

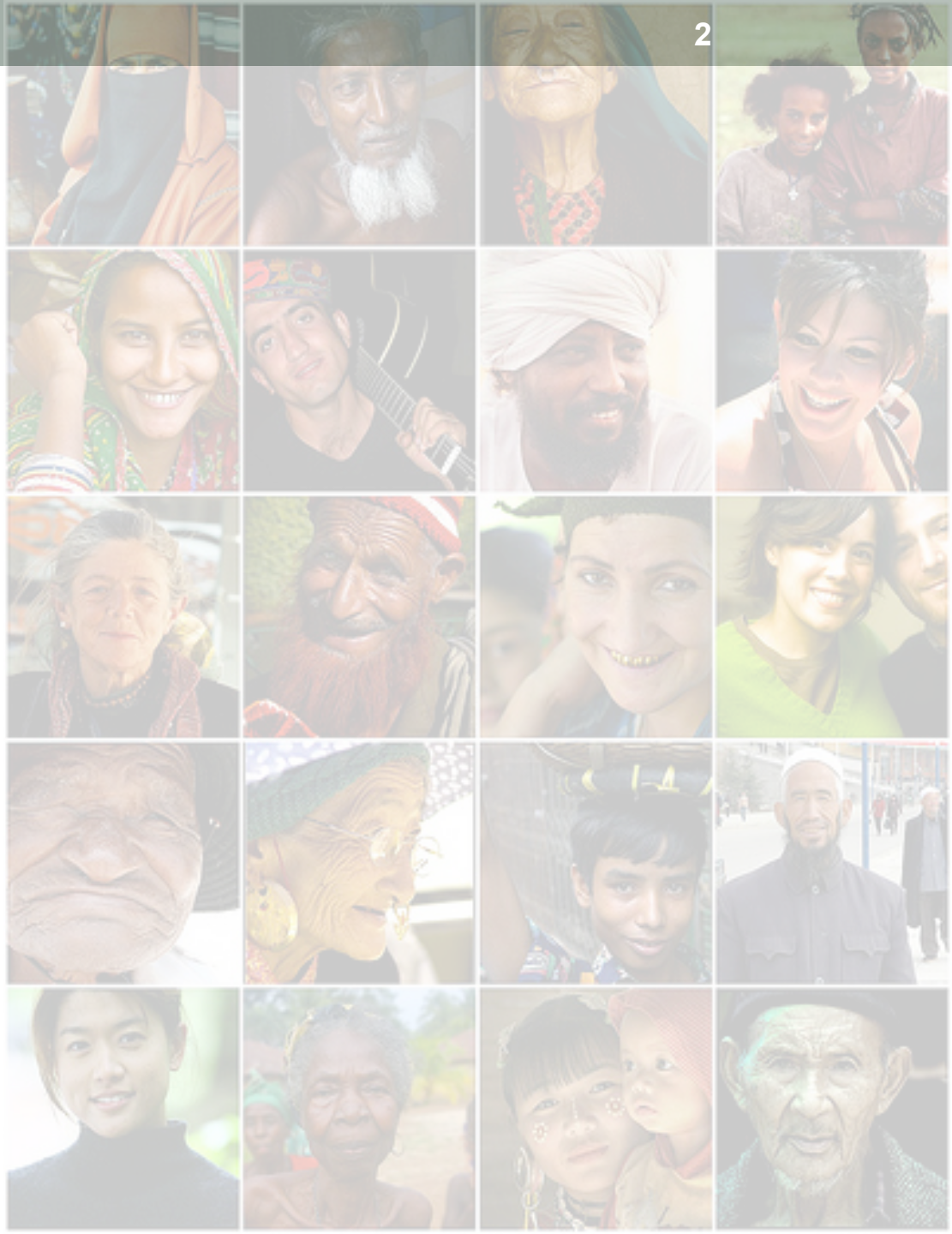
# **Cultural Dimensions in Twitter: Time, Individualism and Power**

