Interaction Ritual Threads: Does Collins’s IRC Theory Work On-Line?

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PROBLEM
Lots of communications that used to take place face to face or voice to voice now takes place on-line.

Pew Internet and American Life Project,
Company-wide online discussions have become important tools for large multinational corporations that want to build culture and increase innovation.
What makes an online discussion succeed?
THEORY
Interaction Ritual Theory
What produces successful interaction rituals?

- Shared focus of attention
- Emotional entrainment (involvement in and commitment to the interaction)
- Solidarity/shared identity
- Emotional Energy
  - Greater attractiveness
  - Confidence and buoyancy
  - Feelings of conviction and moral rectitude
- From macro perspective, can generate innovative ideas, political movements, religious revivals and other forms of collective activity
Can IRC Theory Help Explain Variation in the Success of Interaction in a Multi-Party On-Line Discussion?
Why IRC Theory Shouldn’t Apply:

- One-channel:
  - Low-information,
  - Low feedback

- No propinquity

- No simultaneity

- No physical synchrony

- Low entrainment

Online communication modalities “lack the flow of interaction in real time; even if electronic communications happen within minutes, this is not the rhythm of immediate vocal participation. ..There is little or no buildup of focus of attention in reading an email, no paralinguistic background signals of mutual engrossment... the more that human social activities are carried out by distance media, at low levels of IR intensity, the less solidarity people will feel…” Collins, IRC pp. 63-64.
Why IR Theory *Might* Apply:
Textual experience can reproduce emotional depth of “real” experience

- **Samuel Taylor Coleridge (1817):** “willing suspension of disbelief”

- **“narrative transportation”** –
  - We process novels as we process any other type of information, with default value of “true” (absent deliberation);
  - What we experience as “true,” we experience as emotionally engrossing and compelling
  - Engrossment in (entrainment with) text increases belief
Why it Might II: “Theory of mind” research

- Physical co-presence not necessary for emotional response—reading fictional narratives enhance empathic intelligence
- Participants in online discussions can assess emotional states of others as accurately as those in face to face groups
- When participants in online interaction believe that they share a common focus with members of an identity group on an object, they have heightened memory, motivation and emotion
DATA and CONTEXT

- After years of success early 1990s brought crisis (interoperability, network, open source)
- Sought leadership from outside firm and returned to profitability
- Changes in business model (less hardware, more business services)
- Decline of corporate culture
- Many layoffs followed by many new hires
- More workers international or off campus
- New CEO in 2002, lifelong IBM employee, sought to instill renewed sense of collective purpose
The Data

Two on-line (Intranet) discussions held by IBM in 2003 and 2004.

2003: Values Jam – 72 hours, 9,131 posts, 3,722 unique posters in discussion of a proposed new statement of company’s underlying values (outcome: revision of statement)

2004: World Jam – 54 hours, 31,334 posts, 12,972 unique posters in discussion aimed at building on Values Jam to brainstorm solutions to global challenges (outcome: task forces formed to investigate and develop ideas from discussion)
You can participate by adding a comment, replying to existing ones -- or rating comments posted by your colleagues. Do you agree or disagree with what they’re describing? Select a forum below and start jamming now!

4 discussion forums

**Forum 1. Company Values**
Do company values exist? If so, what is involved in establishing them?

**Forum 2. A First Draft**
What values are essential to what IBM needs to become?

**Forum 3. A Company’s Impact**
If our company disappeared tonight, how different would the world be tomorrow?

**Forum 4. The Gold Standard**
When is IBM at its best?
<table>
<thead>
<tr>
<th></th>
<th>Values Jam</th>
<th>World Jam</th>
</tr>
</thead>
<tbody>
<tr>
<td>% posts w &gt;0 responses</td>
<td>32.6</td>
<td>34.1</td>
</tr>
<tr>
<td>Mean thread length</td>
<td>1.93</td>
<td>2.02</td>
</tr>
<tr>
<td>Max thread length</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Mean word length/post</td>
<td>36.45</td>
<td>37.71</td>
</tr>
</tbody>
</table>
To apply theoretical insights to different forms of communication, one must understand these forms as distinctive *speech genres (oral or textual)* and begin by analyzing their distinctive structures, styles, and contents.
What kind of “speech genre” is a jam?
Key Features of IBM Values and World Jams

- Participants registered: All posts signed
- Moderators did not remove posts
- Lurking permitted, with registration
- Structure provided by
  - Forums (4 for Values; 6 for World)
  - Moderators posted “Jam Alerts”
  - “Jamalyzer” automatically identified trending themes
Jam Structure

- The **utterance** is the **post** - the “basic unit” (Bakhtin) of communication, associated with a single speaker with clear beginning and end
- Structure enforces an orderly sequence of utterances (no overlaps, interruptions, etc.)
- Forking common
- Utterances experienced *visually and spatially* (not aurally in real time)
- Inconsistent participation of many interactants with larger audience
- Thus temporality much slower than conversation
Jams as Liminal Spaces (Turner)

- Formal rules/hierarchal relations relaxed
- Suspension of formalities (brief, elliptical comments; restricted code; substance over style)
- Allusions to personal identities and experience in ways unusual in business settings
- Posts civil but at time emotional, with intense expression of grievances (in Values Jam)
- Liminality rituals use suspension of normal rules (anti-structure) to produce communitas: Generate affect around IBM as an object of collective focus.

