

MEME MAPPING: UNDERSTANDING ONLINE SOCIAL NETWORKS

MEME MAPPING: UNDERSTANDING ONLINE SOCIAL NETWORKS

by

Zoe Beynon-MacKinnon

Submitted in partial fulfillment of the requirements of the degree of Combined  
Honours in Environment, Sustainability and Society and Political Science, Minor  
Economics

at

Dalhousie University  
Halifax, Nova Scotia  
April 2018

Supervisor  
Andrew Bergel

© Copyright by Zoe Beynon-MacKinnon, 2018

DALHOUSIE UNIVERSITY

DATE: April 16<sup>th</sup>, 2018

AUTHOR: Zoe Beynon-MacKinnon

TITLE: Meme Mapping: Understanding Online Social Networks

DEPARTMENT OR SCHOOL: College of Sustainability

DEGREE: Bachelor of Arts

Convocation: June, 2018

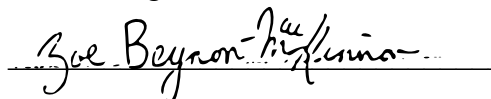
Environment, Sustainability and Society and

Political Science

Minor Economics

Permission is herewith granted to Dalhousie University to circulate and to have copied for non-commercial purposes, at its discretion, the above title upon the request of individuals or institutions. I understand that my thesis will be electronically available to the public. The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

The author attests that permission has been obtained for the use of any copyrighted material appearing in the thesis (other than the brief excerpts requiring only proper acknowledgement in scholarly writing), and that all such use is clearly acknowledged.

 Signature of Author

### **Abstract**

Memes have become a common component of the Internet and social media. Yet the origin and movement of memes – not to mention the impact that they have on politics – is relatively unknown. In an attempt to address this gap in the literature, this research traced 188 political memes from popular Facebook pages to their digital origin. In recording the major points of dissemination along the way, a meme map has been created of the movement of memes across various webpages. Analyzing this image provides significant insight into the reach of memes – reinforcing some theories and challenging others. Framed within analysis of discourse theory and identity politics, this meme map provides insight into the modern development of Social Movement Communities (SMCs) and Online Social Networks (OSNs).

Key Words: social media, memes, internet, identity politics, discourse theory, online social network, mapping

### **Acknowledgement**

This research was made possible with the support and enthusiasm of my supervisor Andrew Bergel – without whom I would not be where I am today. Thank you for pushing me to do my best work, and calling me out when I didn't. I would also like to thank Steve Mannell, director of the College of Sustainability, and all the College staff for their support.

### **Funding**

This work was supported by the College of Sustainability and Dalhousie University [Undergraduate Innovation Themed Grant]



## Table of Contents

<b>1.0 Introduction</b> .....	<b>1</b>
1.1 Topic of Research.....	1
1.2 The Problem .....	2
1.3 Purpose of Study .....	3
1.4 Research Question.....	4
1.5 Definitions .....	4
1.6 Significance of Study.....	5
1.7 Outline of Thesis.....	5
<b>2.0 Literature Review</b> .....	<b>6</b>
2.1 Identity Politics.....	6
2.1.1 Identity politics and collective discourse .....	6
2.1.2 Modern applications of identity politics .....	9
2.2 Social Media.....	9
2.2.1 The media and social movement communities.....	10
2.2.2 Social media as a tool for social mobilization.....	11
2.2.3 Social media and the development of online social networks .....	12
2.3 Memes.....	14
2.3.1 Memes as a form of social capital.....	14
2.3.2 Memes in politics.....	15
2.3 Meme Mapping.....	16
<b>3.0 Methods</b> .....	<b>17</b>
3.1 Foundations and Software Used .....	17
3.2 Political Factions and Facebook Pages.....	18
3.3 Meme Collection.....	19
3.4 Meme Origin Tracing .....	19
3.5 Sociograms.....	20
3.6 Creating a Meme Map.....	21
<b>4.0 Analysis</b> .....	<b>22</b>
4.1 Sociogram.....	23
4.2 Webpage Based Analysis .....	24
4.2.1 Facebook.....	24
4.2.2 Twitter .....	25
4.2.3 Reddit.....	26
4.2.4 Instagram.....	28
4.2.5 Chatroom/Forum .....	28
4.2.6 Blog.....	30
4.2.7 4Chan .....	30
4.2.8 Tumblr .....	31
4.2.9 YouTube .....	32
4.3 Identity Based Analysis .....	32

**5.0 Discussion..... 35**

**5.1 Significance for Study of Memes ..... 35**

**5.1.1 Future meme mapping research..... 37**

**5.2 Significance for Study of Politics and OSNs ..... 39**

**5.2.1 Future OSN and meme research ..... 43**

**6.0 Conclusion ..... 44**

**References ..... 47**

**Appendix ..... 52**

## List of Tables

Table 1.....	18
--------------	----

## List of Figures

<i>Figure 1. Full Meme Map</i> .....	23
<i>Figure 2. Pre-Facebook</i> .....	25
<i>Figure 3. Post-Facebook</i> .....	25
<i>Figure 4. Post-Twitter</i> .....	26
<i>Figure 5. Pre-Twitter</i> .....	26
<i>Figure 6. Post-Reddit</i> .....	27
<i>Figure 7. Pre-Reddit</i> .....	27
<i>Figure 8. Post-Instagram</i> .....	28
<i>Figure 9. Pre-Instagram</i> .....	28
<i>Figure 10. Post-Chatroom/Forum</i> .....	29
<i>Figure 11. Pre-Chatroom/Forum</i> .....	29
<i>Figure 12. Post-Blog</i> .....	30
<i>Figure 13. Pre-Blog</i> .....	30
<i>Figure 14. Post-4Chan</i> .....	31
<i>Figure 15. Pre-4Chan</i> .....	31
<i>Figure 16. Post-Tumblr</i> .....	32
<i>Figure 17. Pre-Tumblr</i> .....	32
<i>Figure 18. YouTube</i> .....	32
<i>Figure 19. Left-Wing</i> .....	33
<i>Figure 20. Right-Wing</i> .....	33
<i>Figure 21. Issue-Based</i> .....	33
<i>Figure 22. Left-Wing Origin</i> .....	34
<i>Figure 23. Right-Wing Origin</i> .....	34
<i>Figure 24. Issue-Based Origin</i> .....	34

## **1.0 Introduction**

### **1.1 Topic of Research**

Digital communication and social networks have become a core aspect of modern society. From the use of email and chat based forums, to more complex social media sites, digital communication has developed in stride with the rise of personal computers and mobile devices. However, it was not until the use of social networks for organizing and mobilizing during Arab Spring (2010) and Occupy Wall Street (2011) that attention to the political role of the digital became a field of consideration (Zeitzoff, 2017). While the initial focus was on the use of social media in mobilizing pre-existing political movements, the evolving uses of social media have shifted the focus to the development of political movements through social media and digital social networks (Gal, Shifman & Kampf, 2016; Nissenbaum & Shifman, 2017). The use of social media and digital social networks prior to and in the aftermath of the 2016 United States of America Presidential election has highlighted new ways in which digital social networks are being used for political means (Ross & Rivers, 2017).

