

The Navajo and Quiche Myths: a Comparative Study on the Mythology of Amerindians

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The Navajo Network

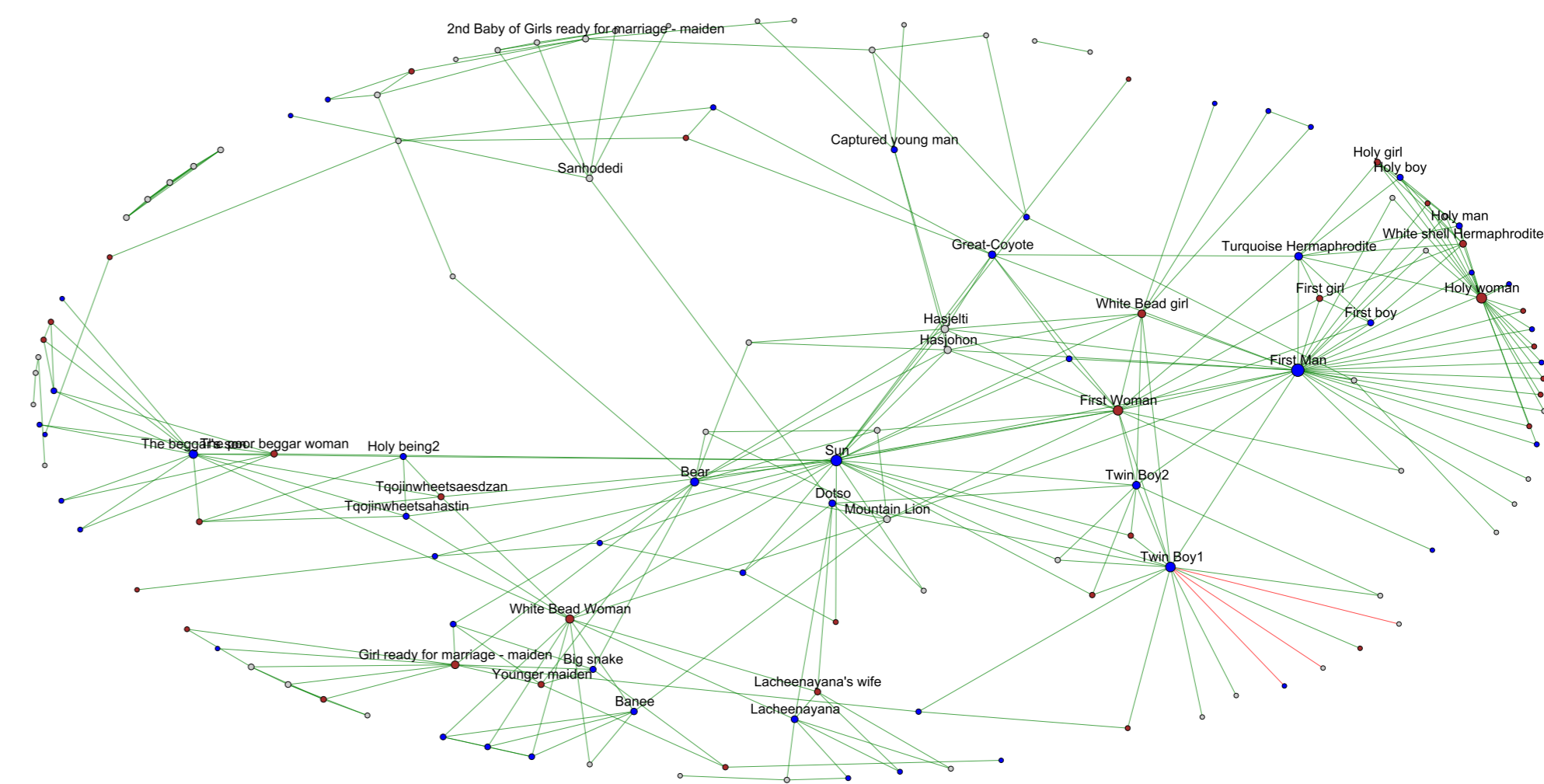
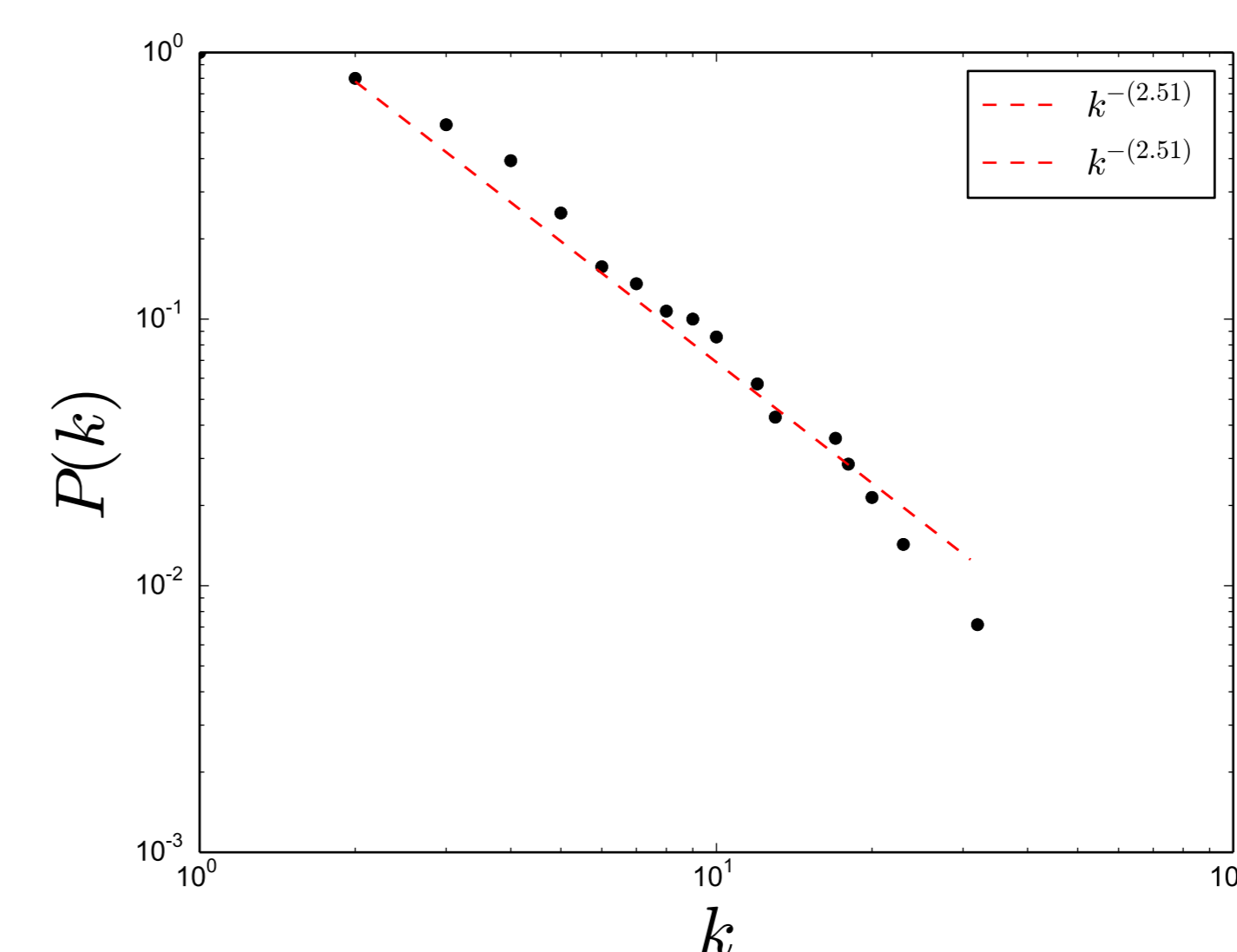


