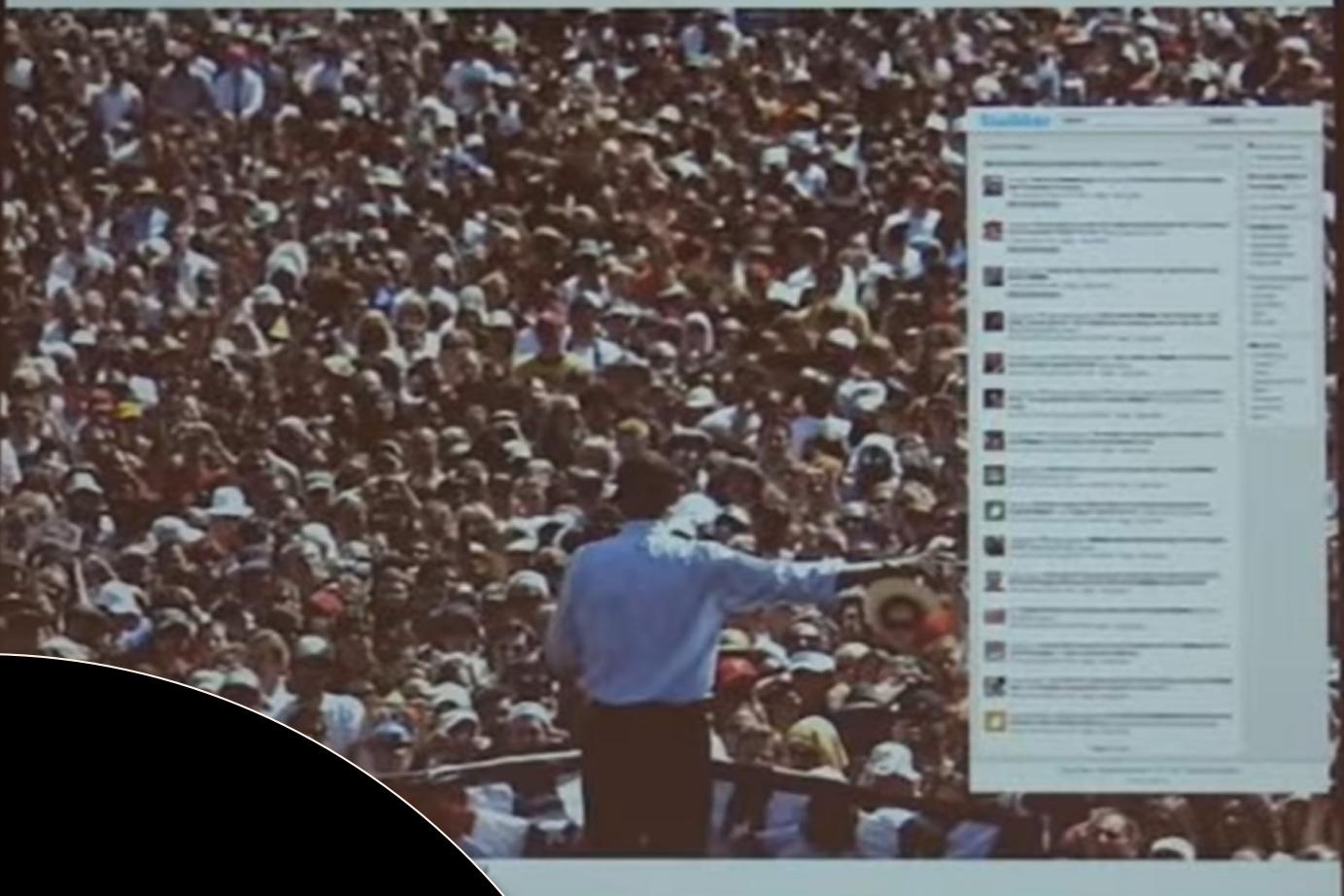


# The core principle of VNA

(with force-directed layouts)

Mathieu Jacomy  
Aalborg University TANT-Lab

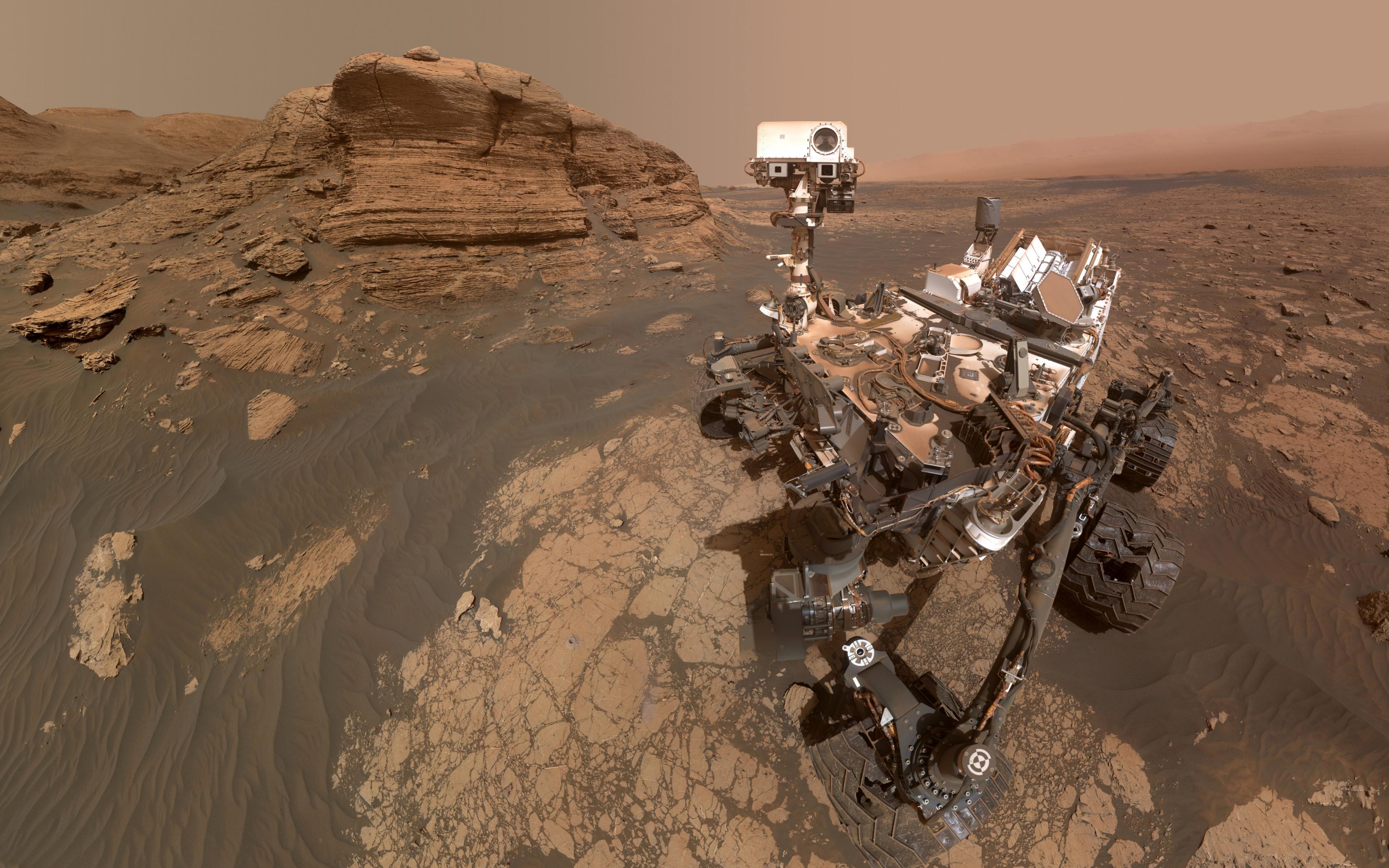
You can use this space  
for panel overlay,  
nothing important  
will be displayed here.

