



Exploring False Story Dynamics in the *Black Panther* Twitter Conversation

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Event: *Black Panther* Release

- 3rd highest grossing film in US
- Most tweeted about film ever
- Hyped on social media for its representation of African and African-American actors and creators



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Four False Stories on Twitter

1. Fake Attacks
2. Fake Attacks – Satire
3. Fake Scenes
4. Pro-Alt-Right

Wow! I'm convinced that #BlackPanther is actually #AltRight. It just makes sense.



#blackpantherisaltright #MWGA

7 23 59

Show this thread

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Data Description

- Twitter API search (both rest and stream)
 - by #BlackPanther
 - by reference to false story posts
- Subsets by type of false story and by time
 - we are going to concentrate on the Fake Attack posts and reactions (retweets/replies)
 - Feb 15 through Feb 17
 - Total of 1869 Tweets including 60 Fake Attack origin tweets

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Exploring the data with ORA

Three Goals:

1. Find central actors
2. See how the message of these actors diffused over time.
3. Evaluate these diffusion pattern by comparing them to what it is observed in synthetic networks.

Need to create Dynamic Meta-Networks in ORA:

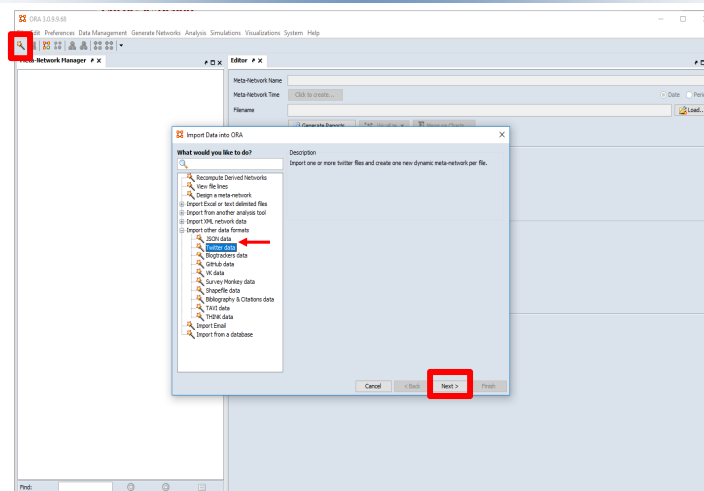
1. Time slices
2. Cumulative



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ORA - Import Twitter Data



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Time Slices – Just Import

ORA 10.0.9.87
File Edit Preferences Data Management Generate Networks Analysis Simulations Visualizations System Help

Meta-Network Manager

Import Data into ORA

Select the better data format:

Select one or more data files:

General options:

Accept only concepts:

Time message options:

Daily aggregation options:

Geographical options:

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Dynamics Measures – Quick Look

ORA 10.0.9.87
File Edit Preferences Data Management Generate Networks Analysis Simulations Visualizations System Help

Meta-Network Manager

Dynamic Measures

Generate Reports... Visualize Measure Checks View Trails...

Statistics:

Network count: 4

Data count: 0

Current date: 2019-02-15 18:00:00

Latest date: 2019-02-17 18:00:00

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Dynamics Measures – Quick Look

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Dynamics – Most Central Users

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Dynamics – Most Central Users

Time Slices – Merge

The screenshot shows the Keyframe Meta-Network Manager application. The left sidebar contains a list of meta-networks and a menu with options: 'Add New Meta-Network', 'Remove Selected Meta-Network', 'Meta-Network Transform...', 'Meta-Network Union...', 'Meta-Network Interact...', 'Meta-Network Diffusion...', 'Meta-Network Conform...', 'Create a dynamic meta-network', and 'Save selected'. The main window displays the details for a meta-network named '2018-02-13 00 PM'. The details include: Meta-Network Name, Meta-Network Time, Name, General statistics (Server count, Redund count, Node count, Network count), Link statistics (All links, Non self-loops, Non self-loop values, Self-loops, Self-loop values), Component statistics (Isolates, Dynals, Trivals, Larger), and Larger sizes (Min, Max, Mean, Stddev).



