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# Characterizing organizational micro-cultures

Geoffrey P Morgan, ABD

gmorgan@cs.cmu.edu

# What are organizational micro-cultures?

- Groups of people within an organization who have a strong and differentiated culture and identity from the larger organizational culture
- In a change management context, people in these groups are:
  - Likely to have/possess core capabilities of the organization that have granted them some autonomy
  - Unlikely to be persuaded by messaging aimed at the whole organization
  - More likely to leave if their group is disturbed
  - More likely to leave en masse if core actors in the group are removed

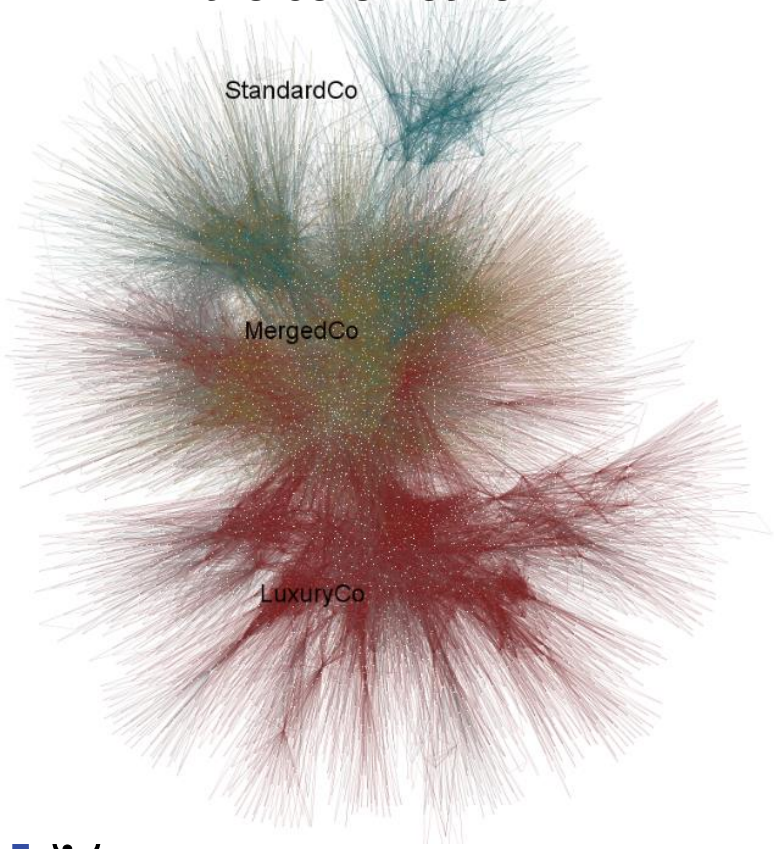
# Review of Three Tenants of Constructuralism

- Interaction leads to knowledge acquisition
- Homophilly: Individuals tend to interact with others who are similar to them
- Social Relativity: Individuals tend to evaluate and determine their actions on the basis of their own characteristics and their perceived similarity to others

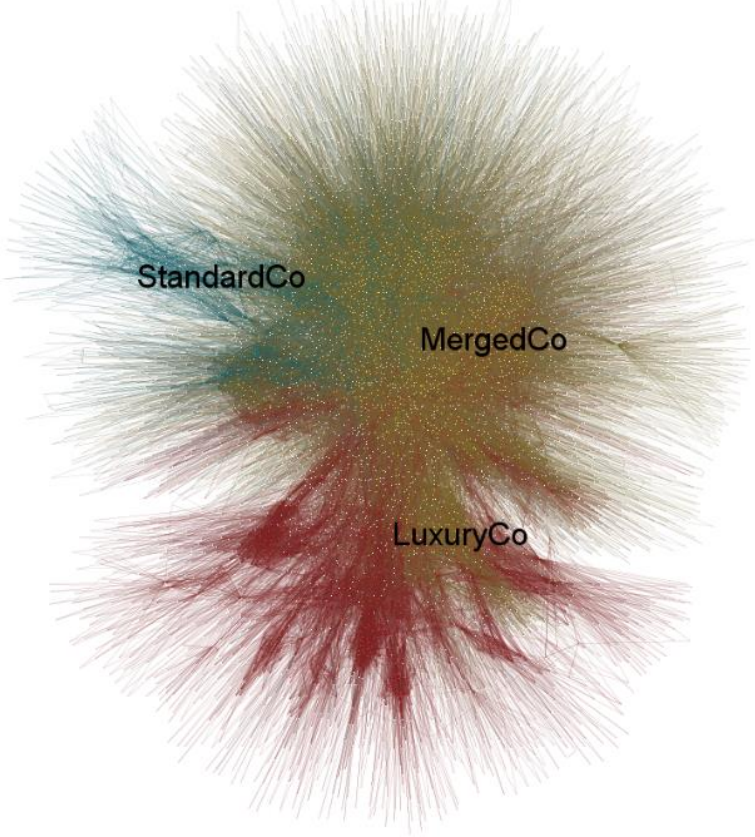
Adapted from “Group Stability: A Socio-Cognitive Approach” (Carley 1990), pg 6

