Knowledge Diffusion, Employee Mobility and Entrepreneurship

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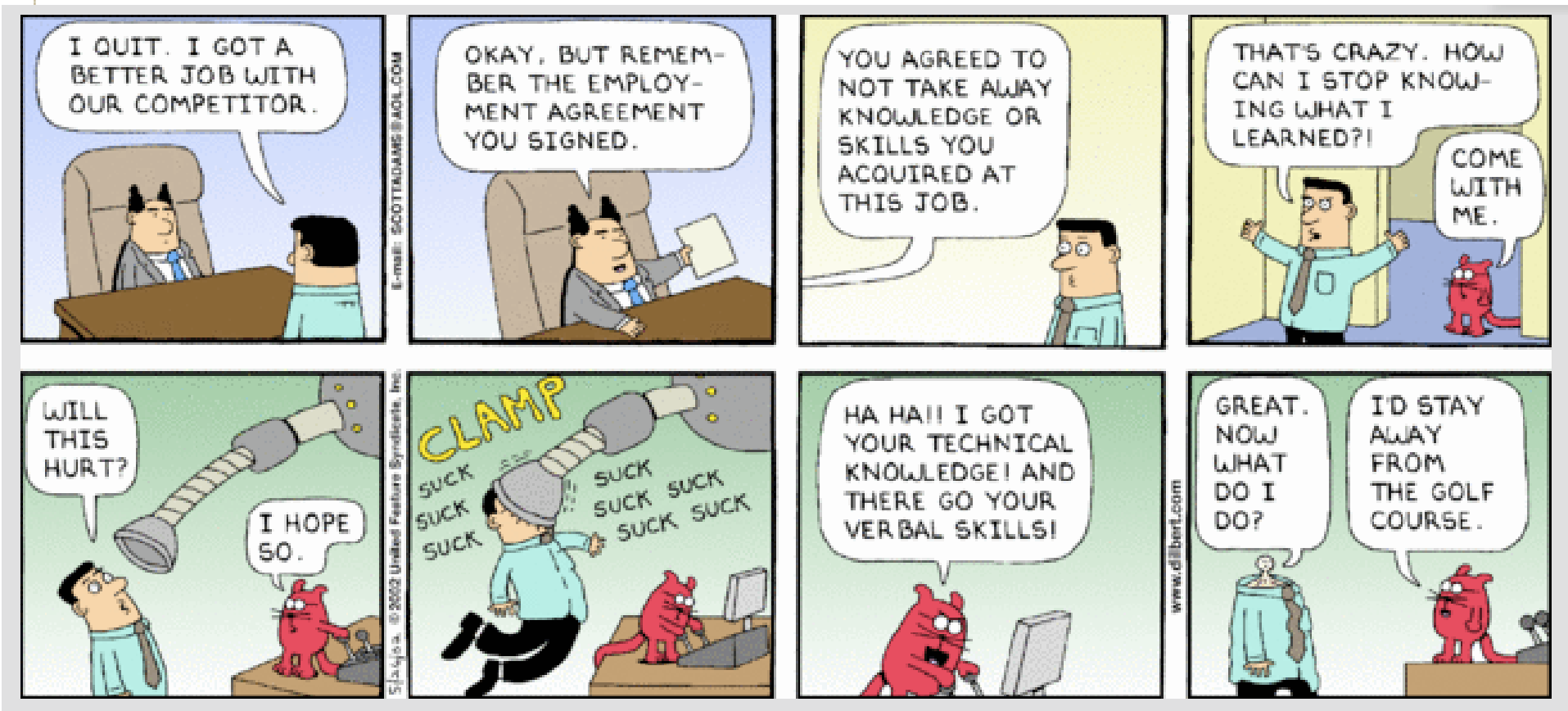
Based on insights on projects with Ben Campbell, Seth Carnahan, Justin Frake, Florence Honore, Martin Ganco and Daniel Olson

What do I take with me?



Main takeaways

- Entrepreneurship is not a destination, but a step in a longer career lifecycle
  - The effect of entrepreneurial firm fates on individual career lifecycles needs more attention
- Future research in this literature will benefit from a focus on human capital *markets*, with an integrated framework
  - Combining demand and supply factors to examine lifecycle choices
  - Embracing selection, as it relates to optimal allocation and reallocation of talent
- Empirically, we need to merge career and knowledge/ innovation datasets to:
  - Identify systematic sources of bias
  - Answer questions that cannot be answered otherwise

Issue #1: Not all turnover is the same…

Spinout

Competitor

Unmotivated Stayer

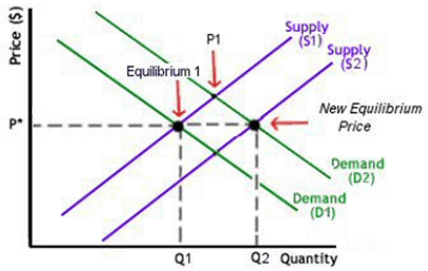
Turnover destinations have unique impacts on careers…

- Entrepreneurship is just one step in a career lifecycle…
- Few studies on how entrepreneurship affects long-term career lifecycles (beyond new venture)
  - Serial entrepreneurs
  - "Boomerangs"
  - Founding team members

- **Research Question**: How do fates of a new ventures affect long-tem career outcomes of entrepreneurs and founding team members?