Figure : The Navajo Network: 140 vertices



(a) Degree Distribution for the Navajo Network

- ▶ Average degree: 4.04
- ▶ Average path length: 3.81
- ▶ Clustering coefficient: 0.44
- ▶ Betweenness centrality = 0.017
- ▶ Degree-assortativity = -0.183

The Maya Network

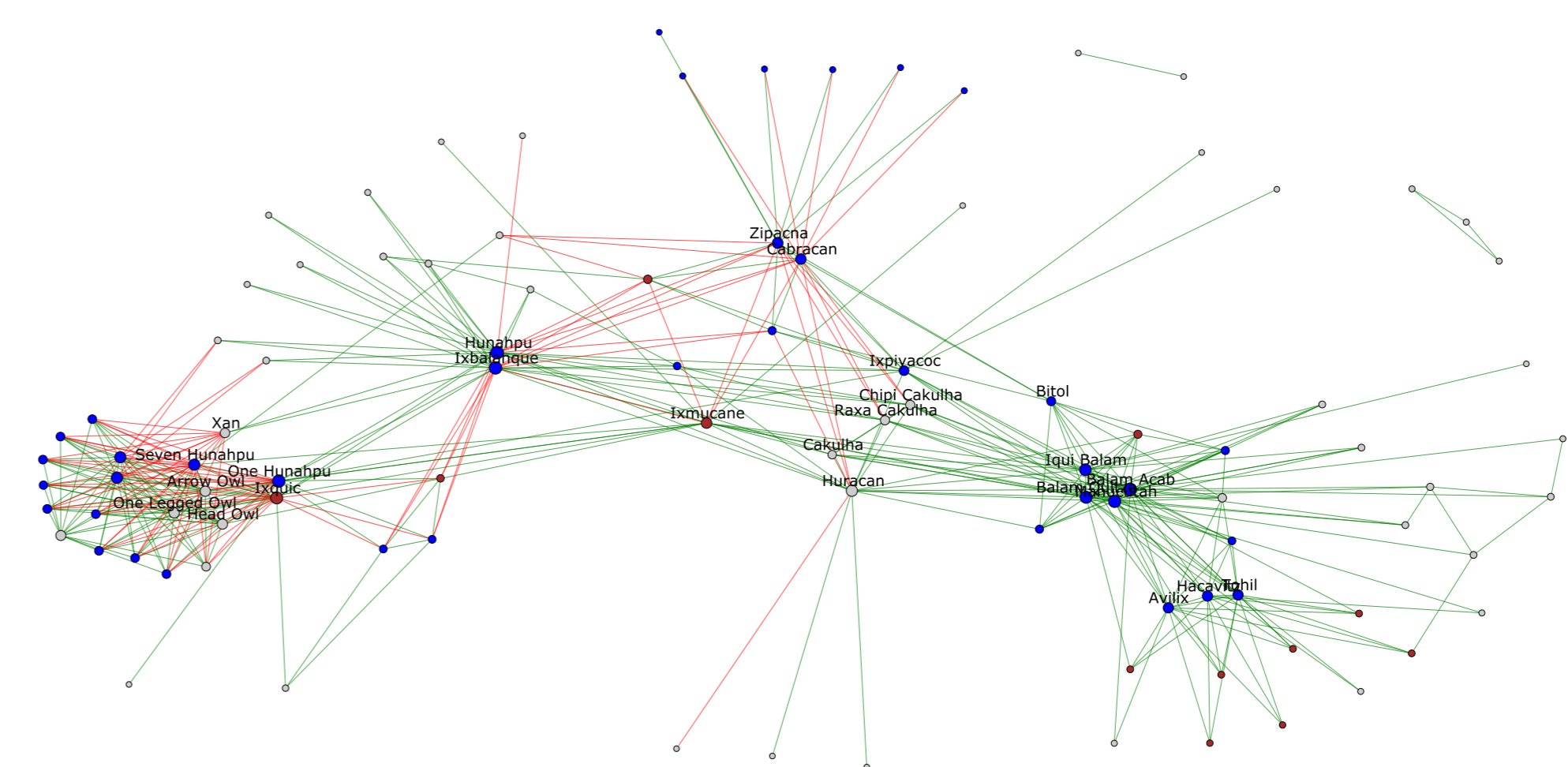
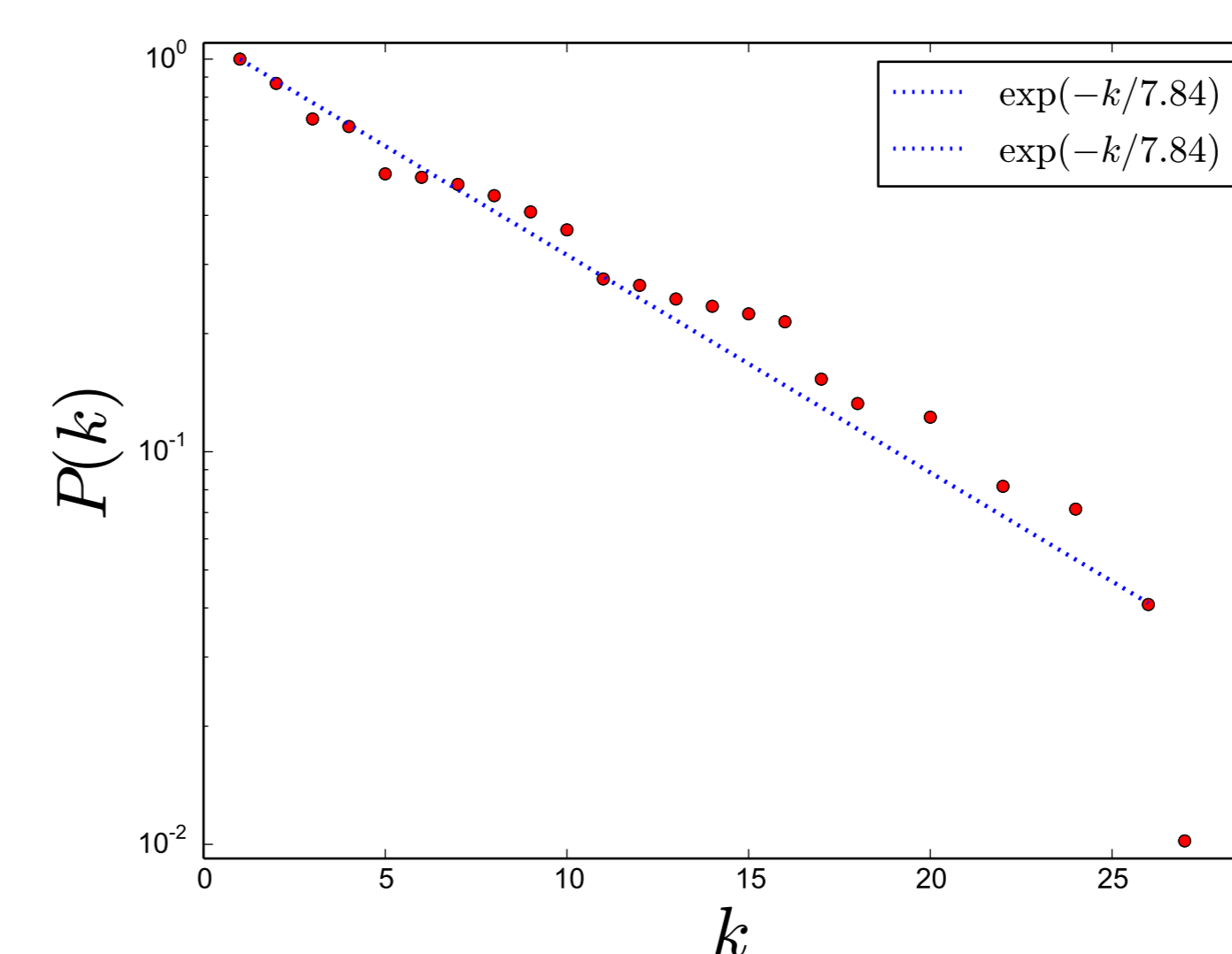