# My context: A large multi-national experiencing a merger

Time 1, 6588 Individuals in the core network




Time 2, 7373 Individuals in the core network



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# Language choices as a proxy for organizational culture

*"shared symbols and patterns of meaning transmitted from person to person within societies, regions, or countries"*

*"organization members reveal them (values and assumptions) in their work conversations with others"*

More radically:

*"an organization is social phenomenon created by human symbolic expression"*

All quotes drawn from the Sage Handbook of Organization Studies, Third Edition

# Corpora Comparison: Calculating a difference score between two corpora in five easy steps

1. Calculate the normalized odds ratio

$$\boldsymbol{odds}(\boldsymbol{t}, \boldsymbol{AG}) = \left(1 - \left(\frac{1}{\left(\frac{|\boldsymbol{t_A}|}{|\boldsymbol{T_A}|} / \frac{|\boldsymbol{t_G}|}{|\boldsymbol{T_G}|}\right)}\right)\right) - .5$$

2. Only count cases where the distinction is large, like 65/35

$$fOdds(t, AG, c) = abs\big(odds(t, AG)\big) > c, odds(t, AG)$$
$$else, 0$$

3. Discount the frequency of terms in the corpora by a prior

$$freq(t, AGP, c) = fOdds(t, AG, c) > 0, max(odds(t, AP, 0)$$
$$fOdds(t, AG, c) < 0, max(odds(t, GP), 0)$$

4. Calculate a score for each term

$$s(t, AGP, c) = fOdds(t, AG, c) * freq(t, AGP, c)$$

5. Sum the absolute score values for all terms

$$Score(T, AGP, c) = \sum_t abs\big(s(t, AGP, c)\big)$$

# Lite Docking: TF-IDF vs Corpora Comparison

| Characteristic | TF-IDF | Corpora Comparison |
|---|---|---|
| Scores "stop words" low | Yes | Yes |
| Identifies valuable words | Yes ("most substantive terms") | Yes ("most distinctive terms") |
| Uses term document count to contextualize term counts | Yes | No |
| Uses another corpus to contextualize term counts | No | Yes |
| Identifies both positive and negative relationship of tokens to a given corpus | No | Yes |
| Robust to high variance in document size | No | Yes |
| Robust to high variance in individual corpus size | No | Yes |

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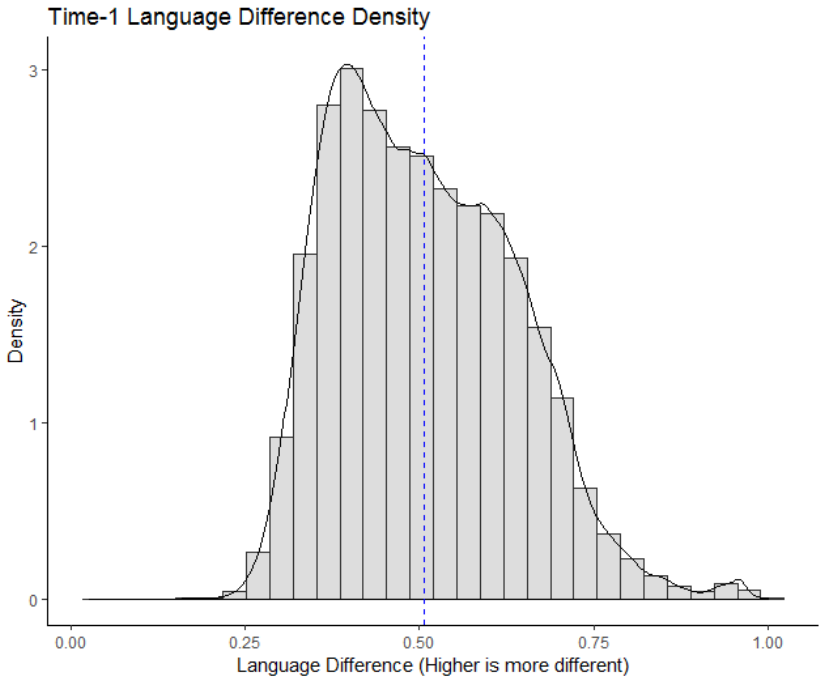
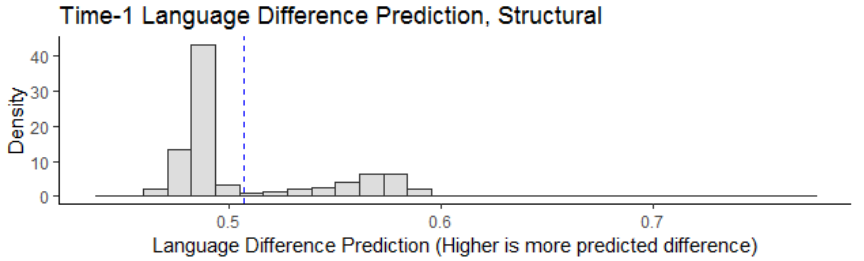
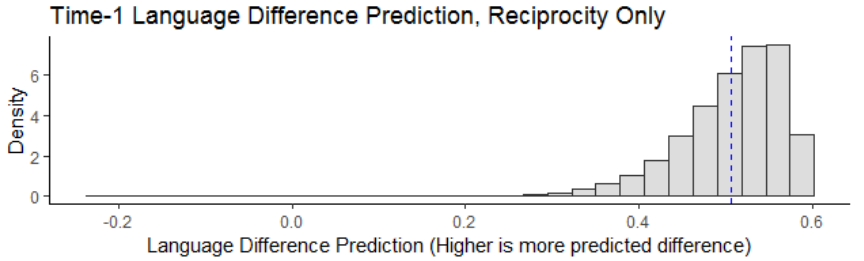
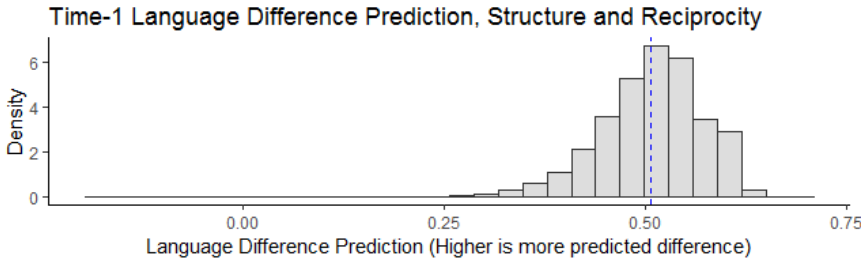
# Building a statistical model to predict difference scores