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Time Slices – Merge

The process involves three steps in the Meta-Network Union tool:

- Select the meta-networks to union:** Choose the meta-networks to union from either those already loaded or from a directory. The tool lists several meta-networks, including "Twitter 2008-02-15 06 PM" and "Twitter 2008-02-15 12 PM".
- Select nodesets and networks:** Select the nodesets and networks to include in the union. The tool lists several nodesets and networks, including "Agent", "Location", "Tweet", "Agent x Agent - All Communication", "Agent x Agent - Common Settings", "Agent x Agent - Mentioned-By", and "Agent x Agent - Quoted-By".
- Select a union method to run:** Set the parameters for the union using the tab pages below. The settings across all tabs will be used. The tool lists several methods, including "Link Options", "Attribute Options", "Custom Attributes", and "Link values combine method".

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Merged all-communication network

The graph displays a complex network structure with numerous nodes and edges, representing a merged all-communication network. The nodes are represented by red dots, and the edges are represented by red lines. The network is highly interconnected, with many nodes having multiple connections.

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Lets try to generate a similar synthetic network!

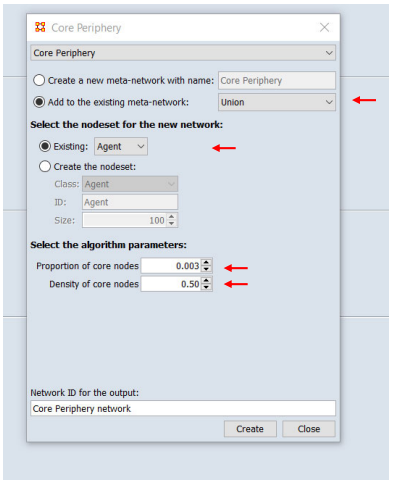
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Synthetic Network

- The way that Twitter records interactions makes networks look like stars.
- We can create a similar structure by using a Core Periphery generative process.
- We choose a proportion of core nodes similar to what we observed on our empirical network.



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Synthetic Network

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Diffusion of Ideas

- Lets run a diffusion of ideas microsimulation on our synthetic network.
- Lets determine 3 of our core agents as seeds for the simulation.
- In my case these are:
 - A1380255780119
 - V1380256558086
 - S1380256229116

Micro Simulation

The Micro Simulations dialog allows you to run some fairly basic simulations on the visualization. Link weights are important, as are how many are simulated. Two correspond to the probability of a transmission. Costs (negative weight links) are ignored.

First, select a network. Then select the square networks that use that class that you want to use in your simulation.

Agent:

- ☐ Agent x Agent - Influenced By
- ☐ Agent x Agent - Responded By
- ☐ Agent x Agent - Replied By
- ☐ Agent x Agent - All Communication
- ☐ Agent x Agent - Responded
- ☐ Agent x Agent - Common Interests
- ☐ Agent x Agent - Quoted By
- ☐ Core (Temporary network)

Micro Simulation

Select the nodes that will act as the seeds for your simulation.

Node ID	IS_VERIFIED	LANGUAGE	LOCATION	Node Label	NUMBER	TWEET
91380255780119	en				1	0
91380255780119	en				1800	2
91380255780119	en		San Francisco		7321	2
91380255780119	en		Paris		1279	10
91380255780119	en				486	3
91380255780119	en		Republic of K...		432	19
91380255780119	en				148	6
91380255780119	en		Discount (B...	MEET Suprem...	437	2
91380255780119	en				1532	4
91380255780119	en				17	2
91380255780119	en		Miami Beach...		84	4
91380255780119	en		Paris	PhotoHub	1483	3
91380255780119	en		San Francisco		3109	1
91380255780119	en		The get		194	1
91380255780119	en		Developers		1483	1
91380255780119	en		Bryant		123	1
91380255780119	en		Guatemala City		16	1
91380255780119	en		kuah@kuah...		634	1
91380255780119	en				188	1
91380255780119	en		anime/games...		834	1
91380255780119	en				135	1

3 / 1775 Selected, 1771 / 1775 Visible

Cancel

Back Next

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Diffusion of Ideas

Meta Network Manager

Dynamic Meta Network: Union

Statistics

Keyframe count: 9

Delta count: 0

Earliest date: 2019-06-16 10:11:14

Latest date: 2019-06-24 10:11:14

Number of periods to run for: 9.5

Condition Number: 1.5

Generate MicroSimulation Matrix

Cancel

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Diffusion of Ideas

- The overall diffusion is orders of magnitude below what we observed!
- What could be the reason for the difference?
- What synthetic network would produce more comparable results?