While there are many aspects of evolving digital discourses that are worthy of analysis, specific attention has been paid to the growth of image macro meme prevalence, and their potential role in political discourse overall (Piata, 2016). Where an image macro meme is the combination of a picture and text into a single sharable image (Ross & Rivers, 2017). For the remainder of this paper, the term meme will be used when referring to Internet image macro memes. The literature on the role of memes in political discourse is growing, though the newness of such social media tools means that few large-scale analyses have yet been completed. Of the research that has been completed,

most seeks to understand the potential correlations between political memes and political opinions prevalence, using limited qualitative analysis (Bratich, 2014). This has created a gap in the literature, as little is known about the commonalities of political memes, and their movement patterns through social networks (Ross & Rivers, 2017; Spitzberg, 2014). This study looks to fill this gap, through identifying the origin and dispersion points of political memes. Specifically, focusing on memes that have succeeded in reaching significant audiences through well-liked, politically focused Facebook pages (Spitzberg, 2014). In creating a map of the origin points of political memes, the various distribution channels these memes take, and their time of dispersion in reaching a significant audience, this study hopes to provide a foundation for further research on the use of memes in pursuing political interests.

## **1.2 The Problem**

The growing prevalence of digital social networks and the role of social media in the political lives of the public has led to a number of studies focusing on the potential correlation between political memes and the success of various ideologies and political movements (Piata, 2016; Ross & Rivers, 2017). This has created a gap in the literature, as little is known “...of who influences whom in the sharing of memes (creator or sharer?), what the reach of memes actually is, and how the intermedia spread of memes occurs” (Ross and Rivers, 2017, p. 9). The closest academic work has come to answering these questions was done by Spitzberg (2014), who created a theoretical model for multilevel meme dispersion, and discusses the social networks within which memes succeed. However, no primary data was collected, and no specific origin or dispersion

points were identified. Ross and Rivers (2017) argue that answering these questions “could enhance our understanding of Internet memes in the realm of politics” (p. 9).

Context for this study can be found in the literature regarding the development of digital social networks and social media as means of mobilizing political action, focusing on Arab Spring and Occupy Wall Street (Bratich, 2014; Smidi & Shahin, 2017; Zeitzoff, 2017). This includes discussion of the rise of digital activism, and the recent evolution of political engagement through the digital (Velasquez & LaRose, 2015; Zeitzoff, 2017).

Finally, there is limited literature on memes, meme culture and the potential role of memes in creating and propelling political agendas (Bratich, 2014; Gal, Shifman & Kampf, 2016; Nissenbaum & Shifman, 2017; Piata, 2016; Ross and Rivers, 2017).

Analysis of this phenomena includes peer reviewed sources, as well as an overview of the journalistic work done in understanding the phenomenon of memes following the 2016 US Presidential election. As is outlined below, this creates a clear need for more complete research regarding the origin and movement of memes.

### **1.3 Purpose of Study**

This study seeks to add to the existing literature by inductively analyzing the origin points and spread of memes from across the political spectrum. This is done by analyzing the origin points of politically focused memes that have succeeded in reaching significant audiences through popular Facebook pages (Spitzberg, 2014). Six pages are chosen from both the political right and left, as well as two pages focused on the promotion of specific political ideologies. Pages considered for use are in English, self-identify with a specific political view, post memes on a regular basis and have a substantial number of likes compared to other pages with similar focuses. Due to these requirements, a number of

the pages chosen are either directly focused on American politics, or have frequent posts regarding American politics. While the literature points to potential correlations between the use of memes and the promotion of various political factions, this study does not focus on the potential significance of memes in instituting political action or the differences in memes across the political spectrum (Ross and Rivers, 2017). Specific memes for tracing were objectively chosen based upon the greatest number of likes within a given timeframe for each of the selected Facebook pages.

#### **1.4 Research Question**

*What are the origin points and major points of dissemination of political memes that have succeeded in reaching major audiences through politically focused Facebook pages?*

While acknowledging the methods being used in collecting data, and clarifying the scope of the research at hand, the research question is intentionally open, to allow for the research to accurately depict the phenomena it observes.

#### **1.5 Definitions**

**Successful Meme** – A successful meme is a meme that has been shared by a well-liked Facebook page and received a significant number of likes when compared to other images shared. The meme has therefore succeeded in reaching a significant audience and spreading its content (Spitzberg, 2014).

**Origin Point** – The origin point of a meme is the oldest identifiable digital location the meme was created or shared, considering pages that are open to the public.

**Dissemination point** – A dissemination point of a meme is a site on which a meme was posted between the point and origin and being posted to the Facebook page from which it was deemed a success (receiving notable likes and shares).

### **1.6 Significance of Study**

As is noted above, the digital age has led to a new interface for political mobilization, and has been credited with the success of several recent political movements (Zeitsoff, 2017). However, the recent growth of political ideologies previously perceived as belonging to the fringe of society has drawn new attention to the potential role of online social networks and the changing forms of political discourse of the digital age (Nissenbaum & Shifman, 2017; Ríos, Aguilera, Nuñez-Gonzalez & Graña, 2017; Ross and Rivers, 2017). As the body of literature exploring the correlation between social networks, social media, and specifically memes as tools of spreading ideologies continues to grow, it is essential that objective, inductive research be done to inform on the phenomenon as a system (Ross and Rivers, 2017; Spitzberg, 2014). In identifying key origin points of memes, and mapping the various spread of the social networks that move said memes throughout the internet, this study will provide invaluable insight for future researchers.

### **1.7 Outline of Thesis**

The literature review is comprised of three main sections. First, a discussion of the theoretical underpinnings of discourse theory and identity politics, second, discussion of social media as both a tool in mobilizing and creating political communities, and third, the development of memes as a form of dialog within digital political communities.



The remainder of the paper will be dedicated to the independent research conducted. First, an overview of the methods used for both the data collection and analysis. This will be followed by an introduction to the raw data, as well as the organized data mapping. Analysis of the mapping and discussion of the significance of findings will follow. The paper will conclude by outline the findings of this study and identifying further research that could build upon the findings.

