LESSONS FOR DIVERSITY AND INCLUSION FROM GOOGLE’S PROJECT ARISTOTLE

Paul Martini
Diversity Journal Club
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Outline

• Group Intelligence
• Google’s Project Aristotle
• Concept of Psychological Safety
• Application to Diversity & Inclusion
Aristotle Quote

“The whole is greater than the sum of its parts.” *

* This is not what Aristotle wrote. Barbara Ryden sent me this correction: “In the case of all things which have several parts and in which the totality is not, as it were, a mere heap, but the whole is something besides the parts, there is a cause” (Metaphysics, book 8. part 6, W.D. Ross translation)
A key strength of the department is its extraordinarily collaborative and interactive scientific atmosphere, and we seek candidates who will contribute to and benefit from that atmosphere.
Evidence for general individual intelligence comes from the average correlation of an individual’s scores on a diverse set of cognitive tests.

Woolley and her colleagues showed that there is similarly strong evidence for the collective intelligence of groups.

First factor from each study accounts for more than twice the variance as subsequent factors.

Woolley et al. (2010)
Individual vs. Collective Intelligence

Collective intelligence predicts performance much better than average or maximum member intelligence.

What predicts collective intelligence?
- Average social sensitivity
- Even distribution of speaking
- Proportion of female members

What does not?
- Average member intelligence
- Maximum member intelligence
- Motivation, satisfaction, cohesion

Woolley et al. (2010)
Origin of Project Aristotle

- Google has a People Analytics division
  - Data-driven approach to answer people-related questions and make the best decisions

- Example questions:
  - What are the traits of the most productive employees?
    - [One example: they rotate who they eat lunch with]
  - What are the traits of the best managers?
    - [Examples: Good communication skills, avoid micromanaging]
Goals

• What are the traits of the most effective teams?
  - All the same personality traits?
  - Everyone is friends outside of work?
  - All the most individually successful employees?

• What does “effective” mean?
  - Combination of quantitative and qualitative measures

• What is a team?
  - Group working together on a problem or problems. Characterized by high interdependence.
Examples of Teams

• Proposal Review Panel
• Committee writing a white paper
• Several faculty and students working together on a research project
• Working group writing a software pipeline for a survey
• Your example here
Results

Group norms are an important factor in whether a team is successful or not.

Norms are behavioral standards that typically dominate over individual traits.

Pointed to earlier studies on group intelligence and the concept of psychological safety.
Definition of Psychological Safety

Psychological safety is a belief that one will not be punished or humiliated for speaking up with ideas, questions, concerns, or mistakes.

Amy Edmondson (1999)
Why might it not exist?

<table>
<thead>
<tr>
<th>No one wants to look</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignorant</td>
</tr>
<tr>
<td>Incompetent</td>
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<tr>
<td>Intrusive</td>
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<tr>
<td>Negative</td>
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</tbody>
</table>

Edmondson, TEDxHGSE Talk
Why might it not exist?

<table>
<thead>
<tr>
<th>No one wants to look</th>
<th>Easy to avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignorant</td>
<td>Don’t ask questions</td>
</tr>
<tr>
<td>Incompetent</td>
<td>Don’t admit weakness or a mistake</td>
</tr>
<tr>
<td>Intrusive</td>
<td>Don’t offer ideas</td>
</tr>
<tr>
<td>Negative</td>
<td>Don’t critique the status quo</td>
</tr>
</tbody>
</table>

Result: Not everyone on a team is fully engaged

Edmondson, TEDxHGSE Talk
Pushback

Does this mean dial back on excellence? No.

Psychological Safety

low  high

Comfort Zone
Apathy Zone
Learning Zone
Anxiety Zone

Motivation & Accountability

low  high

Edmondson, TEDxHGSE Talk
How to foster psychological safety

- Frame the work as a learning problem, not an execution problem. Emphasize uncertainty about how to achieve the goal.
- Acknowledge your own fallibility. Encourage people to speak up.
- Model curiosity and ask lots of questions.

Edmondson, TEDxHGSE Talk  
Image Credit: www.weforum.org
Connection to Diversity & Inclusion

• There are strong cognitive biases toward similarity, yet this can lead to “group think” and stifle creativity
• Diversity in all forms can lead to outcomes that would not be possible from homogeneous groups
• An inclusive environment is a critical aspect of high psychological safety, and for diverse groups to thrive
Leaky Pipeline

• The STEM pipeline is more “leaky” for members of underrepresented groups.

• Undermining comments from colleagues are a major reason members of underrepresented groups leave STEM jobs.

• Membership in an underrepresented group is part of an individual’s identity, and can be tied how an individual will perceive they will be evaluated.

Image Credit: Allen-Ramdial & Campbell (2014)
Need for Inclusion

• Members of underrepresented groups can be aware of negative stereotypes and may be hindered by a perceived need to ‘overcome’ negative stereotypes

• Unconscious negative stereotypes can hinder open communication about differences, and hinder effective communication

• Environments with poor psychological safety will have more difficulties with recruitment of underrepresented groups
Stuff to Remember

• Science is increasingly done by interdependent teams of researchers with diverse skills and experiences
• A larger fraction of science can only be done by teams
• More and better science happens if everyone working together contributes fully
• Teams with high levels of psychological safety have more complete engagement and are more inclusive
• Ways to foster psychological safety include:
  • Encourage everyone to contribute
  • Acknowledge fallibility
  • Model curiosity

Edmondson, TEDxHGSE Talk
References

• Allen-Ramdial & Campbell (2014), ”Reimagining the Pipeline: Advancing STEM Diversity, Persistence, and Success,” Bioscience, 64, 612.


• Amy Edmonson, TEDxHGSE “Building a psychologically safe workplace” https://www.youtube.com/watch?v=LhoLuui9gX8


• Google re:Work on Teams: https://rework.withgoogle.com/subjects/teams/