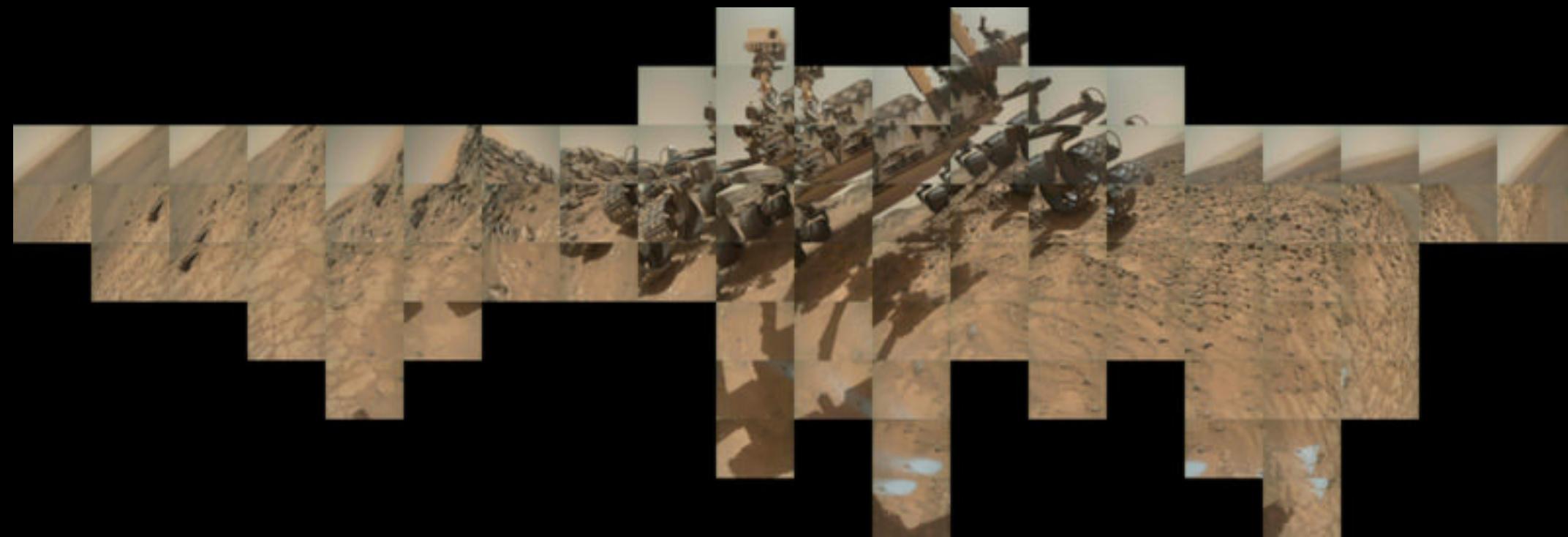


“We lose the *crowdness* of the **crowd** when it happens **online**, and that is in part because we don’t have a camera to take a picture of it. But we could **build** one...”  
– Marc Smith