## **2.0 Literature Review**

### **2.1 Identity Politics**

#### **2.1.1 Identity politics and collective discourse.**

In order to understand the development of discourse and social movements, it is essential to understand community, and the interpersonal spread of ideology. McCarthy (1996) highlights the role of identity within social movements, through his analysis of the variance between Social Movement Organizations (SMO) and Social Movement Communities (SMC). He asserts that the most effective spread of ideology is through family and community, in contrast to formal institutions. This is reinforced by Mosse's (1998) analysis of the role of ideology and identity within 20<sup>th</sup> century Germany. Mosse's argues that the ideology of a collective cultural identity is a stronger rallying point than political identity. This is due to the role that interpersonal relations play in spreading ideology, as Mosse's (1998) findings support those of McCarthy (1996) that community is a more effective means of idea dissemination than formal organization.

This understanding of community and shared identity contributes to the study of framing as a means of conducting dialog. Within the larger realm of discourse theory,

frames refer to specific bodies of theory or issues being analyzed. As such, an overarching political issue may create the master frame, with sub frames being the various political factions under the master. For example, civil rights would be a master frame, under which various, more specific frames of discussion can be categorized, such as feminism (Steinberg, 1999). However, framing theory does not take into account identity and community dialog, thus creating a gap in the understanding of the role of the frame itself. This is due to a positivist understanding of vocabulary, where the terms used within a given frame are considered objective (Steinberg, 1999).

This understanding of frames as containing static collection of terms is challenged by Steinberg (1999), who argues that within a given frame, SMCs will attribute specific meaning to various terms, thus organically creating their own dialog. Steinberg (1999) emphasizes that while a frame provides the initial vocabulary and grammar used within discourse, the isolated evolution of said terms within various SMCs leads to incongruent meaning associated with the same terms between different SMCs. This development of specialized dialog limits the ability for individuals from parallel SMCs to communicate effectively, as the same term will be attributed different meaning.

In contrast to Steinberg's theory of dialog as an organic evolution within SMCs, Somers and Gibson (1994) highlight the potential for active manipulation of the terms used by a specific SMC, thus changing the collective narrative. They argue that due to the role that collective identity plays in facilitating the spread of ideology, it is possible to manipulate the narrative used within a frame based upon the active redefining of terms. Scheff (1994) builds upon this through his analysis of the use of pride and shame as a means to rally SMCs based on collective identities. In harnessing said emotions, Scheff

(1994) argues that an individual can insight action within SMCs. This is not to say that the rhetoric of shame cannot develop organically. However, even in these cases, the potential for manipulation as a form of promoting and reinforcing political goals is highlighted by Mosse (1998), as the German peoples collective ‘Volk’ identity developed organically within the existing SMC, but was quickly utilized by those looking to mobilize the collective for personal gain.

Where Somers, Gibson (1994) and Scheff (1994) explore the role of active manipulation within the narrative used by a SMC, Elder-Vass (2012) highlights the potential for endorsement of collective norms both actively and passively. Elder-Vass (2012) presents this through discussion of social norms, where all those that observe the norm are therefore actively endorsing it. In this way, the use of a SMCs dialog promotes the sub-frame it operates within, regardless of an individual’s belief in the frame. However, he does acknowledge the potential shortcomings this can have, founded on the potentially incongruent nature of community identity discussed previously in this section. Specifically, Elder-Vass (2012) notes “what is endorsed is not an unambiguously and homogenously shared idea. Instead, what is endorsed is a potentially heterogeneous collection of individual beliefs and dispositions” (p 55). The passive endorsement of a frame has significance for McCarthy’s (1996) understanding of the spread of ideology through SMCs, as Elder-Vass (2012) puts forward that any use of a frame – regardless of an individual’s belief in it, can lead to the development of said ideology in those they engage with.

Whether SMCs organically develop a narrative or are subject to active manipulation from collective members, all parties agree that a) collective identity is a

significant factor in the spread of ideology and b) the significance placed within a specific frame is dependent upon the narrative used by the collective. The next section outlines how the understanding of identity in the modern context is changing the political landscape.

### **2.1.2 Modern applications of identity politics.**

The theoretical foundation of identity politics and collective discourse covered in the previous section is essential to understand the significance of discourse in modern politics. This is due to the role that identity politics has played in shaping the creation of SMCs. Gitlin (1994) outlines how the continued narrowing of individual communities within larger master frames has fractured previously unified social movements. As these individual communities develop, they continue to refine their own dialog, limiting the ability to effectively communicate between various groups – and as such furthering the fission between SMCs.

This separation and refinement of various identities and SMCs is amplified by the technology of today, as collective identities are no longer limited to an individual's physical interpersonal relationships, but their digital interpersonal relationships. In this way, trans-national communities can form based upon increasingly specific sub-frames and dialogs, each with its own political agenda (Tarrow, 1996). However, this further diminishes the potential for cross community dialog and social action under a master frame, creating the opportunity for further political division (Gitlin, 1994). This continued narrowing of social identities, and fission within previously cohesive master frame SMCs is taking place on all sides of the political spectrum, and provides increasing potential for the development of specialized counter movements (Tarrow, 1996).

## **2.2 Social Media**

### **2.2.1 The media and social movement communities.**

While it has been established that social movements disseminate through pre-existing social network, the media has always played a significant role in connecting those within a SMCs with the population at large. However, what is considered news worthy by traditional media is often not what those within a given SMC feel is most important to communicate to the public (Klandermans & Goslinga, 1996). For this reason, it is common for SMCs to self-publish, ensuring that they have control over the content being shared. However, while this presents the opportunity to control the flow of information, the use of sub-frame specific dialog can act as an inadvertent gatekeeper, limiting the ability for outsiders to meaningfully connect with the issues at hand (Klandermans & Goslinga, 1996; Steinberg 1999).

With the development of the Internet, the use of media has now expanded to include the digital. Studies looking at the correlation between Internet use and political engagement have found that use of the Internet increases individual's level of political engagement (Velasquez & LaRose, 2015). Recently, research has looked specifically at the role of social media use on political engagement. Velasquez & LaRose (2015) have found that many SMC view social media, mainly Facebook and Twitter, as an effective means of communicating with the public at large. In this way, social media is being adopted by modern SMCs in the same manner that traditional media was adopted by SMC throughout history as a means of self-publishing.

Expanding upon the role of social media as a communication tool of SMCs, Zeitzoff (2017) outlines the manner in which social media is changing political discourse.

Specifically, he highlights four ways political conflict discourse has been impacted: first, the reduced cost of communication, second, increased communication speed, third, evolution of communication strategy and fourth, increased available information regarding political conflict. In this way, Zeitzoff (2017) argues that social media is not only replacing traditional media as a tool by SMCs, but it is fundamentally changing the role of media in political dialog.