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# Culture



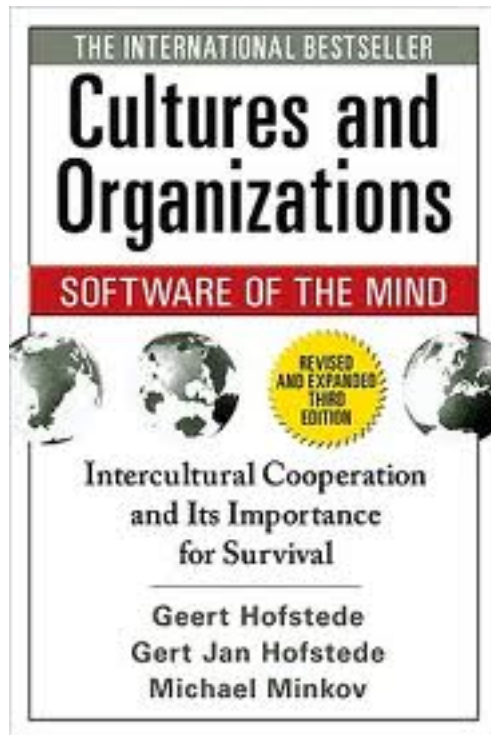
# Microblogs



# WHAT IS CULTURE ?

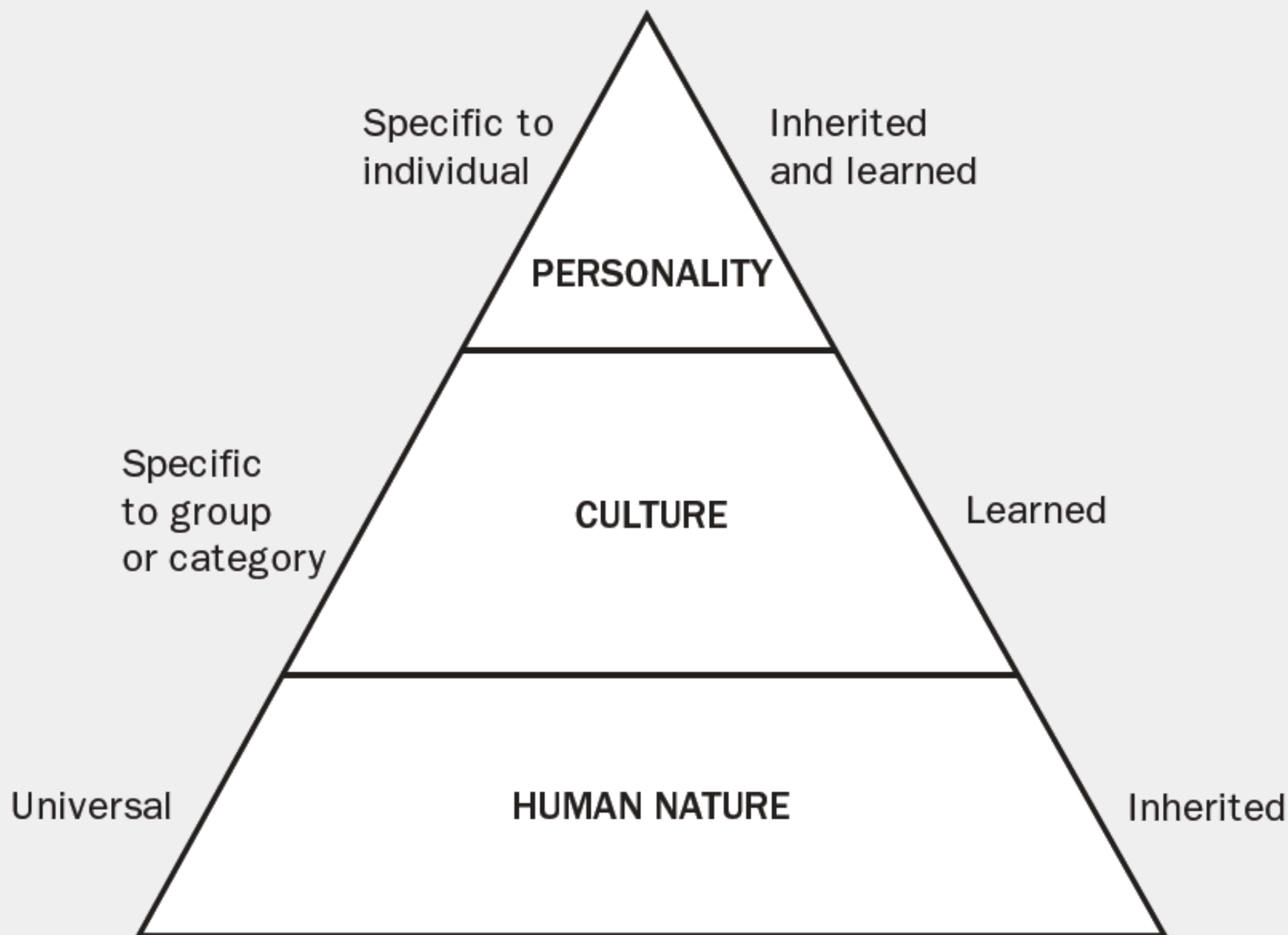


# CULTURE



**Culture is a dimension that distinguishes members of one group or category of people from others**

The background of the slide features a large, light blue globe in the center. Surrounding the globe are several smaller, light blue silhouettes of human figures, some standing and some sitting, arranged in a circular pattern around the globe. The overall theme is global and human-centric.





# HOW TO MEASURE CULTURE

- Geert Hofstede: Cultural dimensions

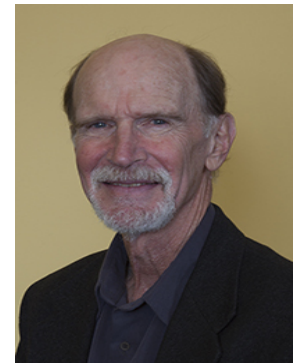
  - Individualism

  - Power Distance



- Levine : Pace of Life (Geography of time)