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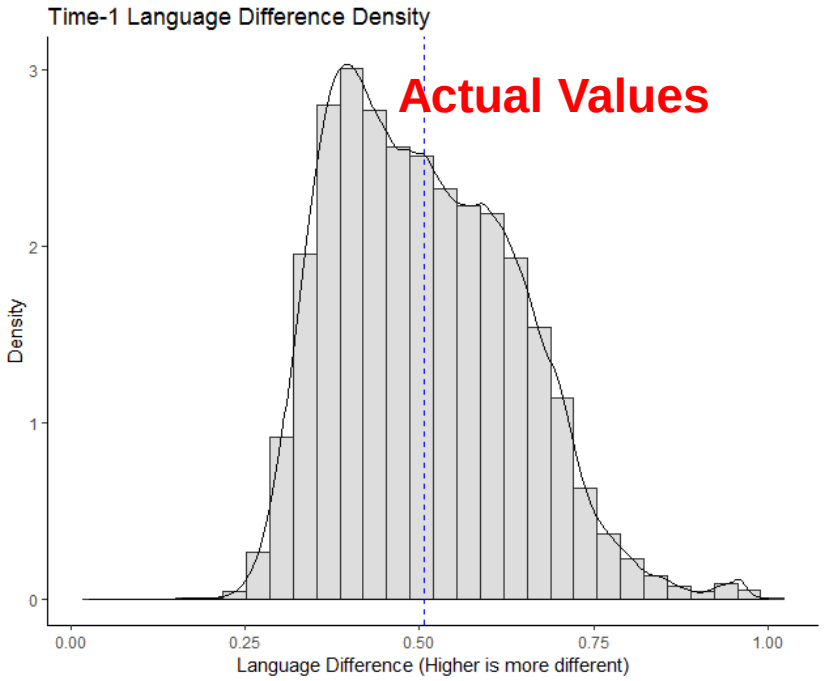


