Ch. 2 Annotated Outline

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1   Introduction

- Grand challenges: identify, problematize important real-world issues (George et al., 2016)

  "Coopt" grand challenges as my primary motivation–respond to call for more research on grand challenges in management research.

- Important: resource use (George et al., 2015)

  One grand challenge that was emphasized early on is the analysis of use of natural resources. Claim this space.

- Work in this space focusing on ESG metrics right now

    Give examples

  There is not a clear literature that would be discussing resource use. Establish that ESG is the closest thing.

- We should enter a level deeper

    Data as raw and encompassing as possible

  The ESG data is often criticized for being highly abstract and the outcome of complex social processes. Contrast that with my (better) approach.

    What is "natural" progression in context, rather than rhetorics

    →Tease learning?

  Set up that we want to look at encompassing processes, to gain a comprehensive impression of resource use. Spilling/pollution is exemplary of use (or waste) of resources.

- Do this for one example where resource use is as clear as could be

    Introduction of pipeline industry and available data

  Present this paper as a study of resource use in one industry, so that we may have a realistic impression of how this unfolds over time.

1.1   Can polluters learn to be clean?

- Goal: to appraise pipeline industry's trajectory

- Assumption: boundedly rational actors that have an interest to reduce pollution

The biggest pushback I expect from an audience which argues that pipeline operators are simply willing to accept pollution and manage the fallout. Maybe the greenwashing paper speaks to this, but this paper assumes that if operators can reduce pollution, they will, and they make reasonable efforts to do so.

Introduce BTOF assumptions

Use that as an opportunity to communicate with inclined audience that we are moving in a BTOF space.

- Use a learning framework to assess their progression

Tell the reader that rather than starting from scratch, there is a theoretical framework available which has many of the features available that we need to analyze the empirical context.

- Examples of their learning in technology

For anybody who is not yet convinced that learning is a suitable framework for analyzing this context, we can yield anecdotal evidence from the industry that learning is what is going on.

E.g., brief history of pipeline technology?

The disadvantage of introducing the history of pipeline technology is that this goes against the "learning from failure" narrative that I originally wanted to set up.

Or their industry learning curve?

This outline scetches a theoretically motivated path into the paper. Maybe plotted out learning curve of the industry would also be great to convince reader that org learning is applicable.

- Limits to learning: pollution continues to be an issue

One important finding that I want to tease for the sustainability audience is that learning does not

mean that spills will go toward zero. Maybe this could also be a good opportunity to transition and tease more results?

1.2 Article structure

- Introduce theory on org learning

    There, will discuss fit between org learning and grand challenges needs

- Mixed methods

    Qualitative view on specific spills & learning

    Quantitative view on whole industry to understand status quo

Mention Vergne (2012) and Montgomery and Dacin (2019) here. Vergne (2012) probably closer to my approach.

2 Lit review

- What is required of the appraisal according to George et al. (2016)

    Raises 8 points on different levels, actors, multilevel etc.

        (abbreviated)

My context offers insights into most of what George et al. (2016) calls for scholars to research (see note). Their editorial is a great starting point to highlight some of the features of my dataset, my intentions going into the research, and the research agenda that I pursue (this last point in the conclusion).

- To skip to solution is incomplete!

    E.g., Ferraro et al. (2015); Slawinski and Bansal (2015)

    Focus on identify sustainable companies → miss industry-wide trends

Ferraro et al. (2015) in particular seems based in wishful thinking more than in careful observation and analysis. I want to use this backdrop to tease out the benefits of my analysis. I forgo bold claims of being able to identify sustainable organizations, but I obtain a more convincing analysis.

- In line with broader literature (Reyers et al., 2018)

I see behind George et al. (2016) a larger trend of analysis of social-

ecological systems outside of management research, especially in other social sciences, but there is interest from interdisciplinary outlets and natural sciences also (e.g., Nat, 2018)

2.1   Organizations acquiring knowledge

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The rest of this section is design to give an introduction to organizational learning (and introduce some of my ideas on that literature).

- Learning captures some required elements such as levels and interaction

I will explain here why learning is actually a good fit with the laundry list of elements to analyze that George et al. (2016) provides. Aka "we don't need to reinvent the wheel". Systematically cover all (applicable) points.

- First stream looks at one outcome variable over time

    Learning curves/learning from experience

    Multiple outcome variables would be better, but good start?

This is where I clarify why we turned to the learning literature in the first place. There is one variable, and an interest on part of some actors to improve it (although technically it's just a secondary goal). Again, this is about the fit between context and theory.

- Different mechanisms identified on different levels

    Learning from failure

    Vicarious learning (institutional context)

    Industry-level learning (coordinating architecture, multilevel actions)

Only learning from failure is where I really have interesting insights to offer, but to extend this list to all applicable forms of learning means being able to tell a more coherent story to the sustainability folks, and having a better justification for applying a learning lens.

- Build in progression assumption without justification

The *knowledge approach* has some feature has this questionable assumptions built in. Following the pennant of "different not better"

4

I transition to the routines approach.