Charts: x, y

Process values: Post-Hoc Transformation: Change Detection: Color Grid

Value

Date

Centrality, Out Degree - Simulation Links (2)

Centrality, Out Degree - Simulation Links (1)

Centrality, Out Degree - Simulation Links (0)

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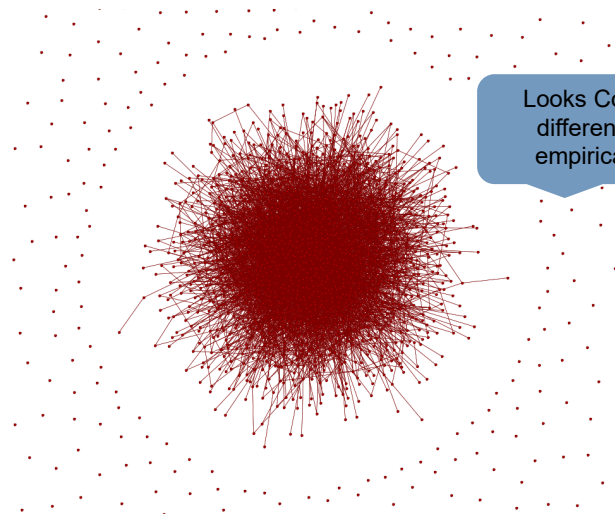
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Synthetic Network V2

- Lets Generate a Scale Free Network, with a similar number of hubs.
- Probability thresholds are decided based on phase transition values for the emergence of a giant component for the pendant nodes given the size of the network.

Synthetic Network V2



Looks Considerably different from our empirical network

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Diffusion of Ideas V2

- Lets select the our hub agents.
- We can do it based on row sums in our network view.
- In my case these are:
 - R1380256383111
 - Z1380256525097
 - A1380256447110

The screenshot shows the 'Network: Scale Free network' interface. On the left, a list of nodes is displayed with their IDs and associated values. A context menu is open over the node list, showing options for sorting and filtering. The 'Row Nodes' tab is selected, and the 'Sort high to low by row sum' option is chosen. The menu also includes options for sorting by Node ID, selecting all row nodes, and showing/hiding selected row nodes.

Node ID	Value
R1380256383111	27
D1380255775114	27
Z1380256525097	26
A1380256447110	26
L1380256413114	26
d1380256254101	27
L1380255776116	27
W1380255394907	27
C1380257405104	27
d1380256630101	27
L1380256346114	27
K1380256661015	27
D1380257279097	27
R1380256418079	27
x1380256405101	27
x1380256408095	27
L1380256329111	27
L1380255936114	27
R1380256401211	26
L1380257760097	26
L1380255825107	26

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Diffusion of Ideas V2

The screenshot displays the 'Diffusion of Ideas V2' software interface, which is used for simulating the spread of ideas. It consists of three main windows:

- Micro Simulation (Left):** This window allows users to select agents for simulation. It includes a list of agents (e.g., Agent x Agent - Autonomous, Agent x Agent - Networked) and checkboxes for various simulation parameters like 'Agent x Agent - Respected', 'Agent x Agent - Respected by', 'Agent x Agent - All Communication', 'Agent x Agent - Reciprocal', 'Agent x Agent - Content Hallways', 'Agent x Agent - Quoted By', 'Core Temporal Intensity', and 'Scale from network'.
- Select the nodes that will act as the sources for your simulation (Middle):** This window displays a table of nodes. The table has columns for Node ID, Country, Location, and Transmission Rate. The nodes are listed in a table with columns: Node ID, Country, Location, and Transmission Rate. The nodes are listed in a table with columns: Node ID, Country, Location, and Transmission Rate.
- Micro Simulation (Right):** This window contains simulation settings. It includes a 'Select a Simulation' dropdown, a 'Set Transmission Resolutions' section, and a 'Number of periods to run for' field. The 'Number of periods to run for' field is set to 10.

Arrows indicate the flow of the simulation process: from the first window to the second, and then from the second to the third.

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