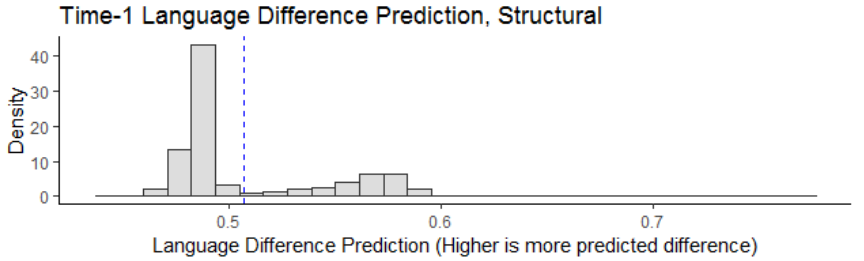


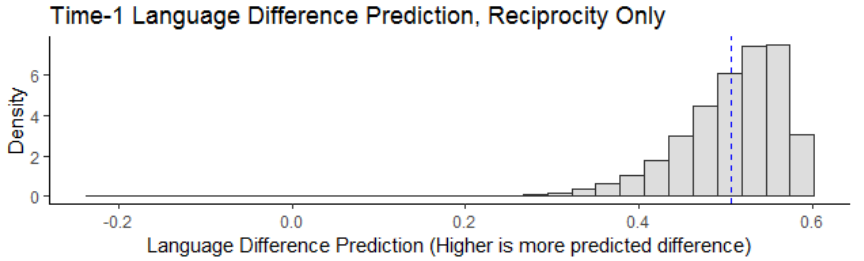


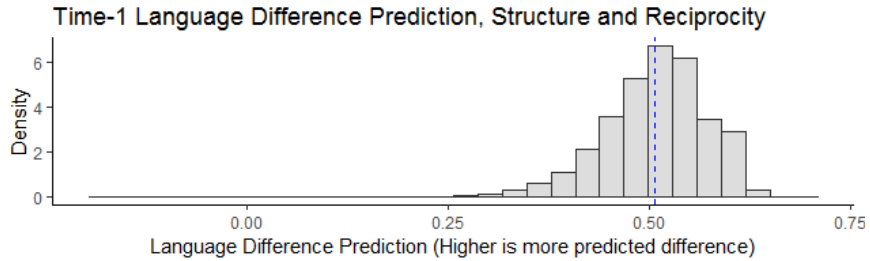

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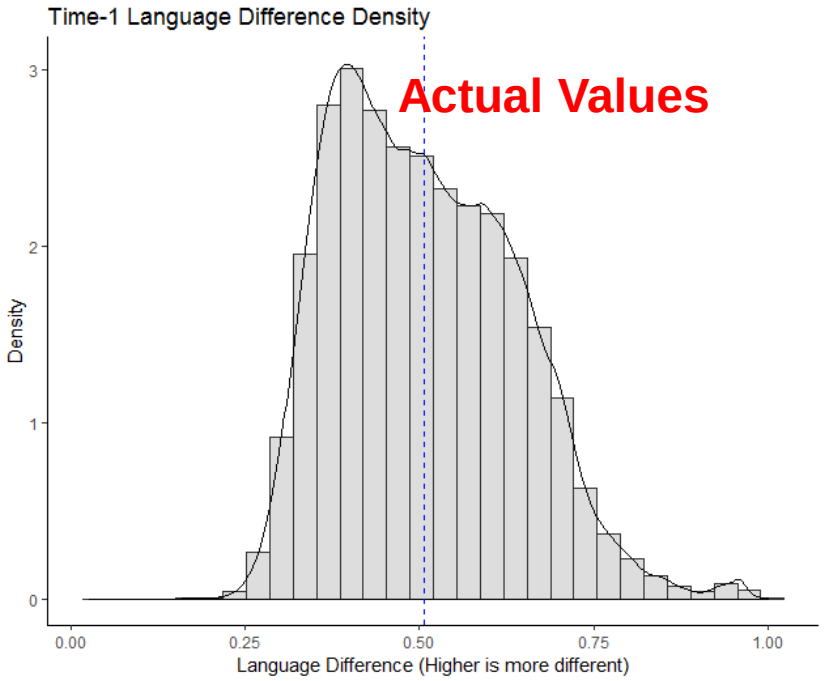