### **2.2.2 Social media as a tool for social mobilization.**

While social media has been used by SMCs since its development, the role it played in Arab Spring can be seen as the first instance where it was attributed as a significant factor in social action (Smidi & Shahin, 2017). Smidi & Shahin (2017) highlight that social media allowed SMC to communicate and spread their ideas under authoritarian governments, where self-publication was not previously possible. This ability ultimately allowed the broad SMC to coordinate and mobilize mass movements across the Middle East and North Africa.

In the case of Arab Spring, social media was a tool used by a pre-existing SMC, focused on the master frame of discontent with the current regime. However, Smidi & Shahin (2017) highlight that in the case of Arab Spring, social media was unable to create a common dialog between the sub-frames under the larger SMC. This division within the master frame SMC led to lack of agreement over an appropriate long-term goal for the movement – arguably contributing to the failure of the post Arab Spring states. Smidi & Shahin (2017) argue that this highlights a shortcoming of social media, in contrast to more traditional forms of ideology dissemination. Where historically the spread of

newspapers and novels facilitated the development of shared SMCs, the speed of social media does not allow for shared identity and dialog to develop.

In the next section, the literature regarding the development of SMC through digital forums will be discussed. This will lead to the role of memes, as a form SMC dialog that facilitates and spreads various ideologies, both actively and passively.

### **2.2.3 Social media and the development of online social networks.**

In the context of Arab Spring, Smidi & Shahin (2017) found that social media did not offer the necessary environment for the development of a cohesive SMC. When compared to historical media-based identity creation, they made the assertion that while social media serves a role in mobilization, it does not take place on the time scale needed for the development of norms and dialog, within SMCs. However, while the case of Arab Spring illustrates the use of social media by a pre-existing SMC, there is evidence to suggest that over the long run, social media can facilitate the creation of collective identity and SMCs, through the development of online social networks (OSN) (Ríos, Aguilera, Nuñez-Gonzalez & Graña, 2017). Kaufmann and Jeandesboz (2017), find that virtual public spaces have created the environment for the development of collective identity, or SMC, akin to the interpersonal relations discussed in the previous section. Gal, Shifman and Kampf (2016) build upon this, asserting that this community development forms informal gatekeepers, through the use of SMC specific dialog. In this way, the interpersonal relationships needed for the development of SMC explored in the previous section are now forming over social media, and developing their collective dialog online.

One distinction that should be noted is the variation of sites used for the connection of pre-existing SMCs and the creation of new SMCs. While Facebook and Twitter have been noted as significant in the mobilization and connection of existing SMCs, forum, chat-based sites have been found more effective in the development of new SMCs (Nissenbaum & Shifman, 2017; Ross & Rivers, 2017; Smidi & Shahin, 2017; Vickery, 2014). Two of the sites with highest readership are 4chan and Reddit. Where Facebook and to a lesser extent Twitter rely heavily on an individual's pre-existing social network in order to make connections, both 4Chan and Reddit are issue driven, allowing for otherwise unrelated users to connect (Nissenbaum & Shifman, 2017; Vickery, 2014). In this way, Facebook acts as a place of connection for those already within various OSN, while 4chan and Reddit are facilitating the creation of new OSNs. While these forum sites allow for interpersonal rhetoric to develop, their anonymous nature is altering the manner in which SMCs are defined, as the culture at large is more significant than the individual actors.

Within the discussion of social media as a curator of SMCs and collective identity, Gal, Shifman and Kampf (2016) explore the role of memes. They found that memes are used as a form of SMC dialog, and contribute to both forming new digital communities and strengthening those that were pre-existing. This is built upon by Nissenbaum & Shifman (2017) who explore the use of memes as an essential aspect of the creation of SMCs on 4Chan's prominently anonymous /b/ board. They highlight that memes are a natural evolution of SMC dialog. Just as various communities attribute specific meaning to general terms, the images and ideas conveyed in memes develop meanings specific to the forum community.



This is not to say that the development of these OSN is in isolation from the physical world, as the individual engaging online are strongly influenced by their life experiences (Williams, Oliver, Aumer & Meyers, 2016). The communities that develop online are unique in their ability to connect people from across the world and various walks of life, but not independent from the physical in whom will be drawn to specific communities. For example, while the 4Chan /b/ board is open to anyone with a computer, the nature of the site will attract individuals from various physical communities that in some way reflect the community that has developed on the board itself.

## **2.3 Memes**

### **2.3.1 Memes as a form of social capital.**

Memes play a distinct role within these OSN that have been developing, as they not only allow for the distinction of ‘in’ and ‘out’ members, but they allow for those who are members of a community to actively – yet anonymously – contribute to its refinement (Vickery, 2014). While this anonymity allows for an organic flow and development of ideas, the lack of authority creates a self-policing community, enforcing an ever-changing set of norms. Vickery (2014) explores this in her analysis of the culture surrounding a specific meme within a Reddit community. She finds that while anyone can appropriate the meme and post to the group, individuals that deviated from the dialog that has been generated by the community are met with contempt. In this way, memes exist in a paradigm where the community is made up of individuals who are at once consumers and producers (Xu, Park, Kim & Park, 2016).

While this anonymity introduces a field of research focused on the nature of meme creation and sharing, there is very little research conducted regarding both why

memes are created and what it is that inspires an individual to share a meme within a given community. Of the research that has focused on the dissemination of memes (opposed to their content and culture), the focus has been on videos shared over YouTube. Xu, Park, Kim and Park (2016) analysed the creation of memes centred on a common frame as a means of understanding cultural diffusion. They then created maps outlining the relationships between various sub memes. They found that sub memes that introduced opinions and incited dialog were engaged with at higher rates than those that merely reflected the initial memes meaning. In this way, the communities in which the memes were being shared were reinforcing the progression cultural surrounding the meme.

Guadagno, Rempala, Murphy and Okdie, (2013) who explored the instances of individuals sharing video memes with their OSN, reinforce these findings. They found that while funny memes were the most likely to be shared, memes that incited disgust or anger were still more likely to be shared than neutral memes.

### **2.3.2 Memes in politics.**

While the literature on memes in general is limited, the field of political memes is even slimmer. Piata (2016) analyzes political memes from the frame of understanding the role of metaphor in humour. She finds that the format of memes, when combined with humour, creates an accessible political commentary. However, while Piata (2016) uses memes as a frame of analysis, it should be noted that the focus of her study is on the theoretical relationship between metaphor and humour, not the nature of the memes themselves. This gap is somewhat filled by Ross and Rivers (2017), who explore the role

of memes as conductors of ideology, specifically their use in delegitimizing political candidates. They frame this research within the theory of SMC discussed in the previous section, where much of ones community is made up of like-minded individuals. Ross and Rivers (2017) suggest that the anonymity of memes allow individual to spread increasingly controversial material within OSN. Regardless of the individual's motives in sharing such content, whether for humour, or belief in the material being shared, identity theory suggests that continued exposure to such ideas will lead others to adapt their dialog, thus changing the political landscape (Elder-Vass, 2012).

