About BAM

The British Academy of Management (BAM) is the leading authority on the academic field of management in the UK, supporting and representing the community of scholars and engaging with international peers.

http://www.bam.ac.uk/
Quantifying stakeholder theory via modelling stakeholder attributes and power dynamics

Panagiotis Andrikopoulos, Nick Webber, Nicholas Theodorakopoulos
Agenda

1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
Agenda

1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
“While stakeholder theory is instinctively pleasing to many (which may account for its growing popularity), its . . . explanatory efficiency and power of its theoretical underpinnings, . . . continue to be works in progress. Needed, therefore, is the inspiration and motivation to continue to build”

(Agle et al., 2008, p.182)
Motivation

There are still significant weaknesses, mostly related to its

a) normative/deontological aspects,

b) a universally-accepted definition of who qualifies as a stakeholder in a business, and

c) the technical difficulty of providing an accurate ex-ante definition of all possible causal links and inter-connected attributes of the various stakeholder groups.

As Key (1999, p.324) elegantly points out `. . . a “theory” without context and causal laws to explain process does not meet the requirements of theory'.
Agenda

1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
Our contribution

- We provide a unifying framework for instrumental stakeholder analysis in an interactive practice-setting.

- This is done by establishing an advanced mathematical formulation using Euclidean space that can be used to frame qualitative and quantitative research in the area in which legitimacy is represented by the degree of concordance between a stakeholder and a legitimizing group.

- The concept underlying our approach is that of an agent-target projection (ATP) in which legitimacy is modelled by the projection of an agent (stakeholder group) onto a legitimizing group.
Our contribution (cont.)

- We demonstrate the emergence of attributes contributing to stakeholder salience and extend prior work in this field (Mitchel, et al., 1997; Driscoll and Starik, 2004; Pfarrer et al., 2008; Neville et al, 2011).

- We model precisely salience effects using five key attributes.
  - The first three are those of **power**, **legitimacy** and **urgency** and are in line with the classical instrumental stakeholder framework (Mitchell et al. 1997; Peloza and Papania 2008; Agle et al. 2008).
  - By integrating the theory of interacting stakeholder groups within our framework, we are also able to incorporate two additional attributes, namely, **resilience** and **conviction**.
  
- These attributes are related to the concepts of reputation and moral capital and allow us to capture aspects of stakeholder groups' `resistance to change', further enhancing the descriptive aspect of our model.
Our contribution (cont.)

- We provide a mathematical framework in which personal utility can be tied to membership of interacting stakeholder groups. Our effort is to improve the normative aspect of the stakeholder theory in a way that facilitates the practical application of the enlightened ST proposition introduced by Jensen (2002).

- Our framework provides the necessary mechanism to solve, in practical terms, the problems arising from dealing with multiple objectives that accompany classical stakeholder theory.

- These have been extensively rehearsed in prior literature (Sternberg, 1997; 1999; Key, 1999; Donaldson, 2002; Phillips et al., 2003; Maiardes et al., 2012).
Agenda

1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
Prior Literature 1

- ST has seen an ever-increasing influence in academic literature across many different disciplines such as accounting, management, finance, business ethics, and strategy.

- The firm can be regarded as at the centre of a nexus of stakeholders, each with legitimate and substantive claims on the firm (Freeman, 1984; Hill and Jones, 1992; Jensen, 2002; Neville and Menguc, 2006)

The firm has to satisfy, simultaneously, the various competing claims in the most optimal manner.
Important milestone:

- Mitchell at al. (1997) on Stakeholder identification and salience.

Three KEY conditions:

1. whether the relationship to the firm is legitimate,
2. the extent to which the claims are perceived as urgent, and,
3. the level of stakeholder's power in influencing the firm.
1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
Defining the Interactive Stakeholder Group

- An **interactive stakeholder group** is a set of individuals (or sub-group entities) engaged in a shared activity in order to achieve a good particular to the group.

- As a consequence of the shared activity the stakeholder group generates (i) external benefit that can be distributed amongst other stakeholder groups and (ii) esteem, that accrues to members of the group, though the achievement of excellence in the pursuit of the good.

- The stakeholder group (agent) can act on other stakeholder groups (target) to change their activity and good.
Modes of Interaction

- Agent SG influence target SG.
- The agent SG’s activity and good act on the target SG’s activity and good.

<table>
<thead>
<tr>
<th>Modes of influence of the agency acting on the attribute</th>
<th>The Target SG: attribute:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Activity</td>
</tr>
<tr>
<td>The Agent SG.</td>
<td>Instrumental power</td>
</tr>
<tr>
<td>Activity</td>
<td>Instrumental legitimacy</td>
</tr>
<tr>
<td>Good</td>
<td></td>
</tr>
</tbody>
</table>

The effect of a SG’s activity: the expression of its power. 
The effect of a SG’s good: the expression of its legitimacy.

Suppose: Degree of influence depends on similarity with the agent SG. 
Influence makes the target SG more like the agent SG.