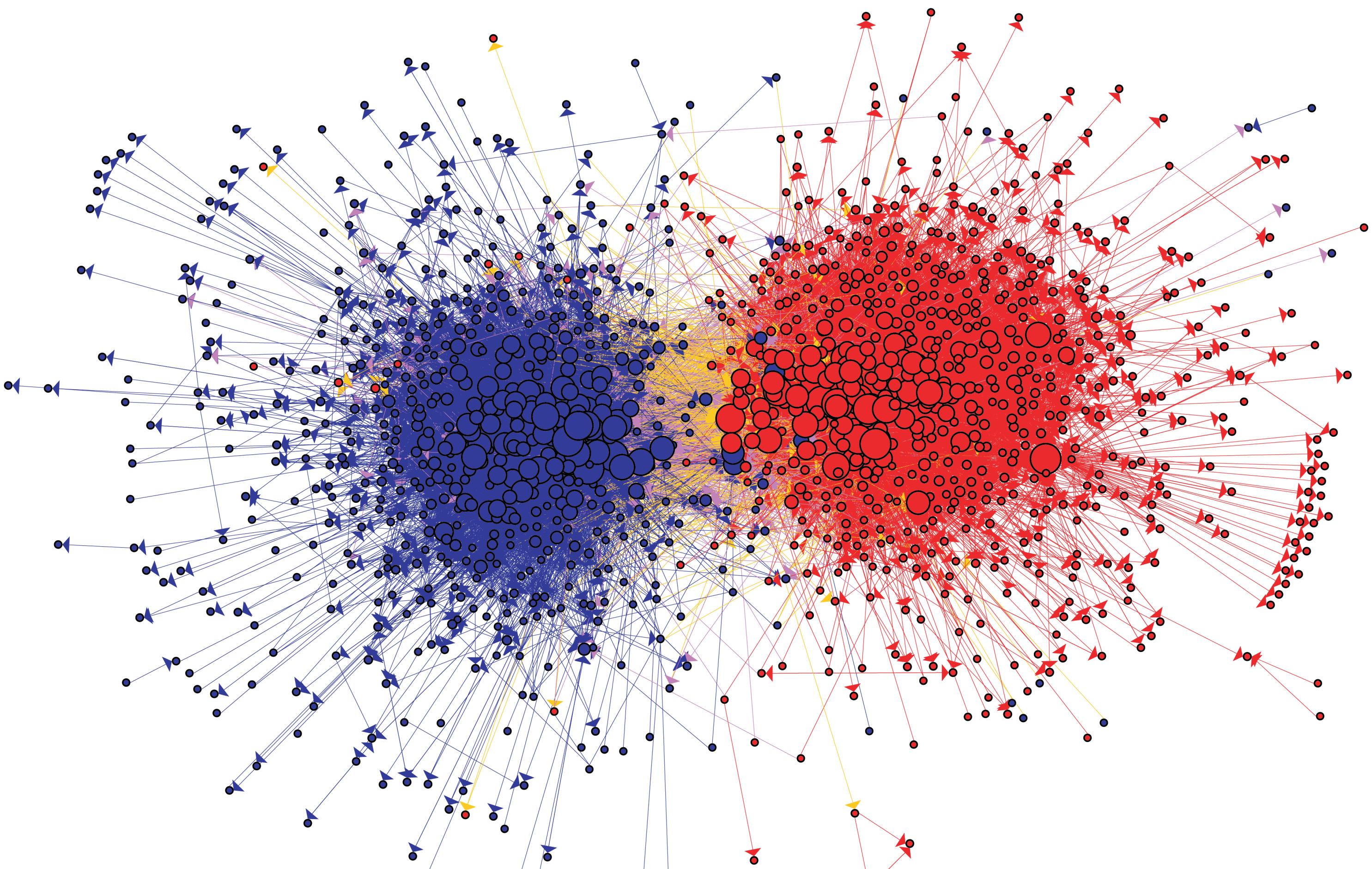






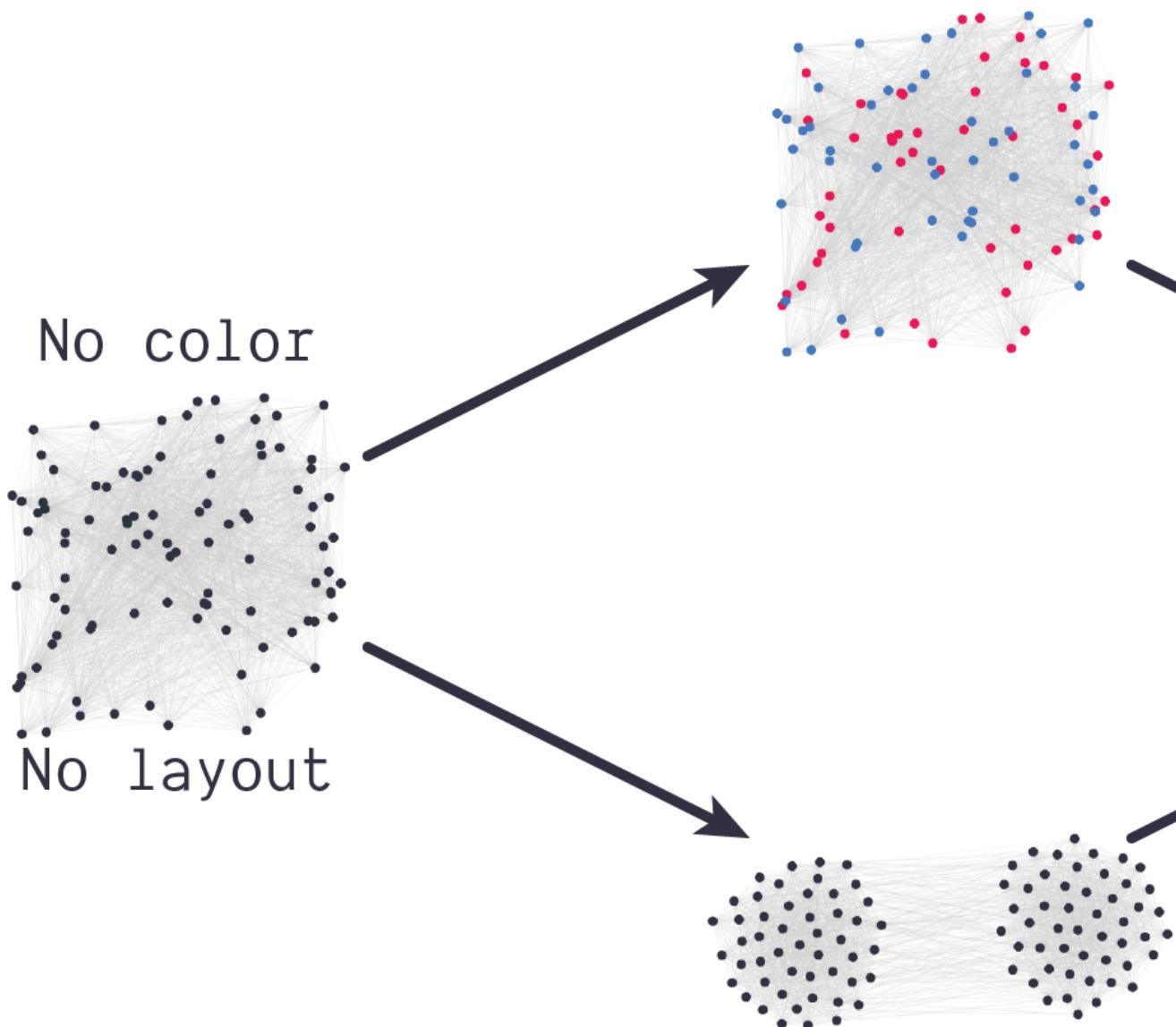






Adamic, L. A., and Glance, N. (2005) The political blogosphere and the 2004 US election: divided they blog, Proceedings of the 3rd international workshop on Link discovery, pp. 36-43.

Color =  
ATTRIBUTE X



*Is there an  
attribute-topology  
CORRELATION?*

YES

or

NO

*Nodes of same  
attribute X  
are more often  
connected*

*Attribute X  
and edges  
are unrelated*

Adamic, L. A., and Glance  
tion: divided they blog, P  
very, pp. 36-43.