Based upon the literature compiled, one can conclude that an individual's social network is essential to the development of personal and collective identity. With the use of modern technology, these communities can both form and mobilize online. However, the nature of these connections is changing the manner in which SMCs develop, as anonymity is putting increased emphasis on the knowledge of community specific dialog and norms. Specifically, memes are a form of community dialog, akin to any other vocabulary within a given frame. Yet given this significance, very little research has been done to date in attempts to understand which memes are accepted by the digital SMC, and succeed to reach a wider audience, and which memes are rejected.

## **2.4 Meme Mapping**

Within the limited literature available on memes, various means of image collection have been utilized with varying degrees of objectivity. Some collection is as informal as to use memes that appeared in the authors personal Facebook feed (Piata, 2016). Other's meme collection developed based upon a target image or meme content –

however was still subject to the researchers' ideas of relevance. Ross and Rivers (2017) used two meme sharing websites for collection, and chose images that met their requirements of "directly relating [sic] to Trump's wall and/or Clinton's emails and... representative of the strategies of (de)legitimization" (p. 5). Similarly, Vickery (2014) chose a forum and collected as many images that matched specific background image as possible, though it should be noted that the methodology of which images were collected/considered relevant is not discussed in the paper. Similarly, Xu, Park, Kim and Park (2016) conducted searches based on a given theme, and subjectively chose the memes that they believed were relevant to the study, once again, the criteria for which memes were considered relevant were not discussed. In contrast to these previously conducted studies, this research follows an objective approach to meme collection and analysis, as will be outlined in the following section.

### **3.0 Methods**

The inductive nature of this research, in deriving patterns from collected data, relies upon objective methods of collection and analysis. This section outlines the means through which memes are collected and traced from their source. It then describes the creation of a "sociogram", a form of social map outlining the movement of memes between webpage of origin and success on Facebook.

#### **3.1 Foundations and Software Used**

Meme collection and organization uses NVivo software. NVivo is a qualitative data analysis tool which sorts and analyzes large amounts of information quickly and

efficiently. The NCapture plug-in allows for the collection of social media posts and associated metadata, which can then be analyzed using NVivo.

NCapture for Mac is only able to collect images from Facebook pages. As such, this research uses politically focused Facebook pages as the initial point of collection. Facebook has a wide range of users and is not associated with any specific demographic (Zeitsoff, 2017). Users are able to see and like pages from various international political factions, allowing immense OSNs to form and making Facebook an excellent source for the needed data (Buch-Hansen, 2014). Using a proxy account, researchers can access all public Facebook pages without interacting with individuals or groups directly.

### 3.2 Political Factions and Facebook Pages

Facebook pages for collection are determined inductively. Initial searches determine key political themes within Facebook right and left wing OSNs. Various pages are then compared to determine their suitability to the research being conducted. Consideration is given to a) the number of likes they have compared to other pages aimed at the same political faction/issue, b) regular posting of image macro memes. Using these criteria – six right wing, six left wing and two issue-based pages are selected for collection. Within the six of both right and left wing pages, there is a range from more center, moderate views, to extreme, fundamentalist views.

Right	Page likes <sup>1</sup>
Liberty Memes	370,634
Right Wing Tribune	137,101
Americans Against Radical Islam	63,056
Revealing Feminism	48,060
Men's Rights Activism Universe	31,399
I love Social Justice Warriors	23,161

<sup>1</sup> Number of likes for each page collected on June 12, 2017.

Left	Page likes
Addicting Info	1,330,017
Political Memes	144,908
Third Wave Feminism	104,285
Bernie Sanders Lovers	95,768
Planet Activists	84,325
Socialist Meme Caucus	68,089

Issue Based	Page likes
ANTIFA	227,000
I Love Vegan	142,756

*Table 1 – Facebook Pages for Meme Collection*

In utilizing self-identified political Facebook pages, researcher bias in selecting relevant images is minimized. Based upon the political nature of each Facebook page – every image shared is considered worthy of analysis, and is therefore traced if recognized as the most liked image of the collection period (see below).

### 3.3 Meme Collection

Memes are collected from the ‘Photo’ window of each Facebook page using NCapture software, which captures the image, post and associated metadata, including number of “likes” received. NVivo is then used to sort the memes from each Facebook page, for each day of collection, with number of likes as the characteristic of interest. For each collection date, the image with the most likes for each Facebook page is the image that will be traced. At this point record is taken of the visual description of the meme, the Facebook page it was found on, number of likes it received and the time of posting.

In cases where the most liked meme has been traced previously, the following most liked meme will be traced. In total, 188 memes are collected and analyzed, drawing from left and right and issue based Facebook pages.

### 3.4 Meme Origin Tracing

As the scope of this research allows for focus on public pages and forums, only public searching tools are used to identify the origin of images. Where watermarks are present, these are cross-referenced with accounts on various social media sites (Twitter, Instagram, Facebook, Tumblr and Reddit ) and websites to find the origin page.

If no creator is found, reverse image searches are conducted using a general Google search and Karma Decay (Reddit specific search). Each of these tools has their limitations. Google searches the image in cross reference to the terms also searched, so if the origin of an image is vastly different from the end point it was found at, the terms used in the search may not be relevant. Karma Decay only recognizes images from Reddit pages where the image has received a high number of up-votes, which limits results of searches to images that have already succeeded on Reddit (Vickery, 2014).

Record is taken of the various webpages on which an image is posted and received attention from the OSN. These are then recorded in reverse chronological order. Note is taken of website, site page, number of likes or shares received, time of posting and if the image was in some way altered from previous posting.

In some cases, the image being traced cannot be followed to a definitive origin – either because its use has over saturated the search tools available, or because the image is old enough that it is not clear where the specific origin was. In these cases, the meme is traced to its oldest post.<sup>2</sup>

### **3.5 Sociograms**

---

<sup>2</sup> It should be noted that this research is only able to trace images to their origin on public pages and forums. It is therefore possible that images being accredited with a specific origin were in fact previously shared on a private forum or chat room.

The meme map created is based on the method of social network mapping referred to as a sociogram. Buch-Hansen's (2014) term "Sociogram" describes a mapping practice commonly used in Social Network Analysis (SNA) to illustrate the depth of relationships being analyzed. While the nature of mapping has evolved somewhat over the years, one can look back to initial studies of the internet and digital relations to find examples of maps as a tool in understanding search results and content connections (Kleinberg, 1999). More recently within SNA there has been a variety of types of maps created, dependent upon the nature of the relationships being analyzed.