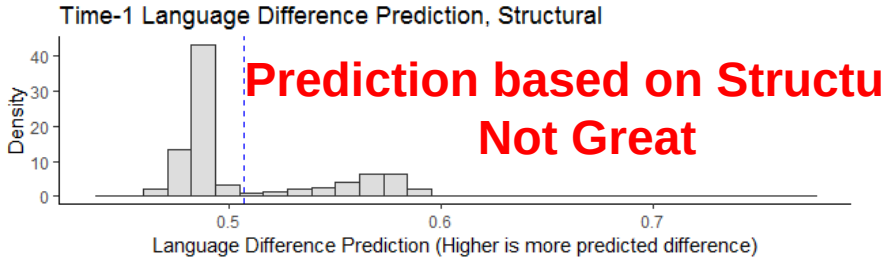


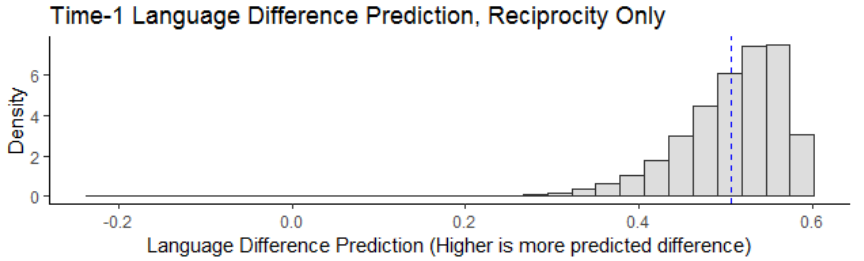


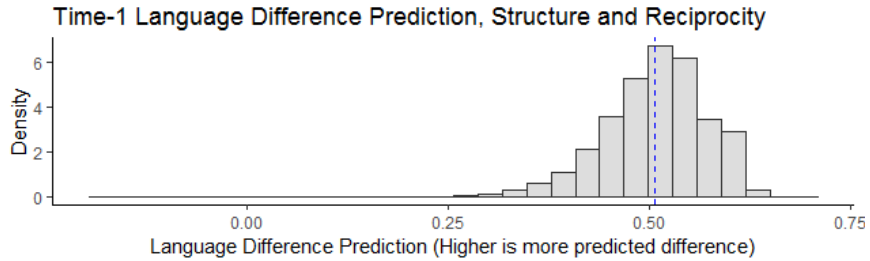

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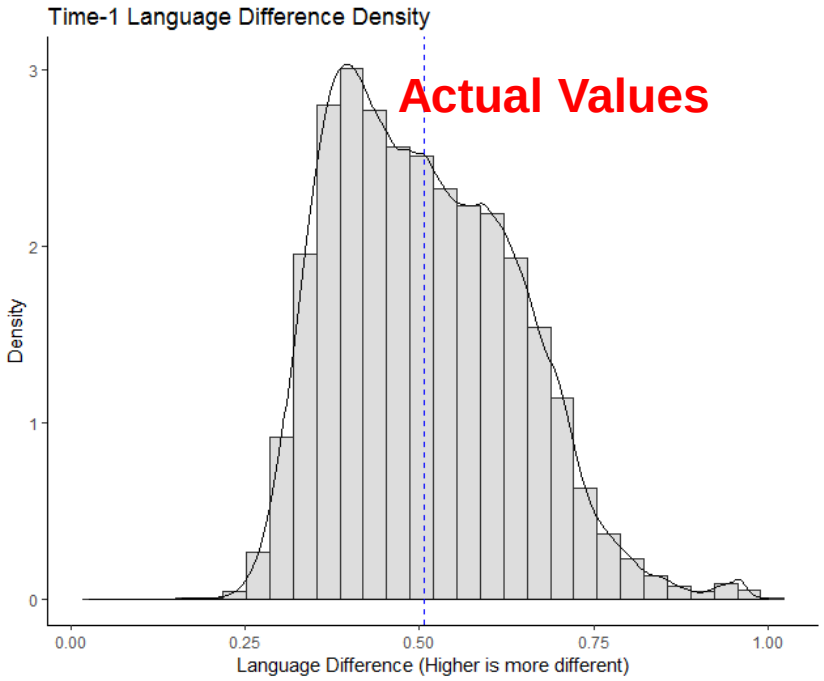