  - Perception of time



- Edward T. Hall

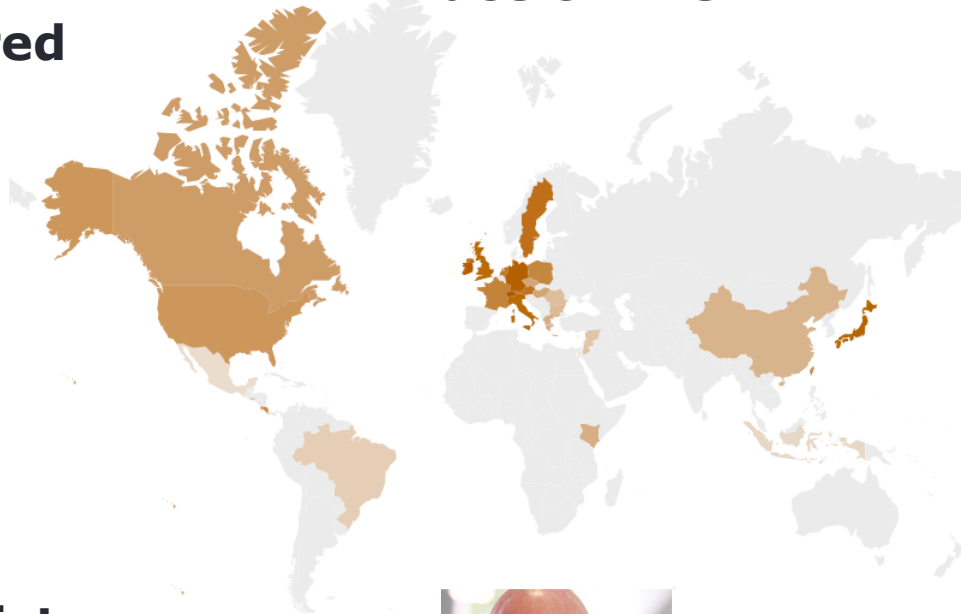
  - Monochronic vs Polychronic





# Pace of Life

Not considered



Levine



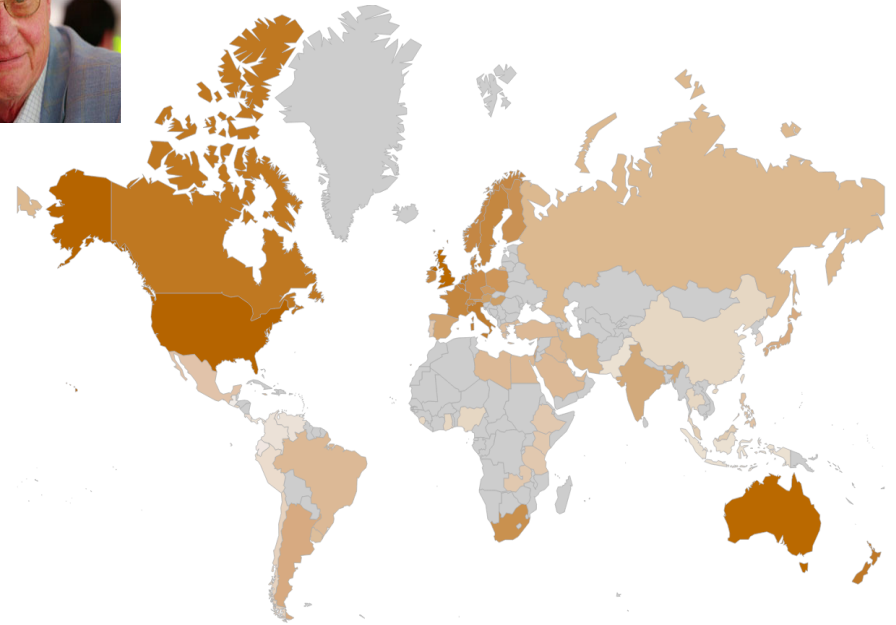
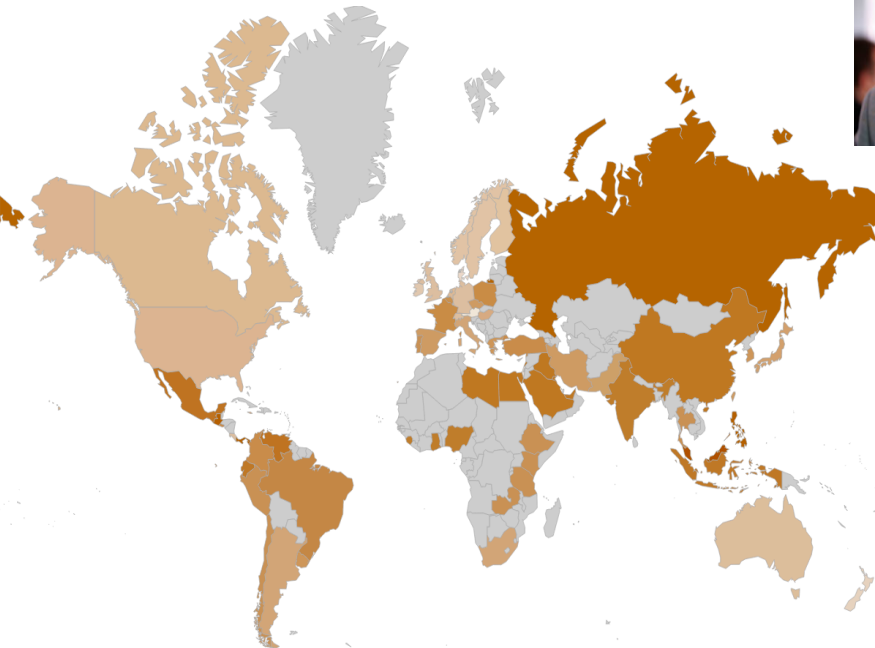
Hall



# Power Distance



# Individualism



# Culture and Social Media

**Can such differences also be captured from  
online interactions?**



# How to measure culture online?

- **Pace of Life**

Predictability (tweets, mentions)

Tweets in working hours



- **Individualism vs. Collectivism**

Users interacting with others (mentions)

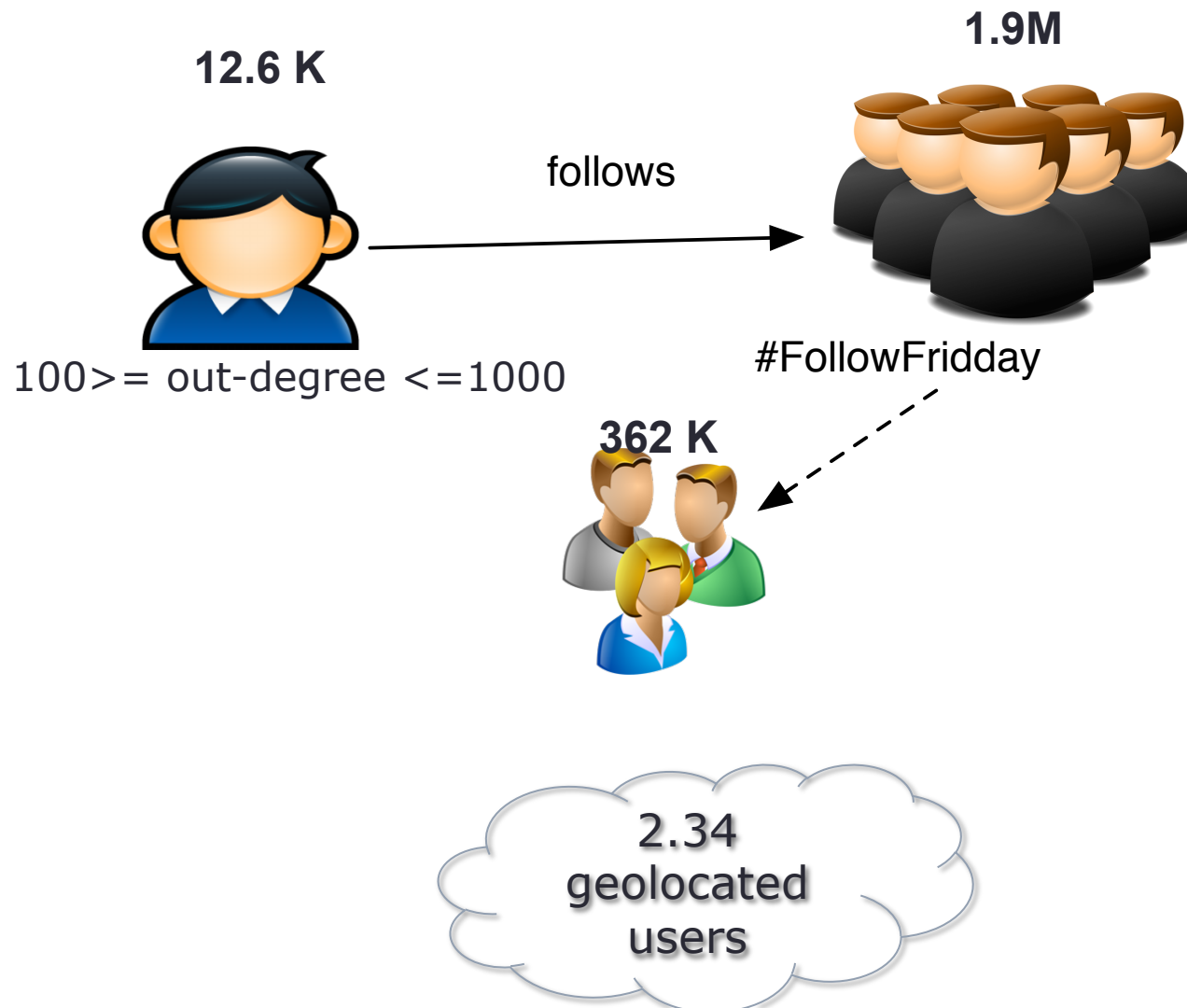


- **Power Distance : Popularity**

Follow, recommend and accept recommendation preferentially from more popular users (in-degree imbalance).