“I’m a guy in the lower ranks of the company, a few yrs out of college and I have a senior vice president of a 320K person company asking me what I think? How cool is that?”
HYPOTHESES
The Independent Variables

- Excitation
- Focus
- Identity
Excitation

- Jam-appropriate counterpart to entrainment, recognizing slower rhythms of genre
- Empirically determine socially expected durations between posts (30 minute for values jam, 20 for world jam)
- Excitation: summed across exponentially decaying function of time from last post

**Hypothesis 1: The greater the excitation, the greater the probability a post will elicit a response.**
Focus: Extracting Themes: LDA

Each post is a text
- 40,000 + posts
- 30-topic solution selected after diagnostics (MALLET Machine Learning Toolkit)
- Tests demonstrated stable structure (but varying prevalence) across the two discussions
- Interpretation: Iterate from terms to texts
Focus I

Intrapost Topical Focus: Extent to which post concentrates on a particular salient topic

- Based on topic model of all texts (30-topic LDA w spectral initialization, using N grams, removing stop words);
- Herfindahl-Hirschman index of concentration of post across topics (.033-1.00)

Hypothesis 2a: The greater the intrapost topical focus, the more likely a post is to elicit a response

Hypothesis 2b: The effect of intrapost focus on response will increase with length of post
Focus II

- **Interpost Topical Focus**: Extent to which there is *mutuality of focus* through continuity in thematic content between one post and the next
  - This measure captures extent to which post uses same topics as parent post to which it responds
  - $1$ minus Jensen Shannon divergence measure between distributions across 30 topics of parent and focal post

**Hypothesis 2c**: The higher the interpost topical focus, the higher the probability that a post will elicit a response.
Identity

- Establishing co-membership critical part of interaction – identity signals may increase sympathy, likelihood of response
- 1st person plural (we, our) central “we” signals
- “I” suggests separateness from collectivity and “IBM” also distances from collectivity
- Included binary measures for presence or absence of each of 7 combinations of “I/my,” “we/our,” and “IBM”

Hypothesis 3a: Controlling for length, posts that contain “we” or “our” are more likely to elicit response.

Hypothesis 3b: Those that contain “I” or “my” or “IBM” without “we” or “our” are less likely to elicit response.
One must control for lots of other things:

- Log length
- Forum
- Gender
- Time of day
- 1st in Thread
- Missing parent
- Continent
- Last period in Jam
- Executive
- Manager
- Topic representation (30 topic dummies)
Hyp. 1: Excitation Predicts Persistence
Hyp. 1: Excitation Predicts Persistence

Values Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Intrapost Focus 10 Words
- Intrapost Focus 20 Words
- Intrapost Focus 50 Words
- Intrapost Focus 100 Words
- Intrapost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitation 30 Min HL

Standardized Coefficient Estimate

World Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Intrapost Focus 10 Words
- Intrapost Focus 20 Words
- Intrapost Focus 50 Words
- Intrapost Focus 100 Words
- Intrapost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitation 20 Min HL

Standardized Coefficient Estimate
Hyp. 2a: Intrapost Focus Predicts Persistence
Hyp. 2a: Intrapost Focus Predicts Persistence
Hyp. 2b: Intrapost Focus Predicts Persistence more for Longer Posts
Hyp. 2b: Intrapost Focus Predicts Persistence more for Longer Posts
Hyp. 2c: Interpost Focus Predicts Persistence
Hyp. 2c: Interpost Focus Predicts Persistence

Values Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Interpost Focus 10 Words
- Interpost Focus 20 Words
- Interpost Focus 50 Words
- Interpost Focus 100 Words
- Interpost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitement 30 Min HL

Standardized Coefficient Estimate

World Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Interpost Focus 10 Words
- Interpost Focus 20 Words
- Interpost Focus 50 Words
- Interpost Focus 100 Words
- Interpost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitement 20 Min HL

Standardized Coefficient Estimate
Hyp. 3: “We” Talk Predicts Persistence
Hyp. 3: “We” Talk Predicts Persistence

Values Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Intrapost Focus 10 Words
- Intrapost Focus 20 Words
- Intrapost Focus 50 Words
- Intrapost Focus 100 Words
- Intrapost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitation 30 Min HL

World Jam Coefficient Estimates with 95% Confidence Intervals

- Interpost Topic Focus (JS Similarity)
- Intrapost Focus 10 Words
- Intrapost Focus 20 Words
- Intrapost Focus 50 Words
- Intrapost Focus 100 Words
- Intrapost Focus 200 Words
- Identity: None
- Identity: We/Our
- Identity: IBM
- Identity: We/Our & I/My
- Identity: I/My & IBM
- Identity: We/Our & I/My & IBM
- Excitation 20 Min HL
Summary:

- Excitation matters
- Focused messages matter
- Sustaining focus matters
- Articulating shared identity does not matter
DISCUSSION
IRC theory identifies central problem of “strong-culture” bureaucratic control. IRs are local and therefore build local solidarity in opposition to hierarchical control.

Jams address this problem by Taking discussion out of small Groups into public spaces.
Next

- **Sentiment Analysis**: To estimate shifts in emotional energy
- **Improved Identity Measures**: To estimate shifts in forms of solidarity.
- **Client Experience Jam**: More detailed measures may make it possible to explore contagion.
- **Which threads generated usable ideas and why?**
- **Dynamic analysis** of topic transitions – sticky topics, intrusive topics