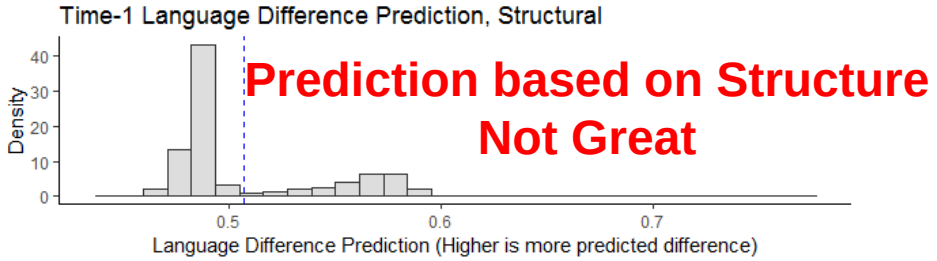


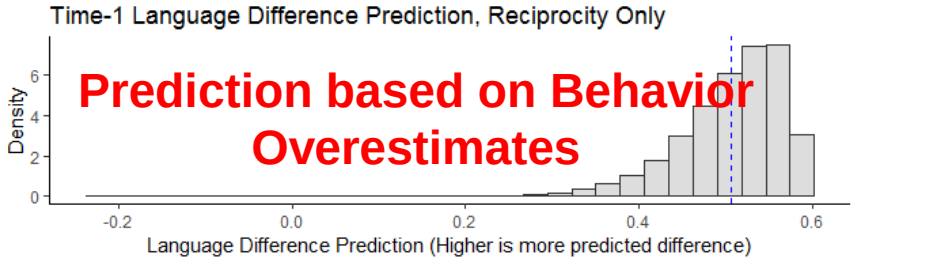


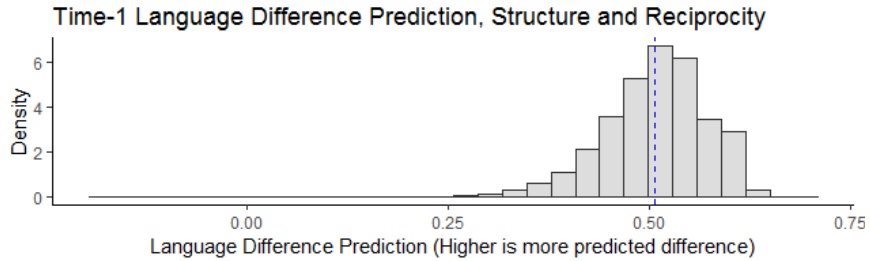

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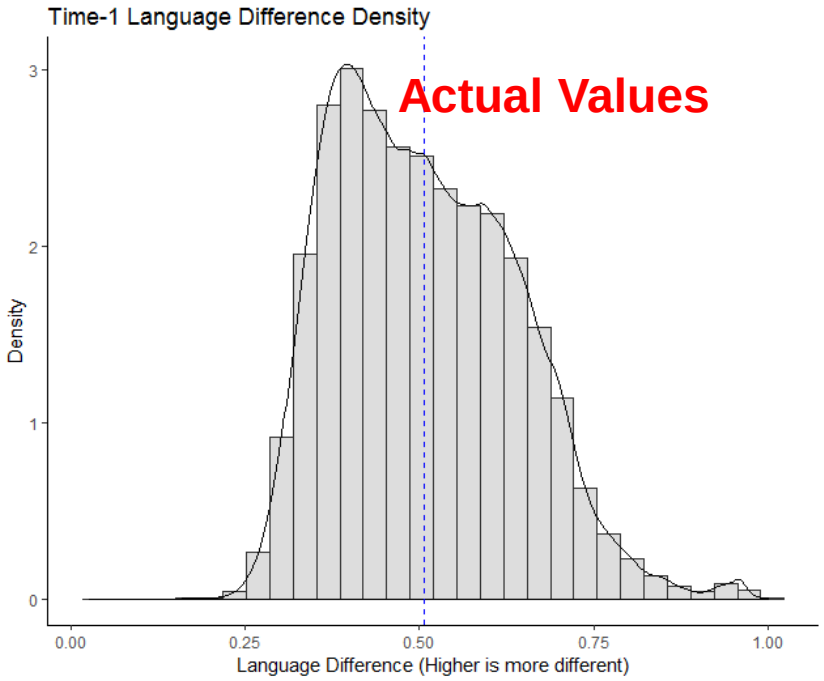