## Visualizing Computational Social Science: The Multiple Lives of a Complex Image

Brooke Foucault Welles<sup>1</sup> and Isabel Meirelles<sup>1</sup>

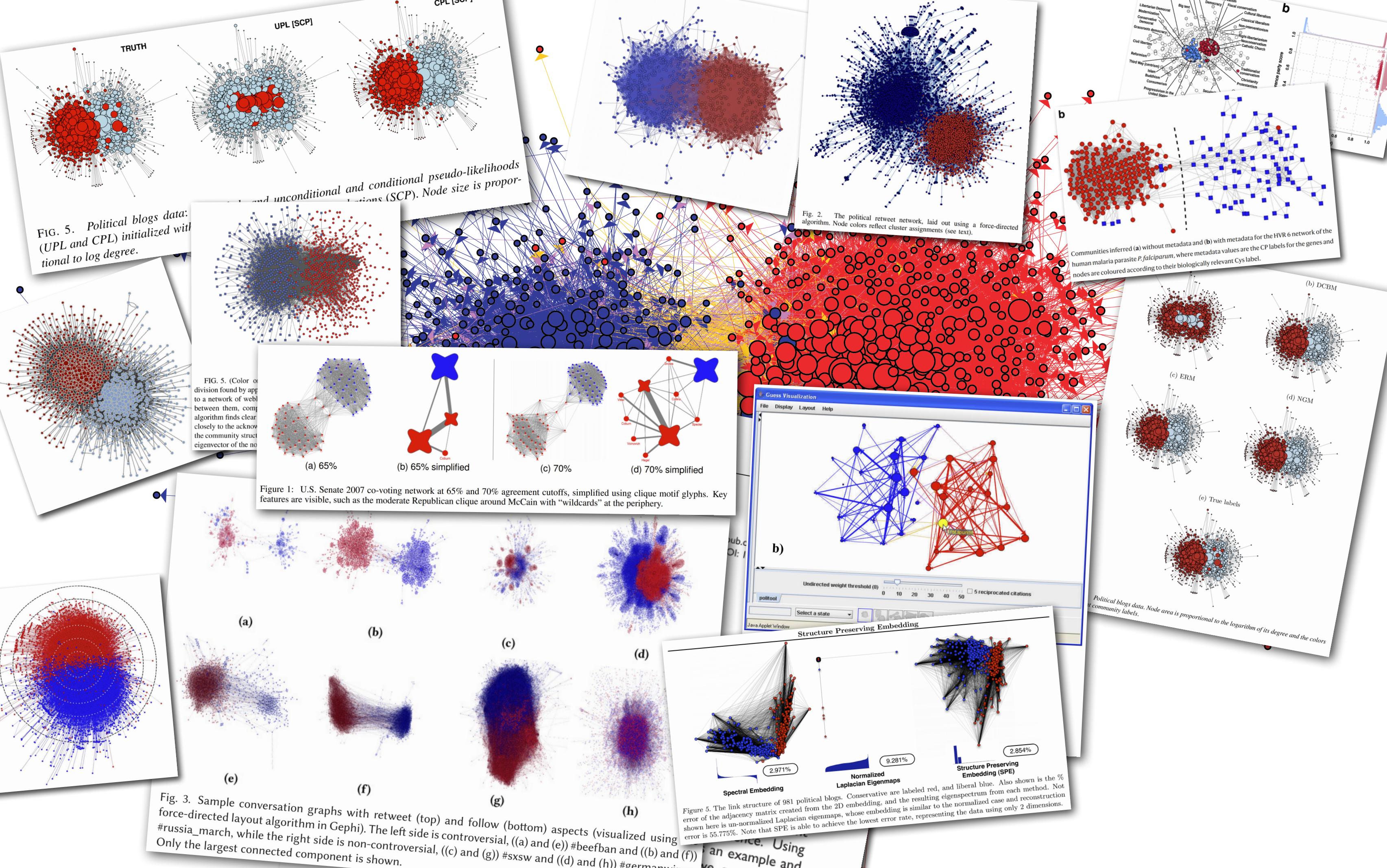
### Abstract

Parallel advances in communication and visualization technologies have enabled the study and visualization of human behavior at a scale and level of detail never before possible. Nowhere are these advances more evident than within the emerging field of computational social science. Using Adamic and Glance's image of the political blogosphere as an example and social representations theory as a guiding framework, we demonstrate how computational social science visualizations may change our understanding of this new scientific discipline and its practices for the future.

Science Communication  
1–25  
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US elec-  
link disco-





Most of the time, the network  
has no obvious divide.  
**Where are the groups?**



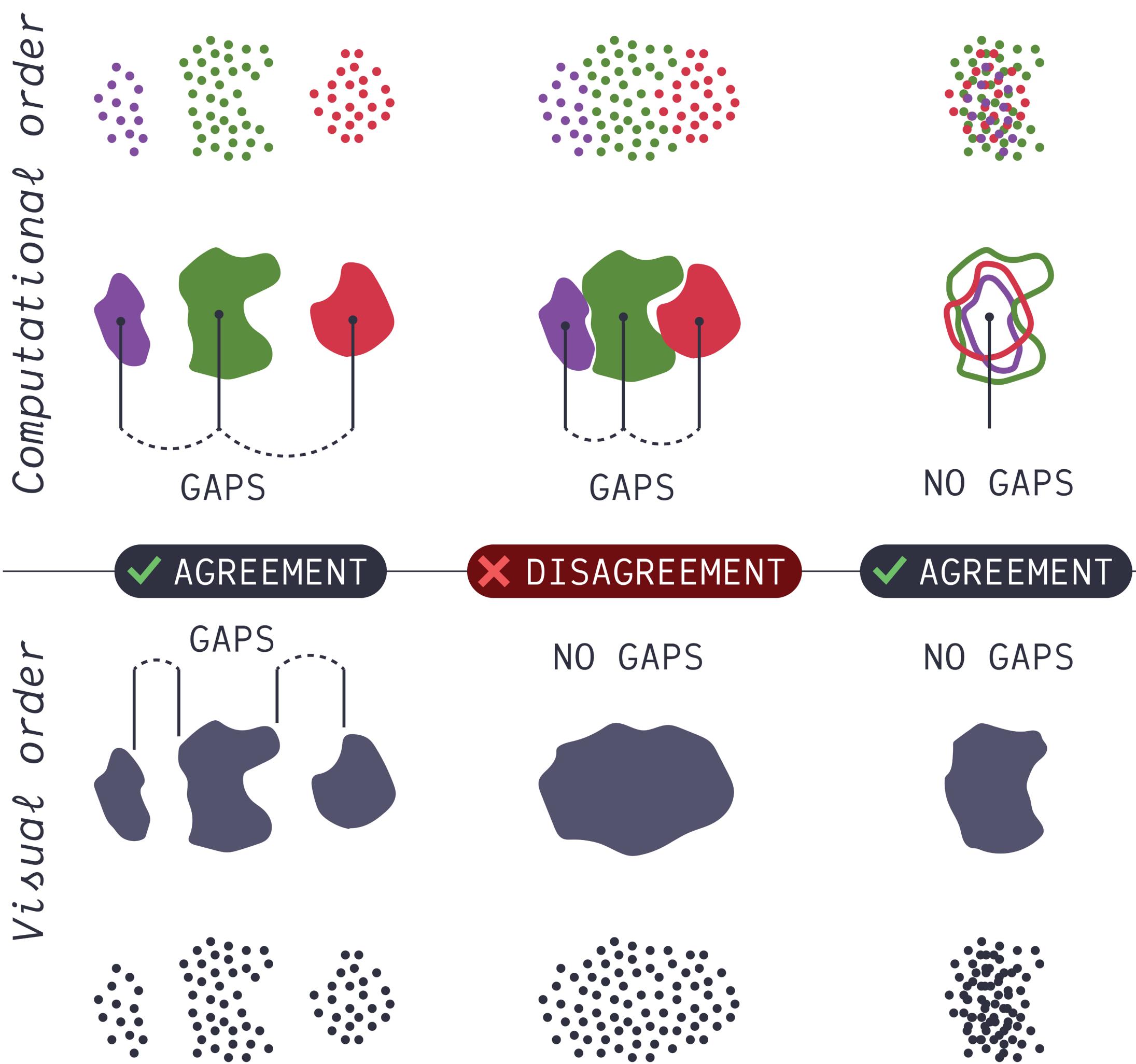
*C. Elegans* network, LinLog energy model. Network from Watts, D. and Strogatz, S. (1998) 'Collective dynamics of "smallworld" networks', Nature, 393, pp. 440–442.