Figure : The Popol Vuh Network: 98 vertices



(a) Degree Distribution for the Popol Vuh

- ▶ Average degree: 8.35
- ▶ Average path length: 2.80
- ▶ Clustering coefficient: 0.55
- ▶ Betweenness centrality = 0.017
- ▶ Degree-assortativity = -0.323

Problems and Challenges

- ▶ Problems: different translations, christian and modern influences.
- ▶ Maya mythology is unique (almost no shared themes).
- ▶ Embedded mathematical knowledge (Popol Vuh).
- ▶ Benford's Law (law of the first digits).

Introduction

Comparative mythology is basically concerned with: (a) understanding the development of religions and cultures and (b) serving as a means of support of various psychological theories. By comparing mythologies of different peoples and cultures, comparative mythology thus addresses two central and intimately connected questions:

- ▶ Is there an Ur-myth from which most myths are derived [1]?
- ▶ If so, did they spread by diffusion or are they universal innates of the human mind?

Recently a new approach to comparative mythology has been proposed [2]. This approach is mathematical and involves use of network theory. But how can networks help us address some of the main questions of mythology?

The study of social networks may not only help asserting the degree of historicity of some myths as proposed in [2] but perhaps tell to which extent mathematics can show an underlying universality.

The Maya (Quiché) and Navajo

The Quiché are descendants of the Maya living in the highlands of Guatemala. Their creational myths, orally transmitted, written down by Spanish missionaries in the late XVII century. The Popol Vuh (The Book of the Council) is the one of the best preserved records of Mayan mythology, history of royal lineages and calendrical information. It stands apart when compared to North and South american mythologies, as there are extremely few common themes and we have a pictorial rendering preserved in Dresden (the Dresden Codex). It is still passed on from generation to generation in the Quiché language.

The Navajo (Diné or Naabeehó) is nowadays the largest recognized tribe of the United States and once occupied a territory that comprised most of modern New Mexico, Arizona and parts of western Texas. It is believed that they moved into North America around 18 k-years BEC, through the Bering land bridge. Their creational myths (also orally transmitted and recorded in writing as late as 1923) bear resemblance to Siberian and Amazonian myths, but not Mayan ones.

References

- [1] E.J.M. Witzel, The Origins of the World's Mythologies, Oxford University Press, 2012.
- [2] Pádraig Mac Carron and Ralph Kenna, Universal properties of mythological networks, EPL 99 (2012) 28002.