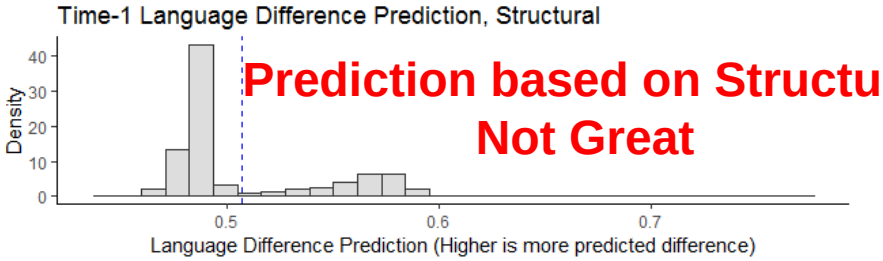


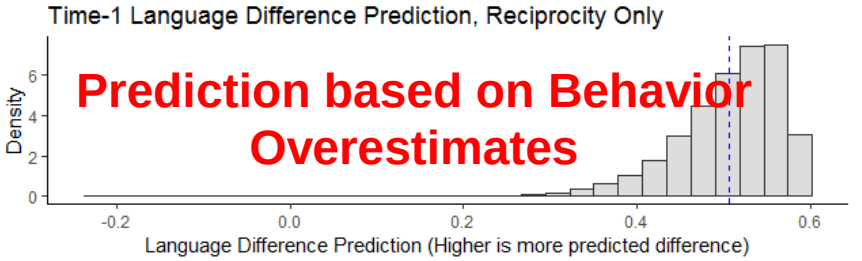


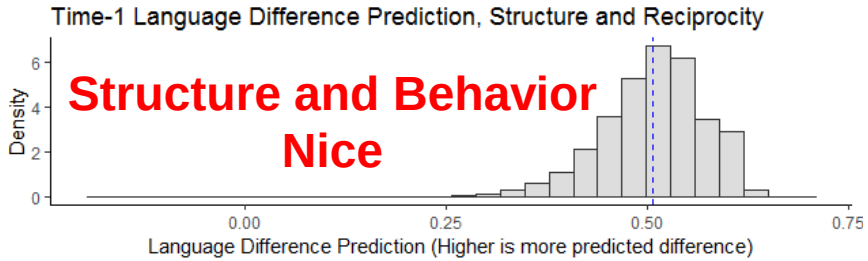

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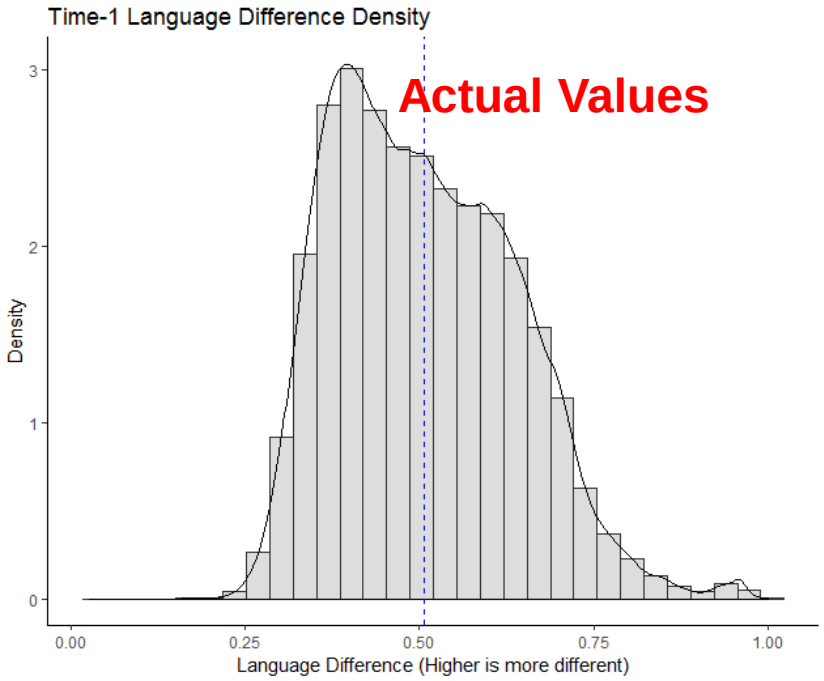
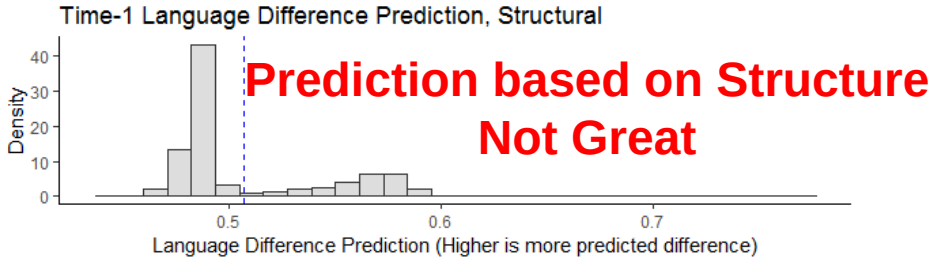
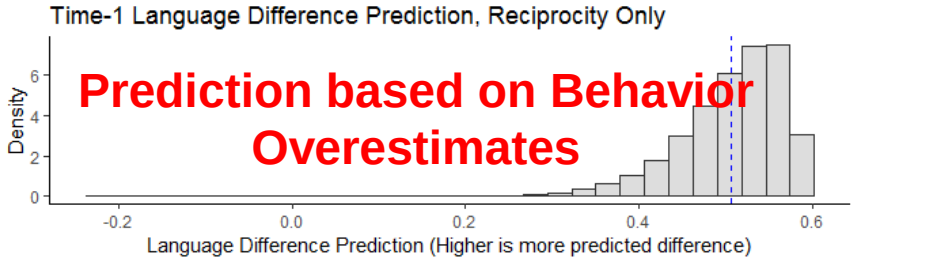
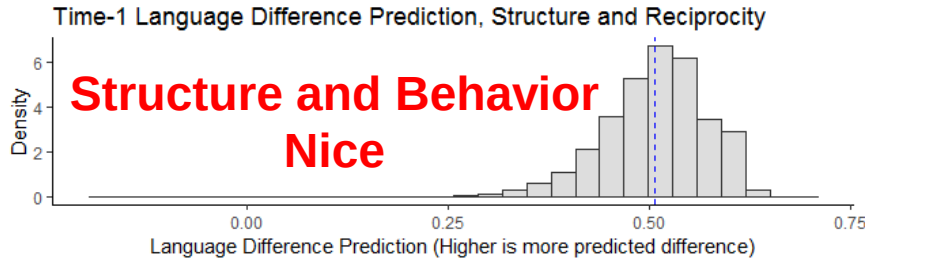