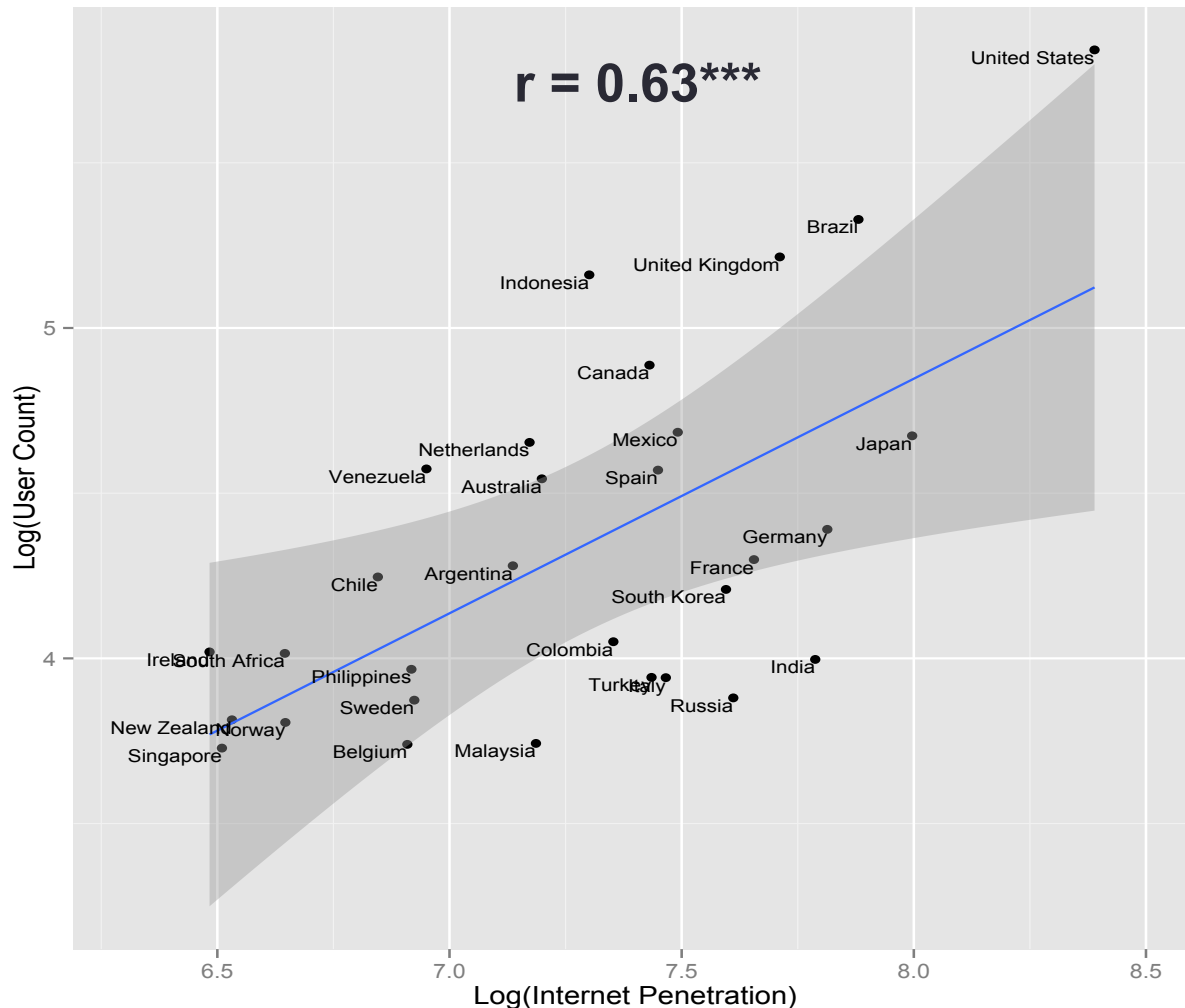


# Sampling for 10 weeks in 2011



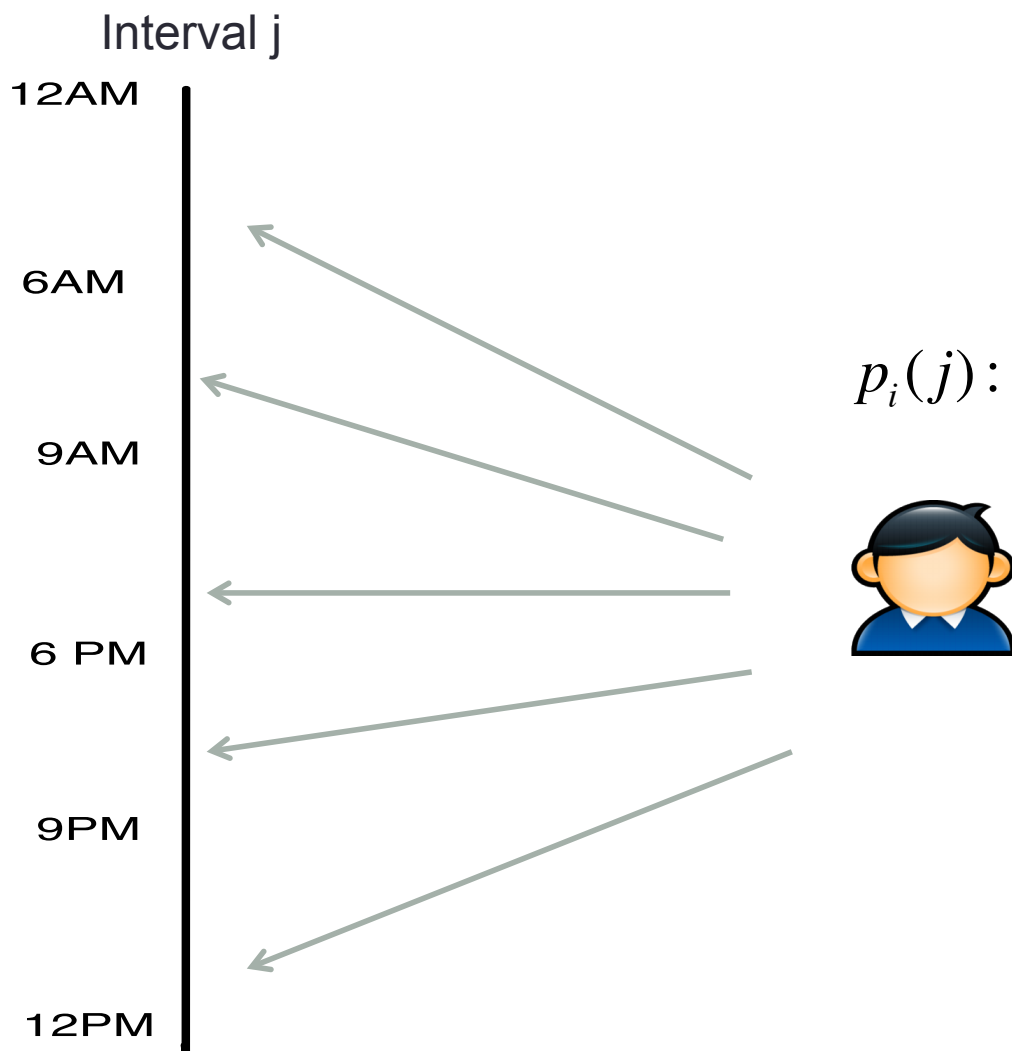
# Top 30 countries to study

*The top 30 countries by # of users is representative of internet users*



# RESULTS

# Pace of Life : Predictability



Entropy  
a) tweets    b) mentions

$$-\sum_{j=1}^{N_i} p_i(j) \log_2 p_i(j)$$

# tweets in  
working hours