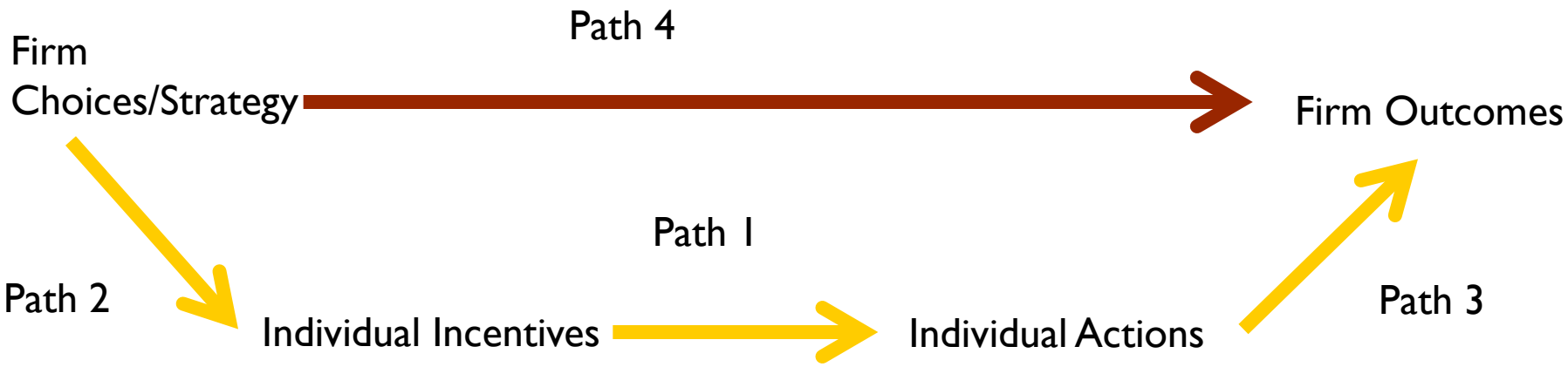
Issue # 2: It's a two-sided market!

- Focus on *product market…*
  - Results in primacy given to demand side conditions
    - E.g. what can firms do to restrict mobility?



- Focus on *individual career choices…*
  - Results in primacy given to preferences and incentives
    - E.g. how do knowledge workers trade-off "taste for science" with monetary incentives?
- Singular focus ignores that "markets need to clear" for human capital in the first place!
  - A need to think through the role of mobility and entrepreneurship in the allocation and reallocation of talent
  - Matching models enable "embracing" selection, rather than *controlling* for selection

Need to apply principles of Coleman's Boat (1990)



- Individual incentives affect individual actions (Path 1)
  - Labor Economics
- Firm choices affect individual incentives (Path 2)
  - Strategy
- Individual actions affect firm and industry outcomes (Path 3)
  - Strategic Human Capital / Human Resource Management
- Firm Choices affect firm and industry outcomes (Path 4)
  - IO Economics and Strategy

Factors affecting mobility and entrepreneurship

Demand Side	Supply Side
Protection mechanisms • Non-competes • IP protection	**Mobility Costs** • Family Ties • Location preferences • Healthcare & Benefits
Collusion/Thin Markets • Competition vs cooperation in firm interaction	**Information Asymmetries** • Knowledge contexts - entrepreneurship by users, employees and academics
Firm Specificity/ Complementarities • Regional policy impacting knowledge flows	**Individual Preferences for Job Attributes** • Security vs. growth / Risk-preferences • Social support programs
Social Complexity • Team-embedded knowledge • Technological complexity • Regional clustering of knowledge	**Individual Preferences For/Against Entrepreneurship** • Taste for autonomy, mastery, purpose

Mobility *and/or* Entrepreneurship

Aligned

Divergent

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Open Questions

- How does two sided matching in the "joiner" human capital pool for entrepreneurial firms affect the hiring and earnings of new employees?
- What are potential frictions or facilitators relating to both career outcomes and fates of the new ventures?
  - Social comparison costs, hometown dynamics, constraints to mobility/entrepreneurship
- How does family composition affect individuals' mobility and entrepreneurship decisions, and the associated wage outcomes?
  - gender implications given correlations with family dynamics

Issue # 3: Empirical Issues: Datasets for development and testing of theory

Criteria	Patents	Census (LEHD)	Proprietary databases
Ease of Access Financial costs Geographic constraints Disclosure constraints Legal/ethical concerns	✔	✖	✖
Measurement False positives False negatives Timing ambiguity	✖	✔	?
Sampling Industry coverage Firm coverage Individual coverage Geographical coverage	✖	✔	?