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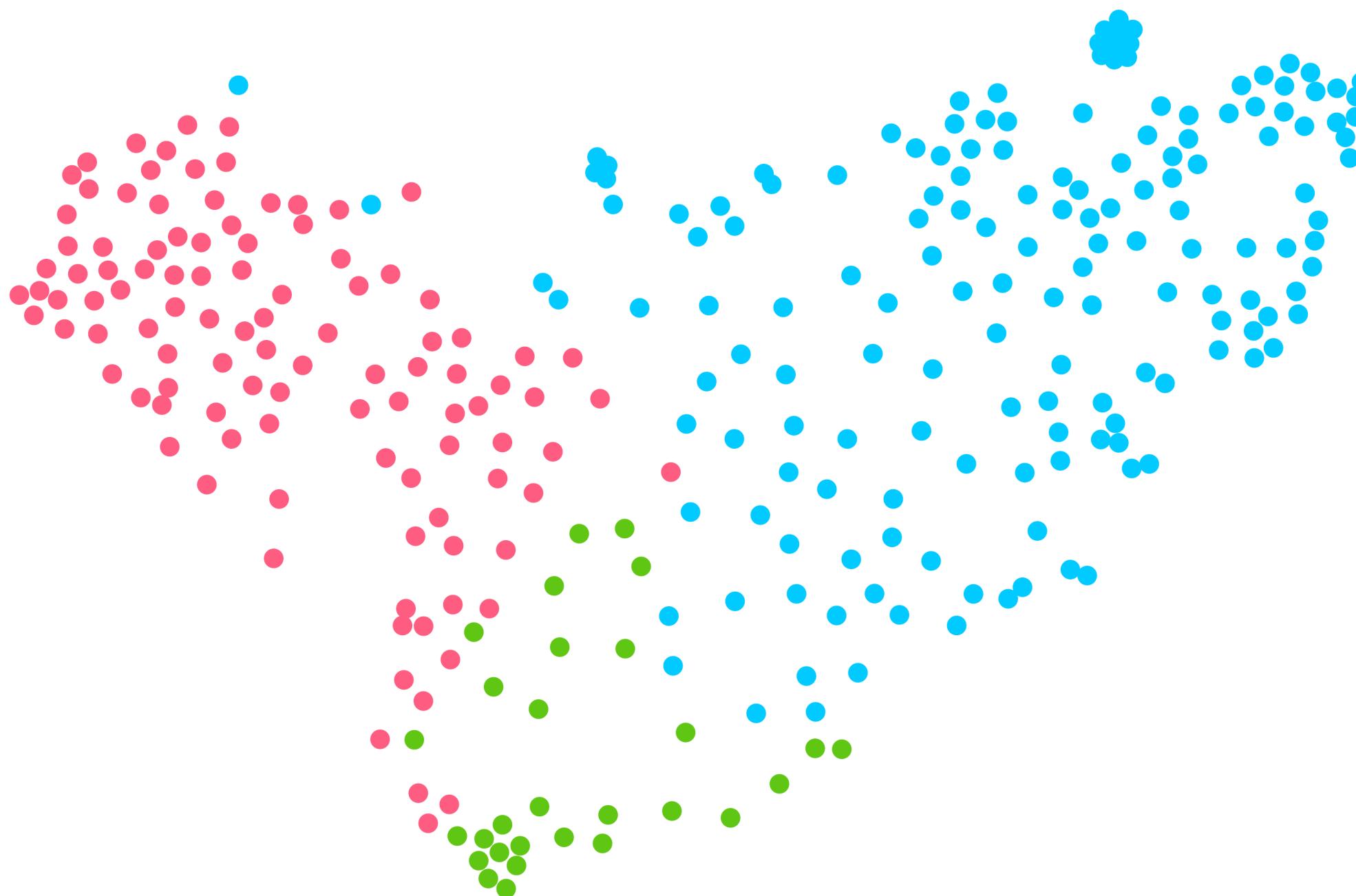


