table1. *Perceived Likelihood of Winning as a Function of Product Size*



- Consumers were more likely to supersize when pursuing a grand prize than a nominal prize ($\chi^2(1) = 13.48$, $p < .001$), and than when there was no promotional lottery ($\chi^2(1) = 12.19$, $p < .001$, see Table 2).

Table 2. *Choice Percentage of the Supersized Option as a Function of Prize Pursuit*



Our research shows that consumers' interest in the grand prize may nudge them to supersize their orders during Roll-Up-The-Rim campaign.

Discussion

- Promotional lotteries account for over \$1.8 billion in annual marketing expenditures (Smith, 2009).
- Considering that many promotional lotteries occur in a food context, supersizing more during lotteries could be contributing to obesity rates.
- More research is needed to explore whether changing the structure of promotional lotteries can ameliorate this tendency.

Conclusions

- Given that the odds of winning the grand prize is extraordinarily small, it is not surprising that people look to cues that they believe influences the outcomes beyond their reach.
- Supersizing allows consumers to cope with the insurmountable odds associated with the desirable grand prize.

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