Need to link Mobility, Entrepreneurship, and Innovation Datasets

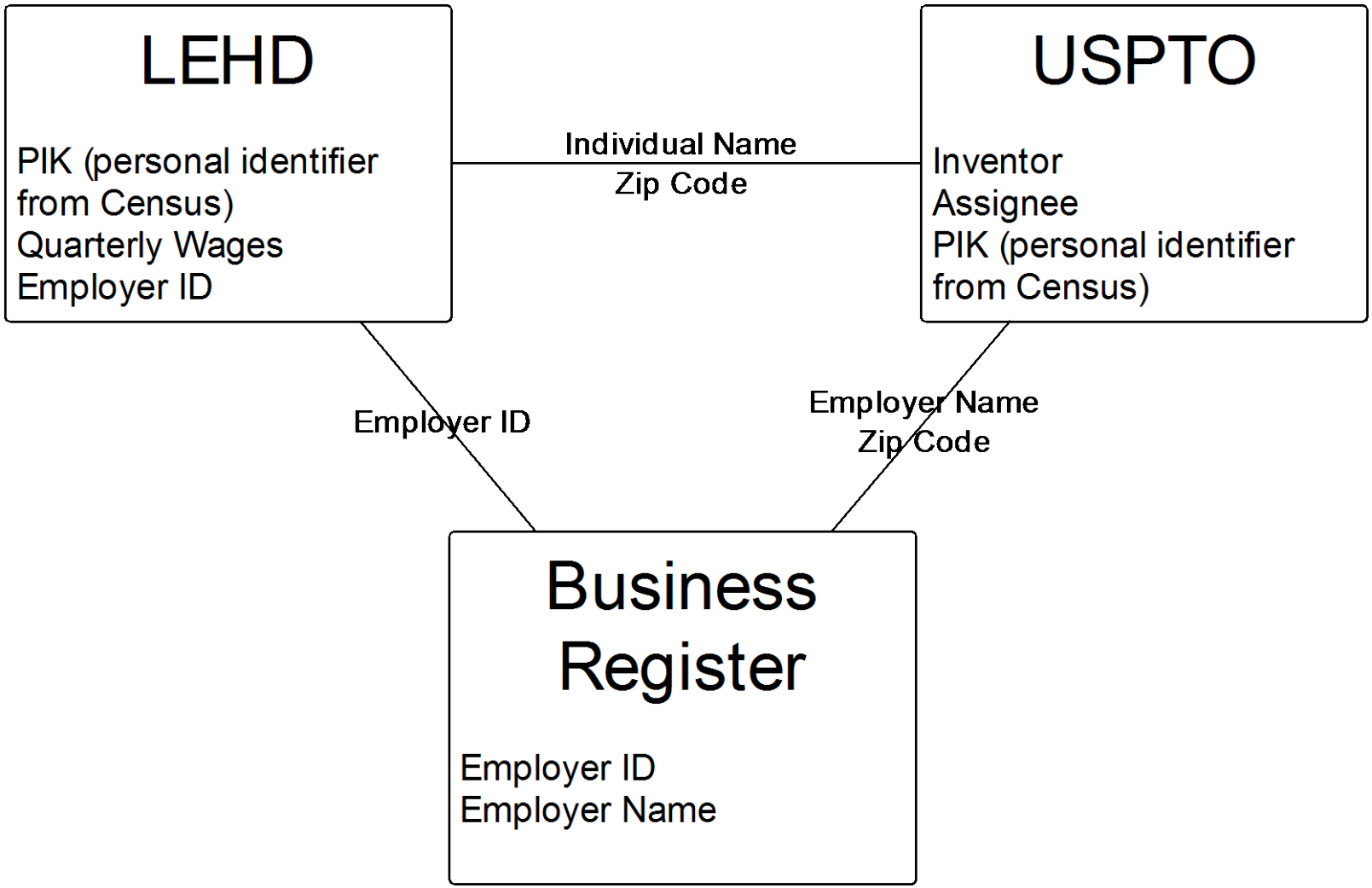
Entrepreneurship/Mobility

- Patents (Fleming)
- Census (US, Denmark, etc.)
- LinkedIn

Innovation

- Patents (USPTO)
- Trademarks
- Copyrights
- Trade Secrets

Linking Patent and Census Data



Opportunities

- Full career history of patentors
- Wage and demographic data for patentors
- Data on innovation teams - that is, the non-inventor coworkers and their mobility
- Can better identify when patentors become entrepreneurs and when new firms patent
  - Identifying timing of new firms was difficult/impossible with patent data only

Open Questions

- Measurement
  - What types of bias impact patent-based measures of mobility?
- Co-mobility
  - Are inventors more productive when they take co-workers with them?
  - Is non-inventor mobility a source of knowledge diffusion?
- Inventor Appropriability
  - How much are inventors able to appropriate from a patent their employer owns?
    - Do they see long-run wage/career impacts?
- Inventor Entrepreneurs
  - Is there evidence that inventors are "stealing" ideas?
  - Are inventors filing patents soon after they leave for a start-up?

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The cup spilleth over…