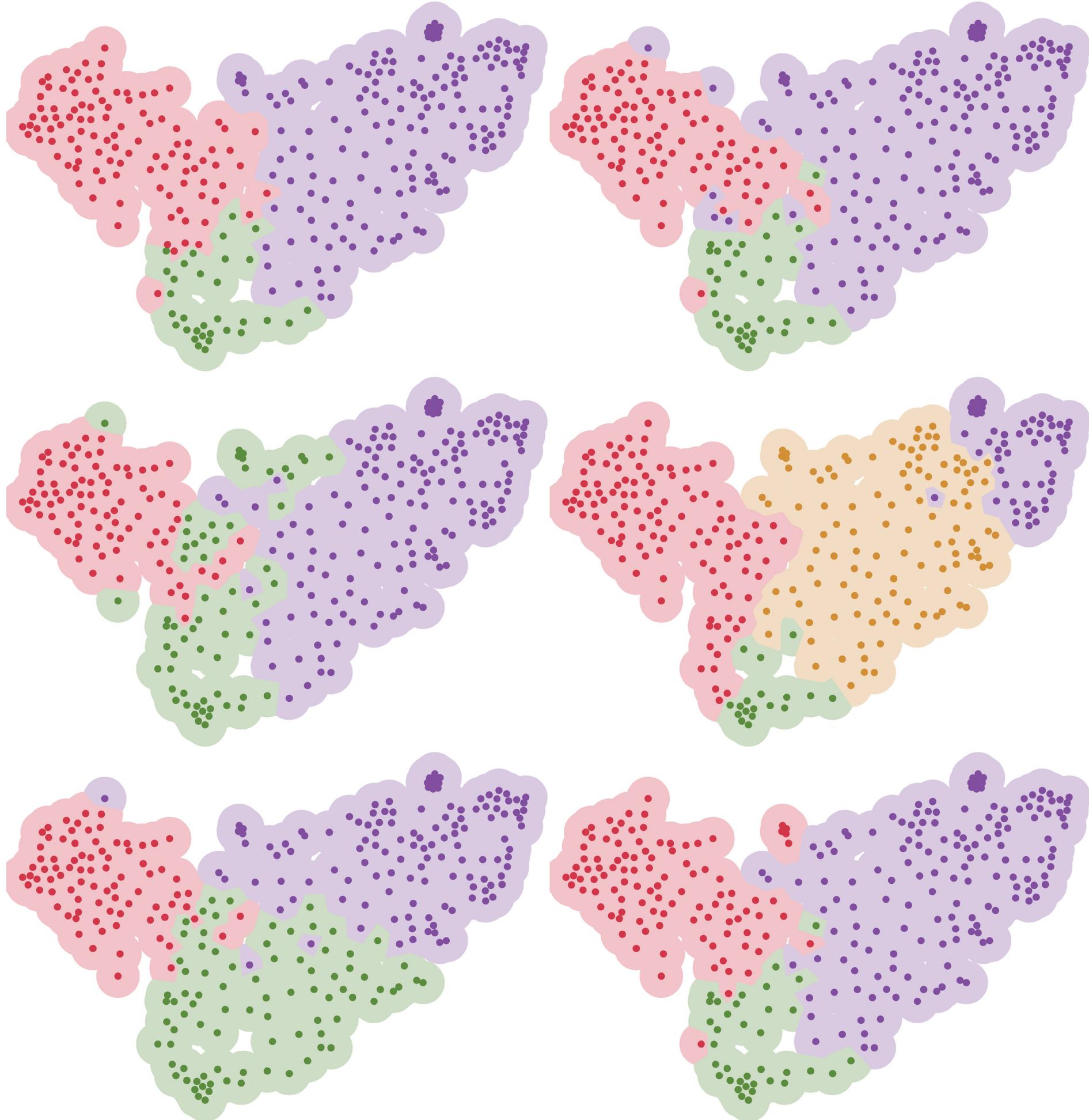
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**Where are the groups?**



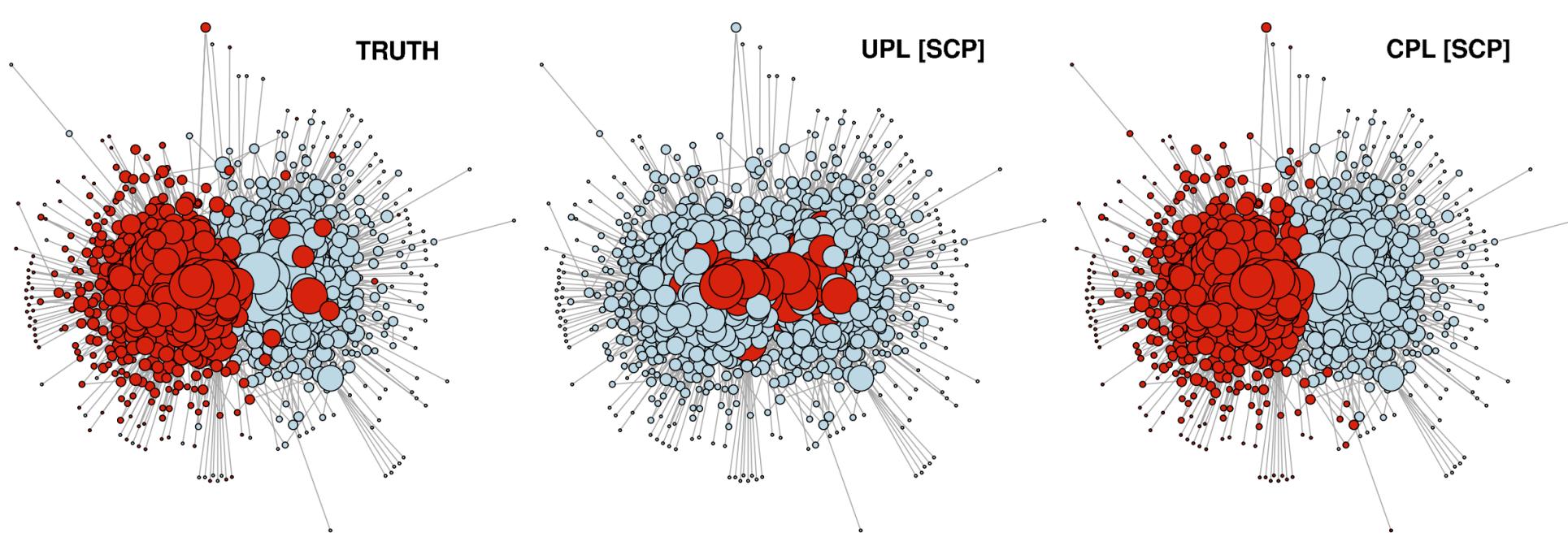


We can delegate finding groups  
to an algorithmic technique:  
**community detection**





*C. Elegans* network, LinLog energy model. Network from Watts, D. and Strogatz, S. (1998) 'Collective dynamics of "smallworld" networks', *Nature*, 393, pp. 440–442.