# Pace of Life : Predictability

$p < 0:005$  (\*\*\*) ,  $p < 0:05$  (\*\*), and  $p < 0.1$  (\*)

	Tweets	Mentions	Users in working hours
Pace of life	** <b>-0.62</b>	** <b>-0.68</b>	** <b>-0.58</b>

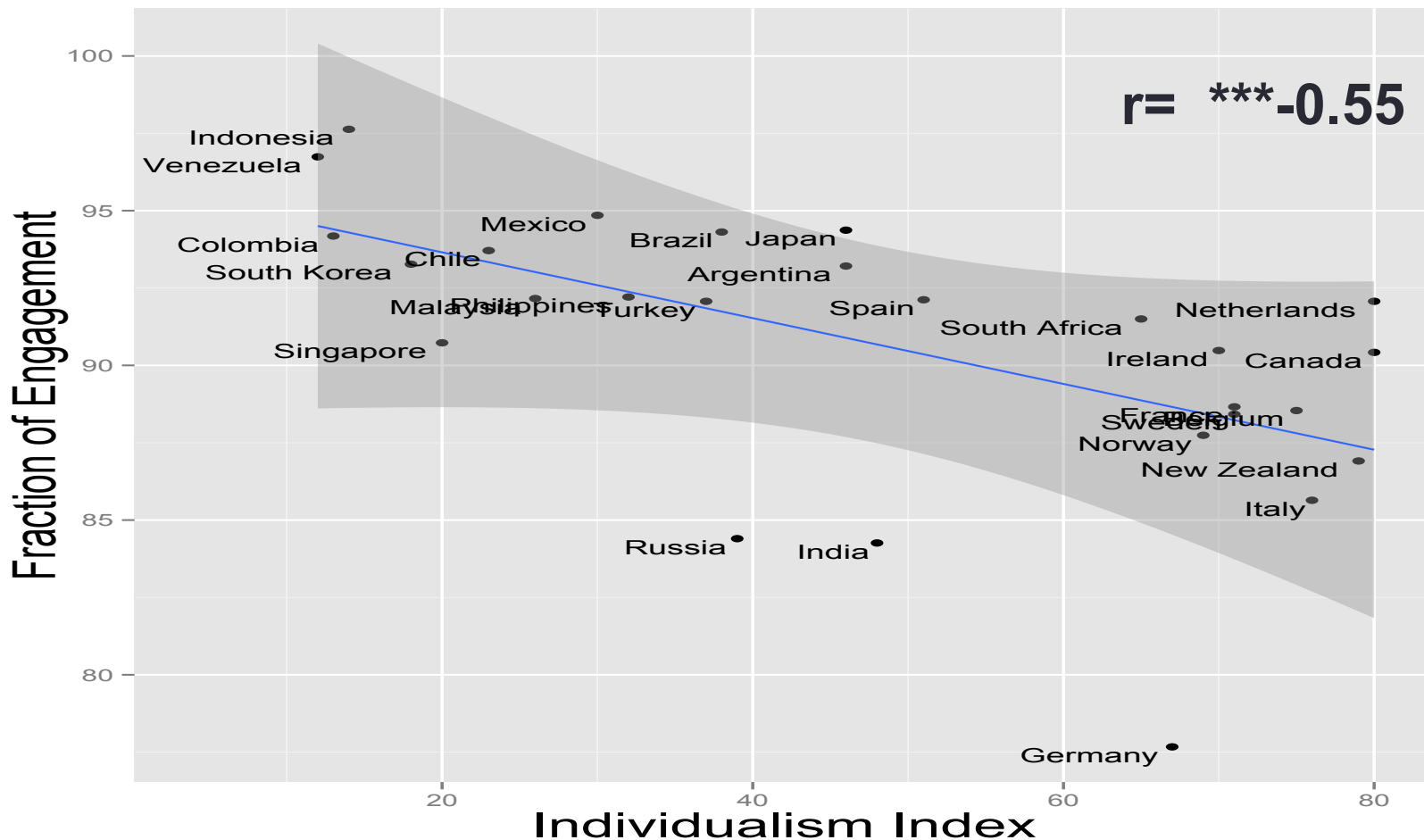
- The higher the pace of life , the more predictability
- The higher the pace of life the less fraction of users will tweet during working hours





