Structuring Project Groups for Creative Action: Is There a Benefit?

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Today’s Discussion

Theoretical Motivation

- Theoretical gap: Does the structuring of group interactions enhance group creativity?
- Horizontal role assignments: divisional, functional
- Evaluative pressure

Empirical Context

- 64 triads designing comic strips
- Lab experiment: Manipulations, Measures, Findings
- Qualitative evidence from 24 videotaped groups

Conclusions & Contributions
Many collectives organize their creative production around assigned/pre-established work designs: theatre and ballet companies, fashion companies, choirs, bands, newspapers, architecture firms, etc.

Are creative synergies enhanced by structuring the interactions of members in these groups?

Many contextual factors for groups engaged in creative production have already been explored (i.e. rewards, goal-setting, climate, supervisory encouragement), yet the impact assigning horizontal roles in workgroups have been neglected.
Inconsistent arguments about structuring group interactions for Creativity

- **Organic structures** rather than **mechanistic structures** (King & Aderson 1990; Burns & Stalker 1961); **Semi-structured** environments “where change occurs within safe limits from the edges of chaos and order” (Brown & Eisenhardt 1997)

- **Bureaucratic controls** enhance innovation in Pharma R&D (Cardinal 2001); Creativity and **standardized procedures** as complements for customer service providers (Gilson et al 2005)

- Evidence from the *brainstorming literature*: structuring interactions through **facilitators**, **task instructions** and **setups allowing for solitary reflection** benefits group creativity (Oxley et al 1996; Paulus et al 2006; Nunamaker et al 1991)
What is “group structure”?

Creativity

- Originality of idea
- Usefulness of idea
- Idea prolificacy

Structural characteristics of groups:

- Sets of rules and patterns that guide action
- Role delimitation: distribution of task responsibilities within the group (horizontally)

Polzer, 2009, Nadler & Tushman 1997; Galbraith 1973, 1944
Two Research Questions

- Does the assignment of horizontal, task-related roles in workgroups enhance the quality of their creative outcomes?

- Is the joint impact of evaluative pressure and role assignment better or worse for creativity?
"A role is a delineation of the set of recurrent behaviors appropriate to a particular position in a social system."

(Polzner, 2009)

- **For this study:** TWO externally imposed **structures** on a workgroup versus a control group

- **Functional vs. divisional structures.** (Chandler, 1961)
  - Functional: storytelling, drawing, panel coordinator
  - Divisional: character 1, character 2, character 3

- = Role 1
- = Role 2
- = Role 3
How Structure impacts Creativity

Structural characteristics of groups *tacitly communicate cues* about how the creative task should be done.

- Externally imposed roles may permit *deeper individual exploration* as compared to creative exploration without the assignment of a role.
- Externally imposed roles allow each individual to navigate the creative challenge *differently (in partial separation)* from the others.
- Externally imposed roles may *remove uncertainty* about one’s contribution and how to integrate it with the inputs of others.

**H1:** Creative outcomes of groups whose interactions are *structured by assigning horizontal roles* would be judged as *higher in quality* than groups without role assignment.
Evaluative Pressure: Fear of negative evaluations from others may lead to process losses for groups working on creative tasks.

But Role Assignment may moderate this effect:

- Externally imposed roles may reduce the anxiety associated with criticisms from someone with a different functional role (e.g. criticisms may be regarded as more constructive)

- To solve the interpersonal conflict with someone assigned to a different role, one might cross the creative space towards that group member and bridging one ideas with the other’s.

**H2:** The impact of evaluative pressure on group creativity is beneficial for groups with externally imposed role assignment.
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- Conclusions & Contributions
The creative task meets three important criteria:

1) **Creative performance** appraised by 2 judges

2) **Conditions for Role Assignment:**
   a) *Functional & Divisional*: individual contributions are delimited, identifiable and interdependent
   b) *Control* condition (no predetermined structure)

3) **Conditions for Evaluative Pressure:**
   a) Explicitly requesting peer-evaluation
   b) Control condition (no intervention on evaluative pressure).
The Creative Task (Lab study):

A 5-panel comic strip about...

“Exactly 3 characters drawn as stick figures”
Study 2: Measures, Manipulations

Sample: 68 groups of 3 (students & mailing list).

Creative performance: Average expert rating of comic strip (two experts; scale from 1 to 7; 68% inter-rater correlation)

Role Assignment: Groups assigned randomly to the control condition (no structure), functional structure, or divisional structure

Evaluative Pressure: Members were told that evaluations of their peers’ creative contribution will be asked at the end of the study (vs. control condition)
1) Manipulation checks confirmed
2) Higher scores for groups with Role Assignment (H1)
3) Evaluation Apprehension: moderated by Role Assignment (H2)
Factorial ANOVA

Table 4: Analysis of Variance for Output Creativity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Output Creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>df</td>
</tr>
<tr>
<td>Structured group (S)</td>
<td>1</td>
</tr>
<tr>
<td>Evaluative pressure (EP)</td>
<td>1</td>
</tr>
<tr>
<td>S x EP</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: df = degrees of freedom; MS = mean square between groups; ***p < .01 **p < .05 and *p<.10
Qualitative evidence: 24 videotaped groups

- **Goal:** identify differences in group dynamics
- **Coding scheme:** divergent vs. convergent statements (Harvey 2013)
Expected mechanisms:

- If being *assigned to a role* triggers deeper search within that role, then higher numbers of *distinct ideas* will be expressed in group interactions.

- If *evaluative pressure* loses it’s negative edge (i.e. lower cognitive load) when roles are assigned, then more *attempts to bridge ideas* will be witnessed.
Qualitative evidence (work in progress)

- Didn’t find more ideas generated/combined in structured groups (i.e. due to more ideas within roles), instead...

<table>
<thead>
<tr>
<th>Types of Comments</th>
<th>Control</th>
<th>Functional</th>
<th>Divisional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role-Seeking/Role-Establishing</td>
<td>6.10%</td>
<td>2.61%* (p&lt;0.01)</td>
<td>4.67%* (p&lt;0.07) ^ (p&lt;0.04)</td>
</tr>
<tr>
<td>New Topic</td>
<td>11.36%</td>
<td>9.23%</td>
<td>10.40%</td>
</tr>
<tr>
<td>Encouraging/Probing</td>
<td>25.58%</td>
<td>26.48%</td>
<td>26.00%</td>
</tr>
<tr>
<td>Building/Expanding/Combining</td>
<td>47.73%</td>
<td>48.43%</td>
<td>48.95%</td>
</tr>
<tr>
<td>Clarifying</td>
<td>3.25%</td>
<td>8.01%* (p&lt;0.001)</td>
<td>3.94%^ (p&lt;0.001)</td>
</tr>
<tr>
<td>Consensus-Seeking</td>
<td>3.12%</td>
<td>3.14%</td>
<td>3.20%</td>
</tr>
<tr>
<td>Proactively Disagreeing</td>
<td>2.86%</td>
<td>2.09%</td>
<td>2.84%</td>
</tr>
</tbody>
</table>

Legend

* Significant to Control Condition

^ Significant to Functional Condition
Conclusions & Contributions

- Greater attention should be paid to how structural features of workgroups influence creative processes and outcomes.

- The study provides evidence for the benefits of structuring interactions for groups engaged in creative tasks.

- Extends work in task/group design and creativity by attempting to explain how structural features can account for the variance observed in creative outcomes.

- Implications for the field of systematic innovation and the management of groups operating on the vast scene of creative production.
Thank you