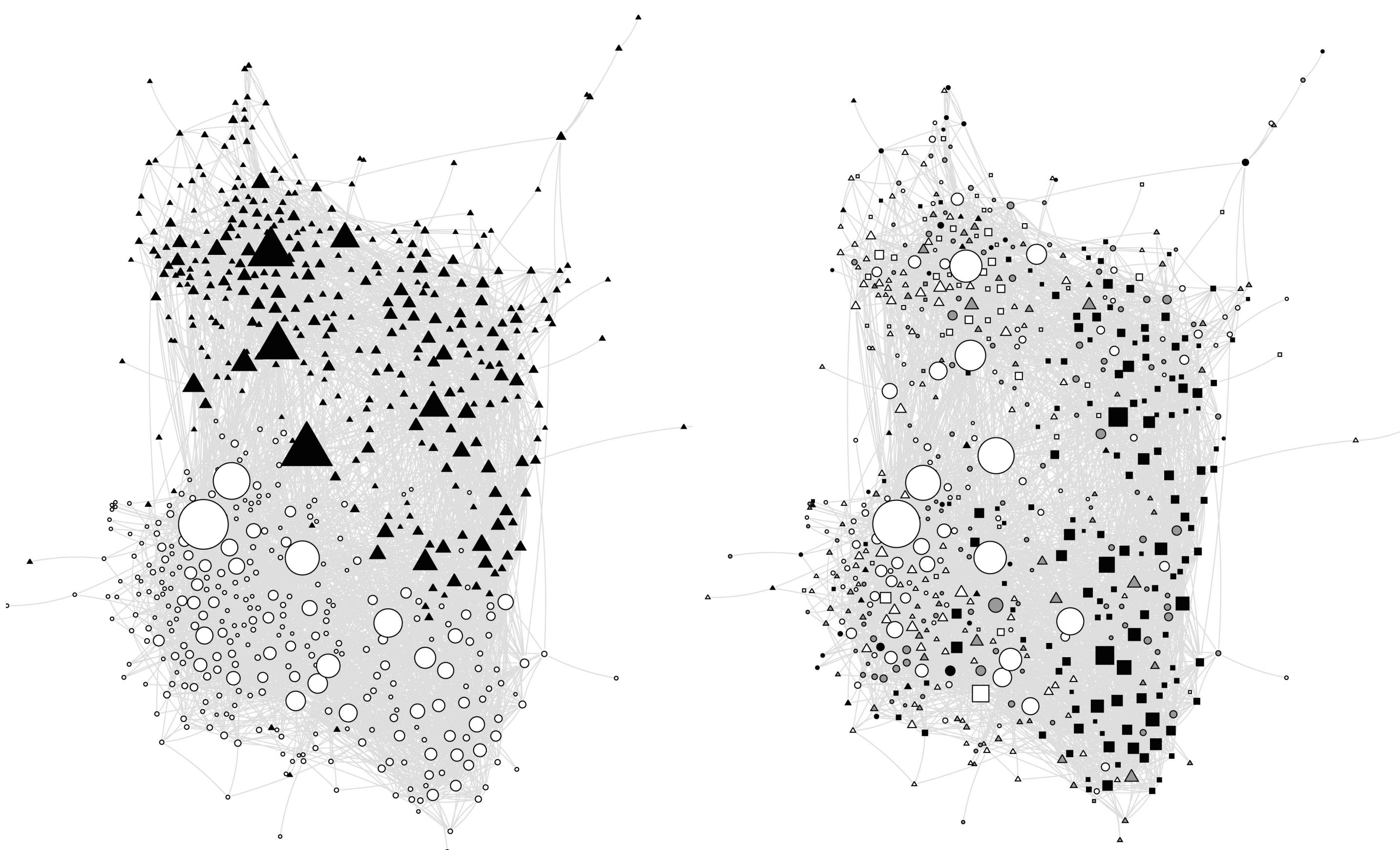


Amini, A. A., Chen, A., Bickel, P. J., & Levina, E. (2013). Pseudo-likelihood methods for community detection in large sparse networks. *Annals of Statistics*, 41(4), 2097–2122. <https://doi.org/10.1214/13-AOS1138>

*What even  
counts as a  
group?*

Peixoto, T.P. (2020) ‘Revealing consensus and dis-sensus between network partitions’, arXiv preprint arXiv:2005.13977.



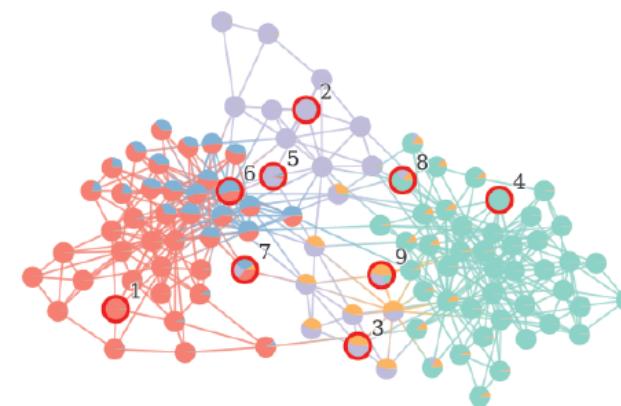


Boullier, D., Crépel, M. and Jacomy, M. (2016) 'Zoomer n'est pas explorer', Réseaux,  
195(1), pp. 131–161. doi:10.3917/res.195.0131.

Empirical data



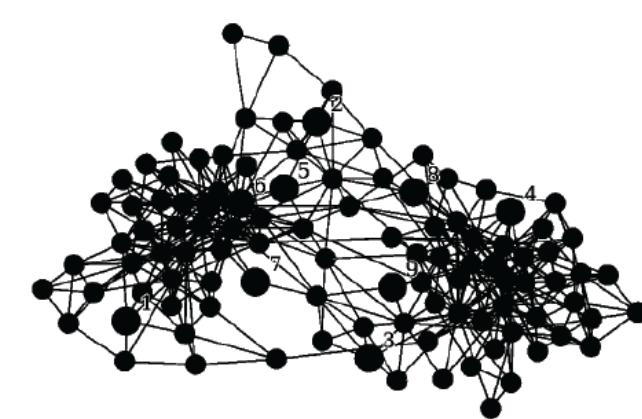
Set of partitions  
in partial agreement