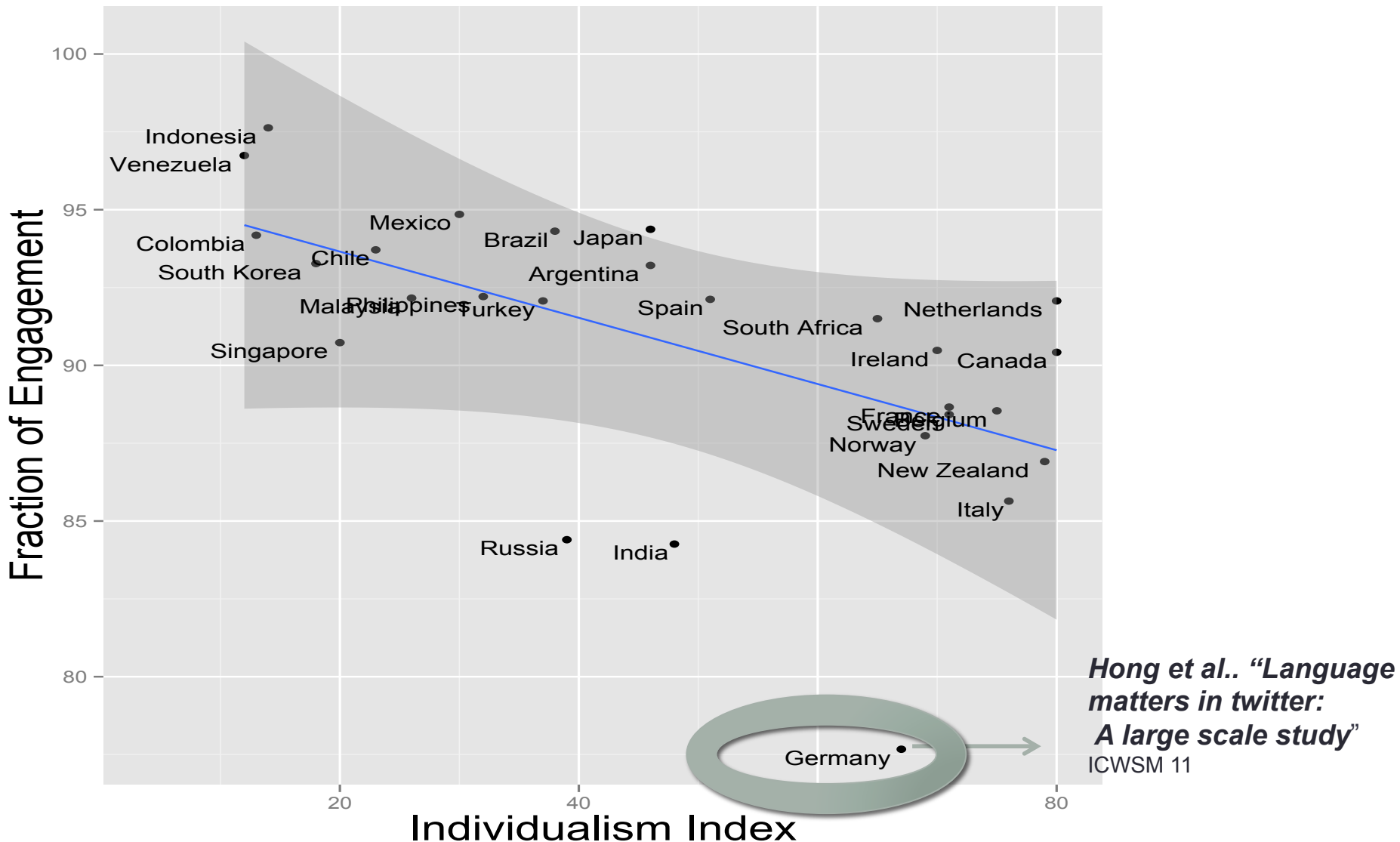
# Individualism : Interacting with others

→ **Collectivist countries interact more with others**



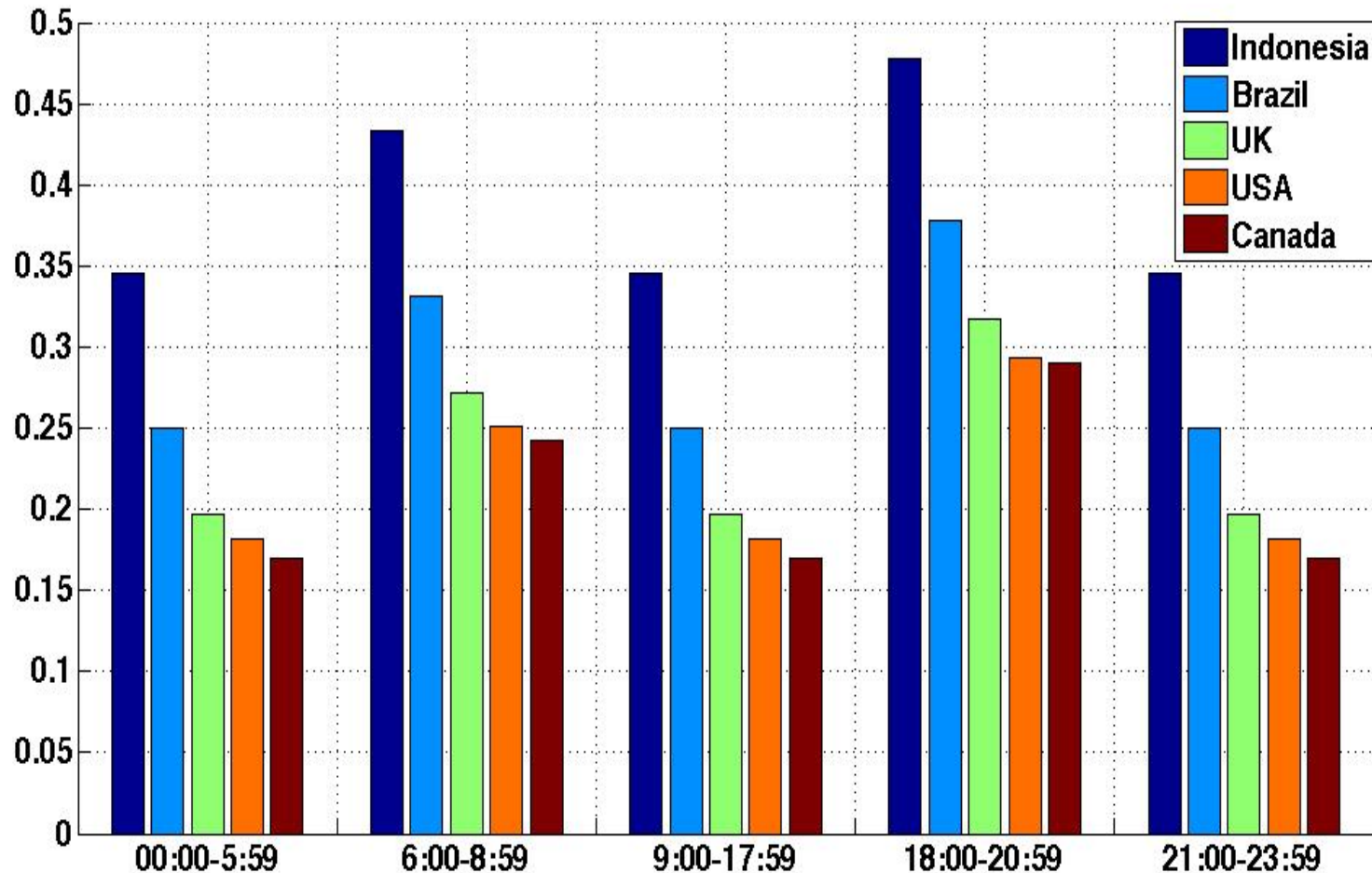
$p < 0:005$  (\*\*\*) ,  $p < 0:05$  (\*\*), and  $p < 0.1$  (\*)