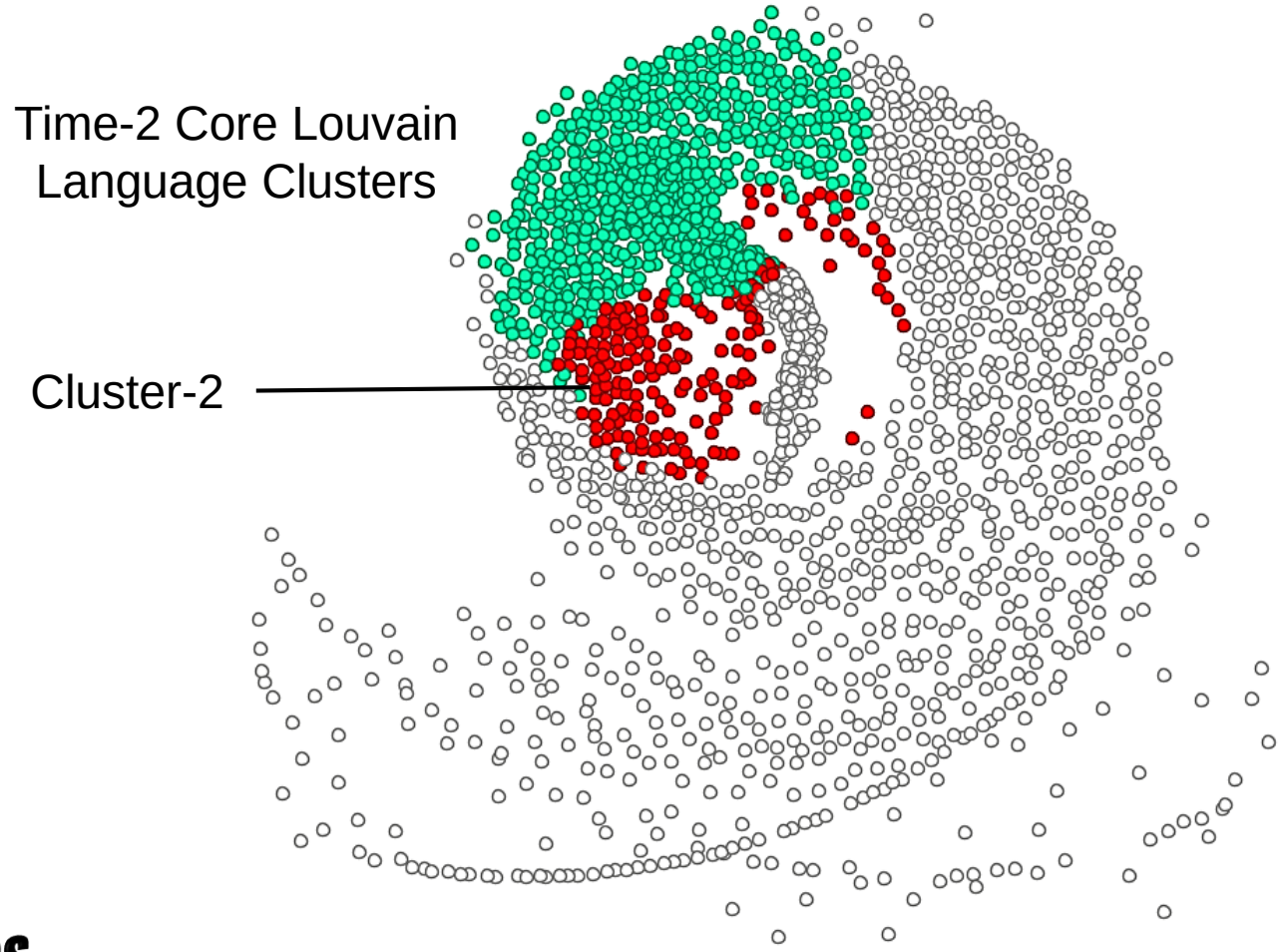




**We can generate a normalized prediction if we take into account structure AND behavior**

# Using scores as network tie strengths



# Example tokens from Cluster 2

**"Most Likely to be a token from Cluster-2"**

supervisor
services
representative
center
im
lol
doors
requests
unblocked
logistics

**"Least Likely to be a token from Cluster-2"**

management
hall
...
global
tpna
phr
international
delayed
controller
discussion

# Relating formal and informal social network structures to language structures

| Grouping-1 | Grouping-2 | Time-1 | Time-2 | Delta |
|---|---|---|---|---|
| Language Louvain | Legacy | 0.1754 | 0.6140 | + 0.4386 |
| Language Louvain | Functional Group | 0.1479 | 0.5827 | + 0.4348 |
| Language Louvain | Structural Louvain | 0.0112 | 0.0011 | - 0.0101 |

# Summary

- Organizational Micro-Cultures are important to understand if you want to enact change successfully in an organization
- Examining not only the behavior but also the text can reveal a great deal about these micro-cultures
- Constructuralism helps us think about and understand organizational behavior
- Corpora Comparison is an alternative to TF-IDF with some attractive properties, but not in ORA
- You can compare grouping agreement with an Adjusted Rand Score to better understand how your groups change in relation to each other over time.

# Questions

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