Modelling: We use a Hilbert space formulation.
A quick example

Originally: \[ \| \pi_a(a') \| \text{ is smaller than } \| a \| . \text{ Influence of } a' \text{ on } a \text{ is small.} \]

With \( v \): \[ \| \pi_v(a') \| \text{ is greater than } \| \pi_v(a) \|. \text{ Influence of } a' \text{ on } a \text{ is large.} \]
Simplified evolution of the SG relationships 1

- Each stakeholder group $s$ has five values associated with it,
  - its power, $W(s)$,
  - intrinsic legitimacy, $L(s)$,
  - resilience, $R(s)$, and
  - conviction, $C(s)$.

- Each pair of stakeholder groups $(s_1; s_2)$ has associated with them a 2x2 matrix $U(s_1; s_2)$.

- Then, restricting our attention to a single pair of groups, the change in $s_2$ due to the influence of $s_1$ is given by.............
Simplified evolution of the SG relationships 2

\[
\frac{da_2}{dt} = \|g_2 - a_2\| (a^* (g_2) - a_2)
\]

\[
\frac{da_2}{dt} = \left( \frac{W(s_1)}{R(s_2)} u_{AA}(s_1, s_2) + \frac{L(s_1)}{R(s_2)} u_{GA}(s_1, s_2) \right) (a_1 - a_2)
\]

\[
\frac{dg_2}{dt} = \left( \frac{W(s_1)}{C(s_2)} u_{AG}(s_1, s_2) + \frac{L(s_1)}{C(s_2)} u_{GG}(s_1, s_2) \right) (g_1 - g_2)
\]

Where.....

\[
U(s_1, s_2) = \begin{pmatrix}
    u_{AA}(s_1, s_2) & u_{GA}(s_1, s_2) \\
    u_{AG}(s_1, s_2) & u_{GG}(s_1, s_2)
\end{pmatrix}
\]
where

- \( W(s) \) is the capability of the activity of \( s \) to change other stakeholder groups;
- \( L(s) \) is the capability of the good of \( s \) to change other stakeholder groups;
- \( R(s) \) is the capability of the activity of \( s \) to resist change from other stakeholder groups, (\( e.g. \) reputation?)
- \( C(s) \) is the capability of the good of \( s \) to resist change from other stakeholder groups (\( e.g. \) moral capital?)
- \( U \), identified with urgency, is the strength of the coupling between two stakeholder groups.
- \( u^{AA} \) is the coupling between the activities of the two stakeholder groups,
- \( u^{AG} \) is the coupling between the activity of \( s1 \) and the good of \( s2 \), \( \ldots \) etc.
Interpretation 2
Reducing our Framework to the Classical Case

Make 3 restricting assumptions to reduce to Mitchell et al. (1997):

I. Suppose that \( u^{AG} = u^{GG} \equiv 0 \).
   Then a SG’s good \((g)\) cannot change so \(C\) is irrelevant.

II. Suppose that \( u^{A,A} = u^{G,A} \).
    Then SG’s power and legitimacy are equally urgent.
    Write \( u(s_i, s_0) \) for the common urgency.

III. Suppose that all SGs are equally resilient to change. We can then subsume
    the common value of resilience into \( u \). Hence, we have:

\[
\frac{da_j}{dt} = \|g_j - a_j\| \left( a^* (g_j) - a_j \right) \\
+ \sum_{i \neq j} c(s_i, s_j) \left( W(s_i) + L(s_i) \right) (a_i - a_j).
\]
Agenda

1. Motivation and objective of the study
2. Our contribution to the discipline
3. Key indicative literature
4. Our modelling framework
5. Some policy implications.
Policy Implications 1

1. A new mediating SG can increase urgency rapidly, e.g. aftermath of the 2007 financial crisis.
   - US and elsewhere: new regulatory bodies introduced
   - Sharp changes to the relationships between stakeholders.
   - Significant culture change in banking/finance organizations.
   - New regulatory bodies can radically shift balance of legitimacy.

2. Can increase legitimacy quickly by switching mediating SGs.
   - Firms can switch between forensic accounting accreditation bodies, environment regulation agencies, quality assurance agencies, patenting authorities.
   - Can cause a sudden power shift between the firm and its stakeholders.
3. Urgency can change suddenly if a firm is revealed to be participating in an activity of low legitimacy, e.g. tax avoidance scandals for Starbucks, Apple, Google, et cetera.

4. Response to an urgent issue: the first incremental change reduces pressure more than subsequent changes, e.g. Nike low wages scandal (late 1990s).

   Initial marginal increase in labour wages eased media pressure, saved Nike from irreparable damage to its brand name.

All subsequent action by Nike such as further increase in minimum wages, monitor suppliers’ codes of conduct, etc. had considerably smaller effect on its public image.
Conclusions

1. Introduced a Hilbert space framework for characterizing stakeholder attributes and their dynamic behaviour using an interactive SG projection approach.

2. Five attributes contributing to stakeholder salience emerge, namely (i) power, (ii) legitimacy, (iii) urgency, (iv) resilience, and (v) conviction.

3. Extends the power/legitimacy/urgency of Mitchell et al. (1997).

4. A wide range of testable policy implications emerge.