# Individualism : Interacting with others

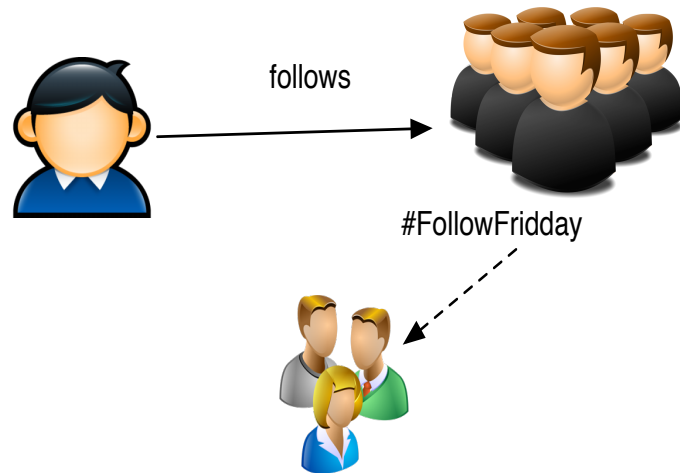


# Collectivism

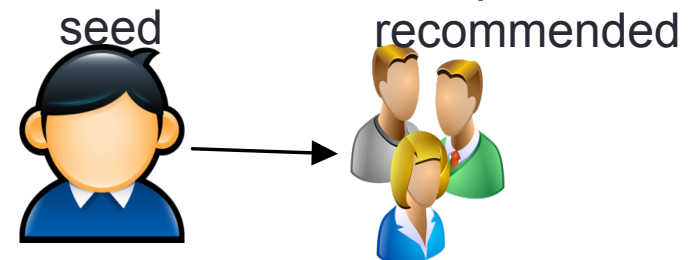
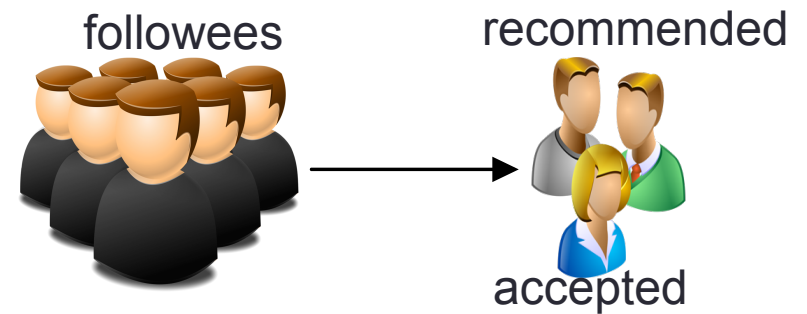
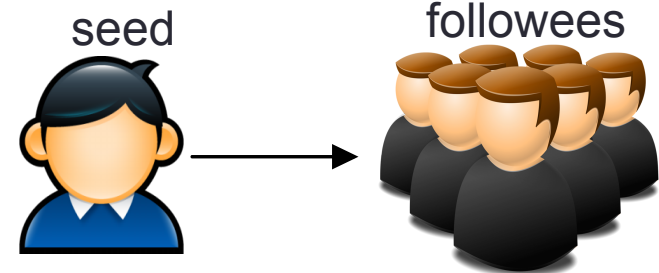
## Interacting with others



# Power Distance: popularity imbalance



Popularity imbalance for:



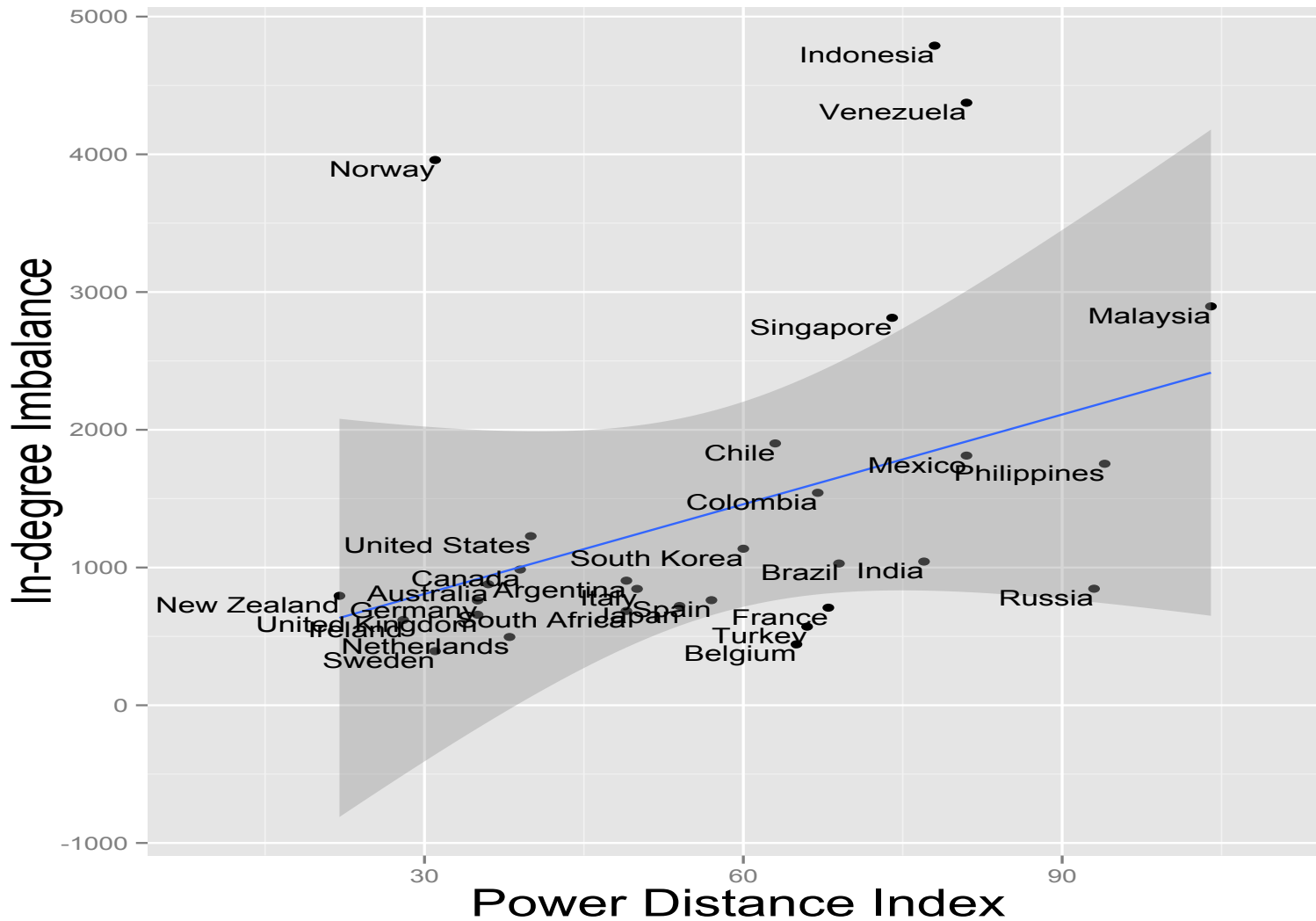
# Power Distance: popularity imbalance

	Followers	Followers/ Followees
Users and followees	** -0.62	** -0.67
Users and recommended user	** -0.56	** -0.46
User and accepted recommended user	-0.44	-0.29

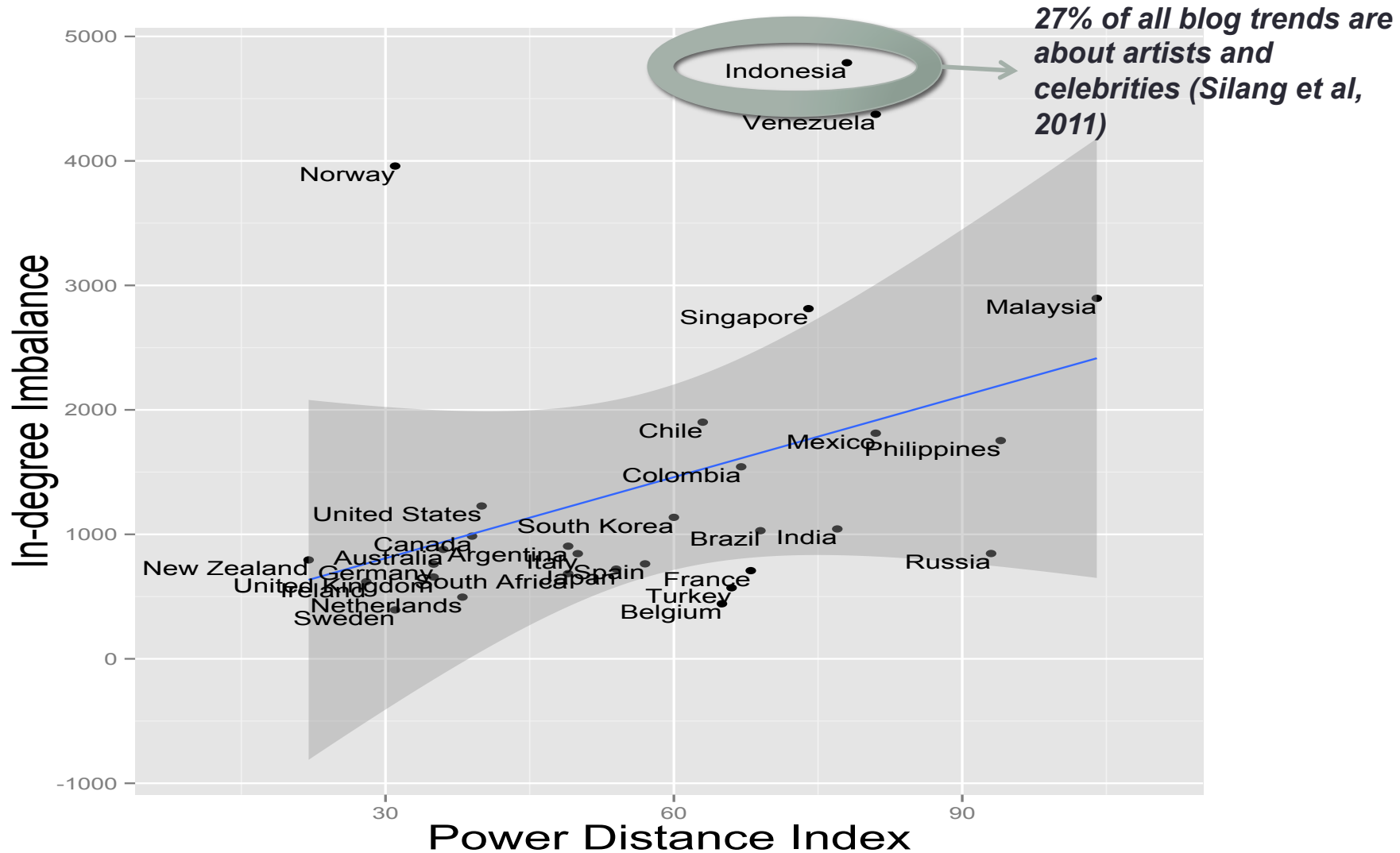
$p < 0:005$  (\*\*\*),  $p < 0:05$  (\*\*), and  $p < 0.1$  (\*)

Users prefer to follow and recommend more popular users than themselves in countries with a higher power distance

# Power



# Power



# Why is this important?

Indicator	Pace of Time : Predictability		Individualism: Mentions	Power Distance: Imbalance
	Mentions	Users (%)		
GDP per capita	***0.55	** -0.57	** -0.41	** -0.48
Education	***0.58	** -0.51	-0.24	*** -0.60
Inequality	*** -0.53	** 0.49	* 0.39	*** 0.58



# What is next? More features

- Language dependent features
- More Cultural Dimensions
- Temporal comparisons

# What is next? Application

- **User recommender**
  - **Individualistic vs. collectivistic ?**
  - **Predictable vs. unpredictable ?**
- **Interfaces personalization**
  - **Do collectivist countries need additional features to interact easier?**
  - **More engagement?**
- **Information Propagation**
  - **By knowing the cultural characteristics of users, can we increase re-tweet chance?**

Thank you  
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