At the most basic level, sociograms depict theoretical interactions, outlining the relations and connectivity of the measure of analysis. In these cases, common shapes – referred to as nodes – represent the individual entities being examined (Wu, Chiclana, Fujita & Herrera-Viedma, 2017) In one analysis of digital discussion, nodes represent various actors, with edges – the lines of connectivity between nodes – indicating directional relationships of discussion. Here, node colour coding is used to depict the strength of each actor within the given platform (Alsinet et al. 2017). Zhu, Aloufi, Yang and Saddik (2016) combine these forms of analysis, using the established relationships in a theoretic sociogram to create an accurate map of data collected through a colour coordinated map. Sociograms can be given varying depth of insight through utilization of node size, colour, and direction of pathway (Ramirez, Dwivedi, Ghilardi & Bailis, 2014).

### **3.6 Creating a Meme Map**

Meme mapping sociograms are created using the software Gephi. Gephi allows for SNA through the coding of qualitative data, and the creation of a map to outline various relationships. This illustrates the various pathways of memes from success to



origin to be traced. Meme movement data is numerically coded, indicating initial Facebook page of collection and all subsequent webpages recorded as a point of dissemination. These codes are then uploaded to Gephi, where individual webpages are represented as nodes, and the movement of memes from one webpage to another is represented as edges.

With the base sociogram created, analysis is conducted by isolating specific webpages and identities. This provides insight into the relevance and role of various social media pages, as well as the differences between political identities.

The creation of these sociograms allows for insights into the workings of OSNs. While these are dynamic systems, with complex relationships between and within groups, any awareness that can be developed to further understand the movement from various webpages is of benefit.

#### **4.0 Analysis**

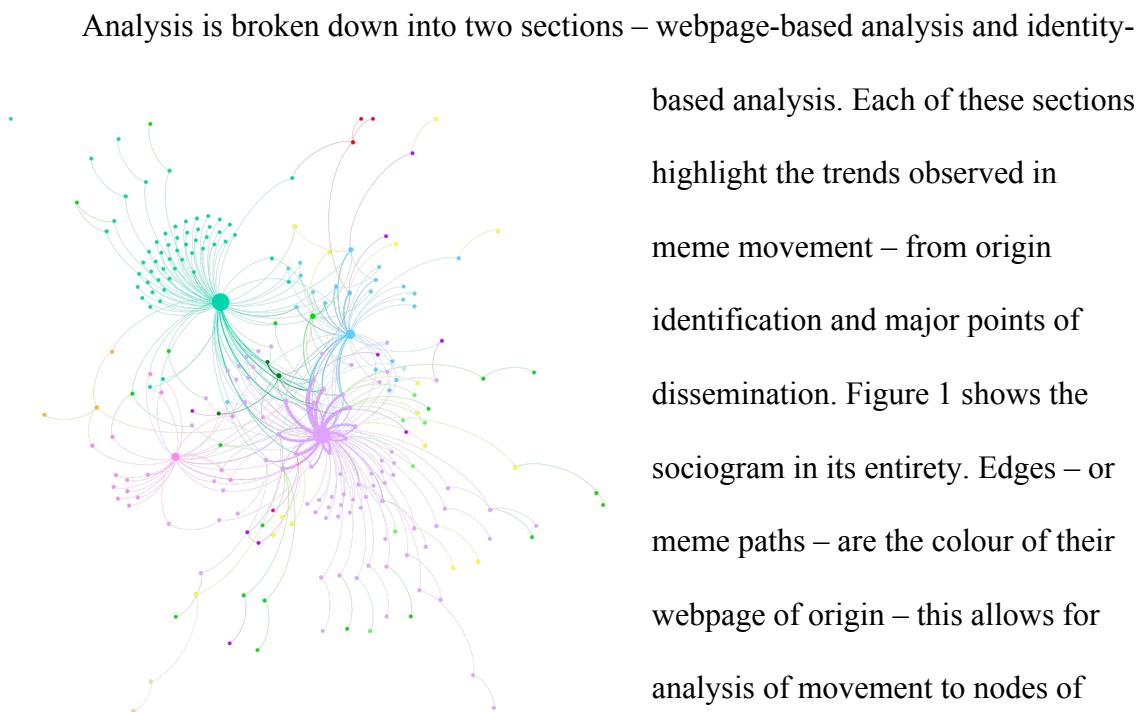
While images have been included in this section for ease of reading, full sized images are provided in Appendix A for greater analysis if needed.

There were 18 collection dates for memes between June 2017 and February 2018. During which 20,200 Facebook posts in total were collected. As mentioned in the methods, each collection date comprised of collecting images from 14 distinct Facebook pages, each page and date combination creating a specific section. The NVivo sorting function was used on each collected section to determine the most liked image of the section. Of the posts collected, 188 memes were selected for tracing. Some images could not be traced further than the initial post collected, some moved through various sites and

over long periods of time. The following section outlines the observable traits of the memes collected based upon the sociogram created. The end points mapped represent the oldest, publically searchable use of the meme, though previous use on private or deleted pages cannot be accounted for in this research.

#### 4.1 Sociogram

In total, the 188 memes traced passed through 245 distinct webpages, represented as nodes (graphed as a circle). Connecting these are 667 edges, representing the path between one webpage and another taken by the meme being traced. While this sociogram highlights the pathways taken by the 188 memes collected, it does not depict the time span of this movement. The size of each node denotes the ‘degree’ of the webpage – or the number of images that have passed through it. Edge size is determined by the number of congruent paths between nodes, meaning the thicker the edge, the more memes that have followed the distinct path from one webpage to another.



*Figure 1.* Full meme map.

dissemination – with the Facebook central node as end point of all movement.