2.2 Organizations developing routines

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This section fits nicely in terms of ideas, and in terms of what would be necessary to make headway with regard to pipeline spills, but it does not related to the empirics I propose.

- Second order (Argyris and Schön, 1978) and high-intellect learning (March, 2010) replace the learning curve.

    Rather than marginally improving a process

    The process is questioned, better process created

A discussion of the data on the pipeline industry in the context of this form of learning may lead the reader to discover herself or himself that a fundamental questioning of processes from within the pipeline industry has not been carried out. Highlights the path-dependence that comes with a process of marginal improvements.

- Routines view further capturing more elements

    Aspirations

    Politics as barrier

        BTOF & reliability

Aspiration level is one of the few ideas from the routines view I could possibly capture empirically.

In the discussion, the concept of reliability point allows me to introduce the issue of the pipeline largely agreeing on their approach, creating an echo chamber. Again, not really sure I want to use the term politics, or just invoke related ideas.

    Validity (organizational constraints)

Of course closely related to reliability, validity allows me to highlight that much of the introduced technology, has not been associated with improvements of safety for refined pipelines (and, by extension, use of natural resources). The motivation for the development and promotion of these technologies hence has to sought elsewhere.

5

- Weaker progress assumption

The progress assumption, which allowed the previous transition, is still found here but in a weaker form. Allows me to make in the discussion the point that we cannot expect a "natural" resolution of problems associated with the use of natural resources based on learning.

2.3 Hypotheses

- Learning from experience hypothesis
- Learning from failure experience
- Vicarious learning hypothesis
- *Maybe*: Industry level learning hypothesis

Industry level learning hypothesis– how to test that? Also, better to have a dedicated section on hypotheses or integrate with lit review? Currently, lit review is organized to introduce literature, emphasize knowledge and routines approach. Could a lit review that is laser targeted on the hypotheses work?

3 Pipeline spills: qualitative insights

- Research setting

Similar to Howard-Grenville et al. (2017), take this opportunity to give a little bit of background info, along with relevant information on data sources etc.

Pollution of ecosystems from pipeline spills

Damages to public health from pipeline spills

Provide explanation of why pipeline spills are an issue in the realm of management of natural resources.

- Learning most unambiguous where failure (spill) occurred (Madsen and Desai, 2010)

Justify the approach of the qualitative section to cover incidents through learning literature.

Analyze recent pipeline spills & response

- NTSB

Use opportunity to start introducing institutional context

3.1 Methods

- Mixed methods

  Cite Montgomery and Dacin (2019) and especially Vergne (2012)–similar structure!

- Fifteen significant spills according to five criteria

  Onshore, crude & rpp

  Identified through PHMSA dataset

- Sources: NTSB report, PHMSA dataset, archival research for other spills.

  This is arguably convenience sampling, but because similarly to Vergne (2012) I just use this section to setup my research, a brief qualitative section with less rigorous methodology is probably justified– or at least will not receive too much scrutiny. Alternatively, state that I have continued looking at spills on my list, until themes emerged and I have saturated them. What would be the reference for that?

- Analysis–Gioia method (Gioia et al., 2013)

  Although I have not been following the Gioia, it describes well my approach, moving from concrete to abstract.

3.2 Results

- Table with 1st, 2nd, 3rd order.

  1st order–sth with technology–tangible

  2nd order–sth with systems?

  3rd order–sth with complexity?

  Creating a table with 1st, 2nd, 3rd order themes would also be an easy way to move from technology to complexity. Table would be short though–just as my qual analysis is–fine in my books.

- Issue that leads to spills–have reached the point where not individual, concrete problems lead to spills, but complexity of the system

  Add as hypothesis for quant test?

4 Pipeline spills: quantitative insights

- Introduce PHMSA, API, AOPL

  Use introduction of data sources to give some insight on institu-

7

tional environment

4.1 Methods

- Data sources

- Sample characteristics

- Sample selection

- Observation period

- Observations

- Econometric approach(es)

4.2 Results

- Assume we find will little in terms of other learning, and some in terms of learning from failure, mechanism for overall stagnation in progress.

5 Discussion

- Learning–we observe:

    Some ideas in the learning literature explain well what is happening with regard to management of natural resources.

    Stagnation in improving performance measures

    Complexity as cause of continued failure

    Observation of individual learning as obscuring factor

- The overall trend is concerning– how would learning literature respond?

    Discussion on prospects from routines view

        Second loop/high-intellect

Pick up empirical results and show where explanations of learning excel at explaining a bleak status quo.

Here, I basically argue that unless the underlying issues are identified by members of the industry/operators, there is very little chance that the status quo changes (bar of course external intervention).

learning

    Discussion on prospects from reliability/validity

- Contrast with other sustainability papers

    More realistic, encompassing and more pessimistic?

    No individual, optimistic findings– those are misleading noise?

6   Conclusion

- Reliability and validity: could look into that for answers/solutions.

- What areas of George et al. (2016) are not covered? I will pick those off in future research and could set that up here.

- Limitation: assuming that spills encompassing.

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