Empirical data

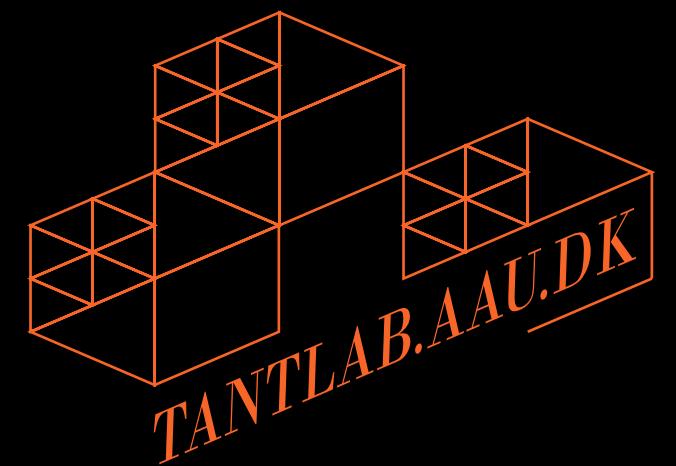


Visual heterogeneity

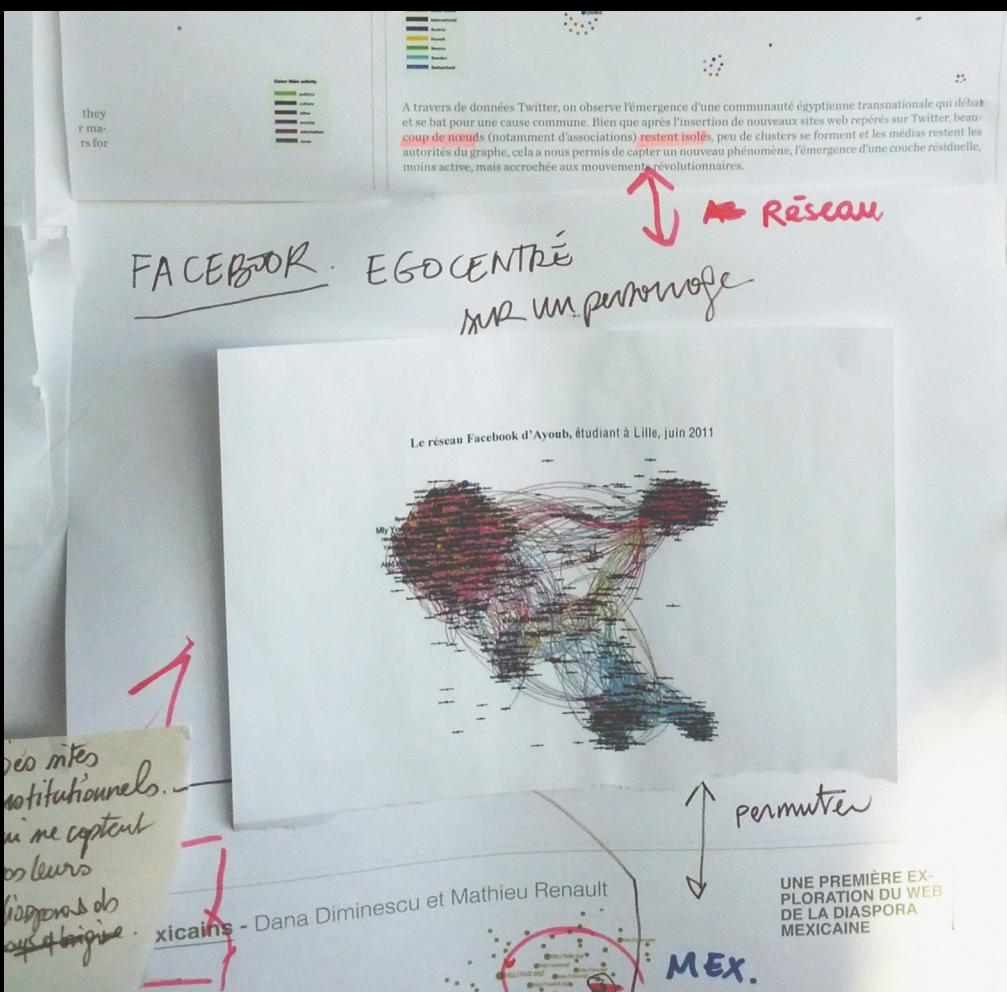


# Thank you for your attention

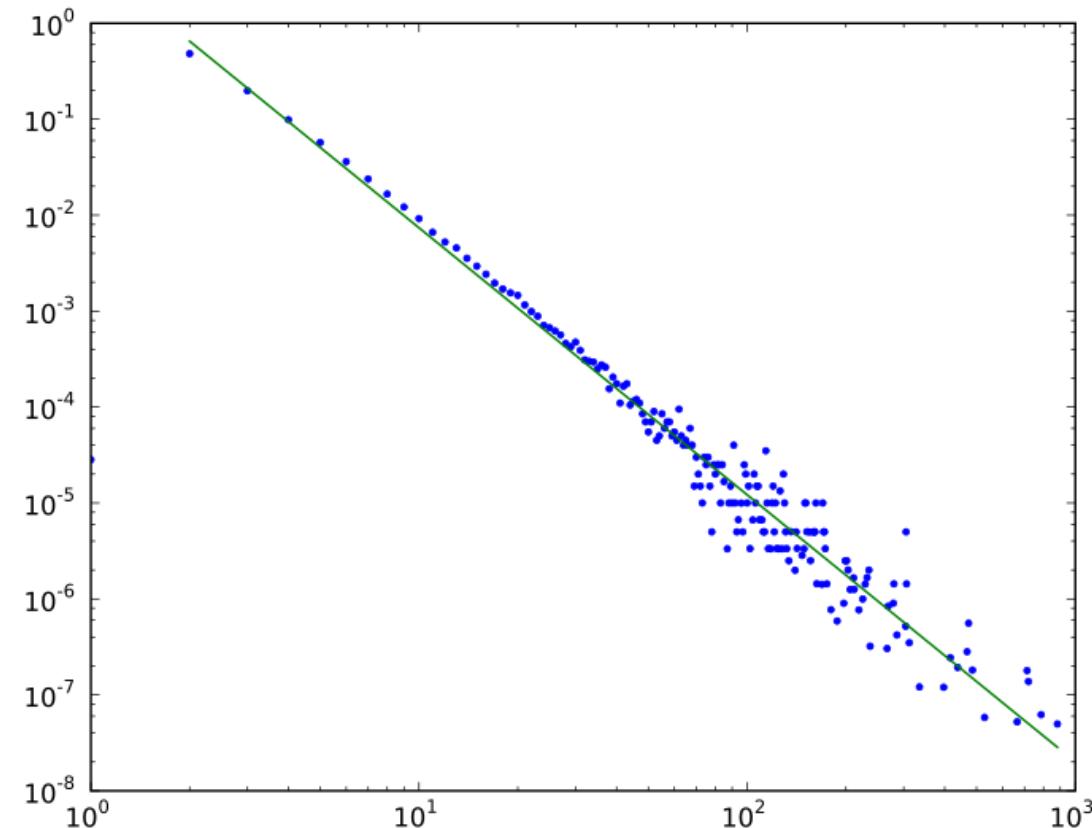
*@jacomyma  
reticular.hypotheses.org*



# Exploratory



# Confirmatory



# Explanatory