Figure 1 – Full meme map

- Facebook – purple
- Twitter -turquoise
- Reddit – blue
- Chatroom/Forum – green
- Instagram – Pink
- Blog – Yellow
- News Site – dark purple
- Company/Service – bright green
- Tumblr – orange
- 4Chan – dark green
- YouTube – Red
- Flickr – light orange
- Pinterest – dark pink
- Independent paper – light blue

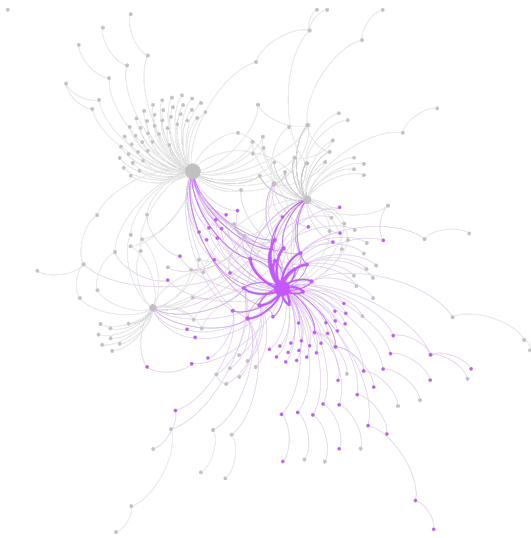
## 4.2 Webpage Based Analysis

### 4.2.1 Facebook.

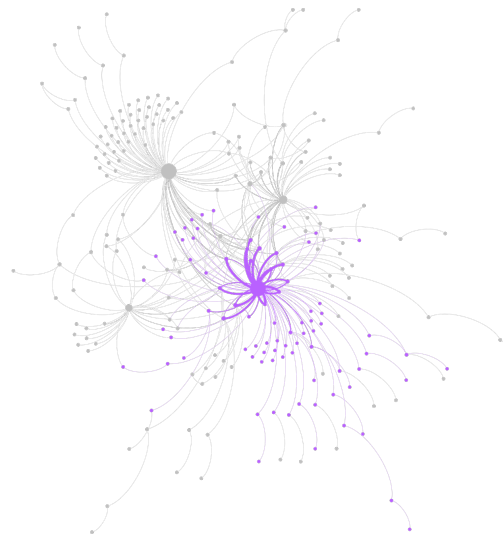
Facebook pages make up 35.1% of nodes in the sociogram, with 86 distinct pages traced. Not including the 14 pages selected for collection, there are 72 Facebook pages that occur in tracing – making Facebook 31.2% of webpages memes passed through prior to collection. As can be seen in Figures 2 and 3, Facebook is self-reinforcing, with many images being shared on multiple pages once Facebook has been reached.

With Facebook as the end point, figure 2 highlights the webpages that memes moved through to Facebook. Twitter (top left), Reddit (top right) and Instagram (central left) are the most significant contributors. One can also see a number of blogs and companies that shared memes prior to reaching Facebook, visualized in the sprawl of independent edges and nodes along the bottom of the sociogram.

Comparatively, Figure 3 outlines the various Facebook pages memes passed through prior to their collection, resulting in three distinct clusters of Facebook pages.



*Figure 2.* Pre-Facebook.



*Figure 3.* Post-Facebook

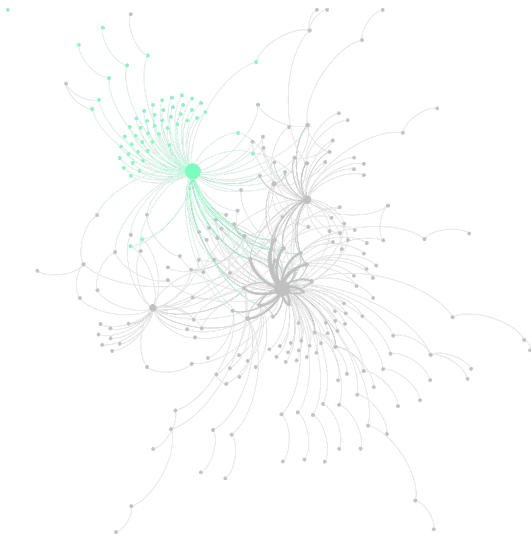
Directly surrounding the Facebook node are the 14 points of origin, most of which feed back into Facebook itself – signifying that the page of collection was not the first time the image was shared on Facebook. The second cluster is the group of short edged nodes below and to the right of the central Facebook node. This cluster represents the Facebook pages that are the last traceable location for the traced meme. The third cluster is made up of long edged nodes that consist of memes either moving through multiple Facebook pages or passing into Facebook from outside websites, before reaching its end point of collection.

#### **4.2.2 Twitter.**

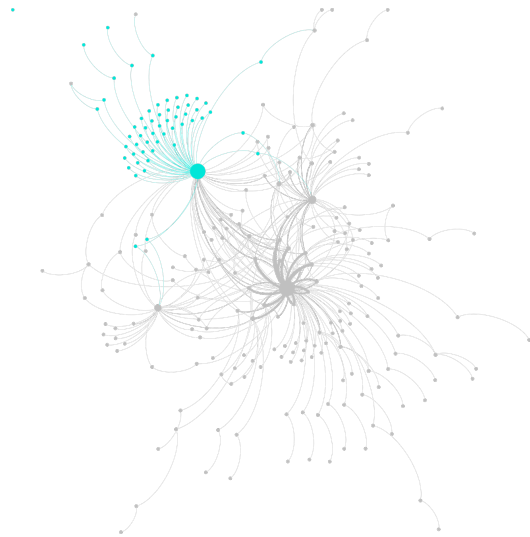
Twitter makes up 23.27% of the nodes in the sociogram, with 56 distinct twitter accounts used in the spread of memes. This makes it just slightly less prominent than Facebook when considering the number of pages represented in the sociogram.

Figure 4 highlights all of the pathways taken by memes from Twitter to other webpages. From this image one can see that Instagram (far left), Facebook (below) and

Reddit (far right) make up the majority of uptake locations – meaning images that originated or passed through Twitter were later disseminated through these webpages. Figure 5 shows several instances where memes passed through Twitter after previously being shared by a different webpage. These are noted as edges that branch out to a grey node.



*Figure 4.* Post-Twitter.



*Figure 5.* Pre-Twitter.

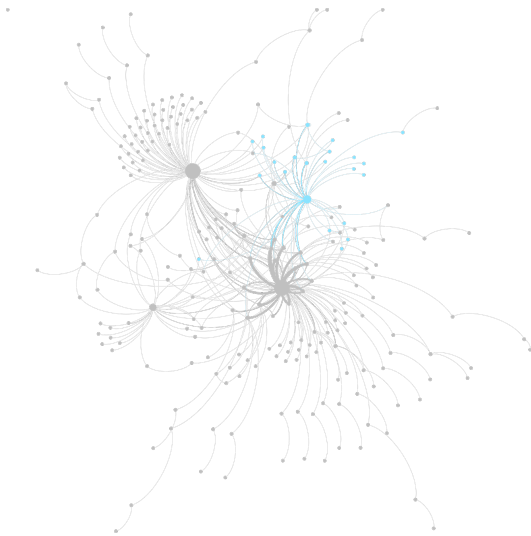
In both images, the concentrated cluster above the central Twitter node represents Twitter pages that a meme originated from – or can last be traced to. The high concentration of Twitter origin points can be partially explained by the use of tweets as memes, since many of the images traced were screenshots of tweets. As is seen in figure 4 and figure 5, Twitter acts as both a point of origin and a point of dissemination.

#### **4.2.3 Reddit**

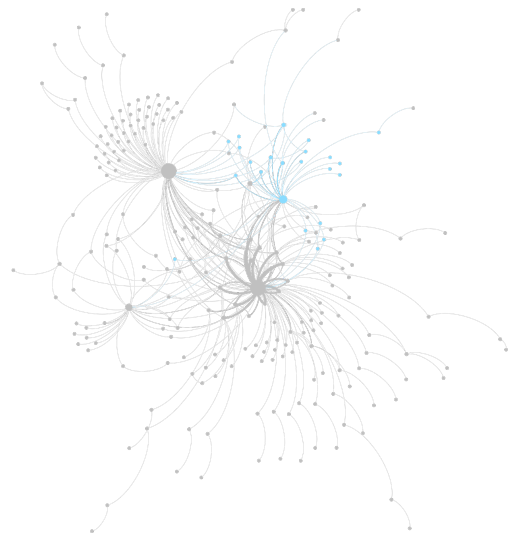
Reddit accounts for 9.39% of nodes, visualized by the Reddit central node and 22 surrounding nodes representing subreddits – theme based forums for sharing content (Vickery, 2014). In Figure 6, the paths connecting the central Facebook pages and Reddit

show case where images passed from Reddit to one of the 14 pages of collection.

However, there is also significant connection to Reddit from Twitter accounts and various webpages. This shows that Reddit is a significant intermediate point for dissemination of memes.



*Figure 6.* Post-Reddit.

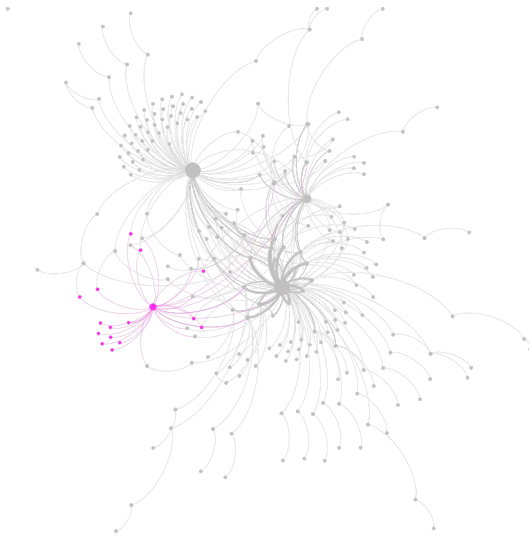


*Figure 7.* Pre-Reddit.

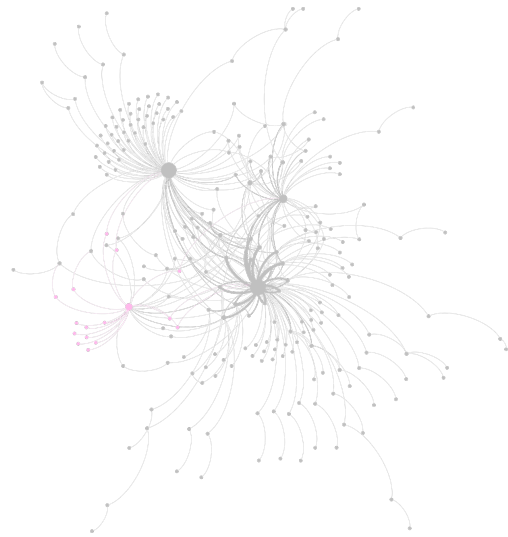
Figure 7 displays significant movement between Twitter to Reddit, with Facebook and Instagram also acting as intermediate locations. In this case, memes would have moved from prior site to Reddit, before collection on Facebook. In both images there is a cluster of short edge nodes to the upper right of the central Reddit node, which denotes Reddit as the last traceable location. However, in most cases Reddit appears to act as an intermediate location for previously created memes. This is significant to note, as much of the current literature on memes cites Reddit as being a significant producer of memes (Vickery, 2014). As will be explored in the next chapter, this research shows it is more accurate to classify Reddit as a magnifying location for memes. Thus, Reddit may be where memes find larger audiences, but not where they are first shared.

#### 4.2.4 Instagram

Instagram makes up 6.53% of nodes in the sociogram, including the Instagram base node and 15 individual accounts. Figure 8 highlights the movement of memes from Instagram through other webpages prior to collection (cases where the edge leads to a coloured node should be ignored, as these cases represent Instagram as a secondary location – as is depicted by Figure 9). The edges to the right of the central Instagram node highlight movement to both Reddit and Facebook.



*Figure 8.* Post-Instagram.

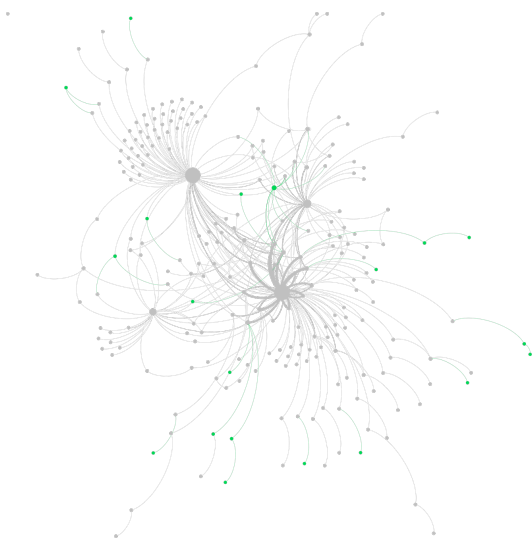


*Figure 9.* Pre-Instagram.

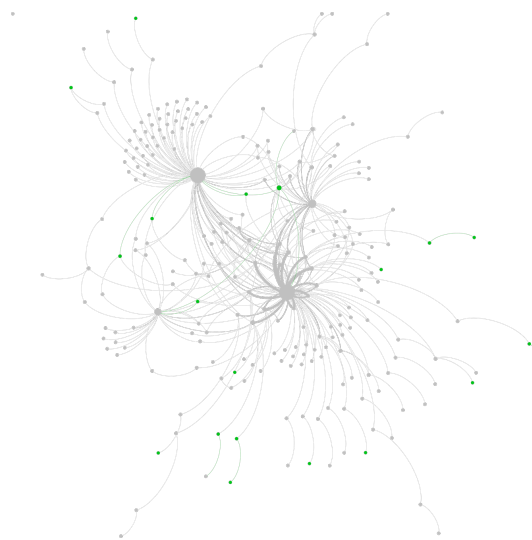
Figure 9 shows edges connecting Tumblr, Twitter, Reddit and Facebook, indicating movement of images from the aforementioned sites, through Instagram as a point of dissemination. Visible in both images, to the lower left of the base node there is a cluster of short edge nodes. This indicates cases in which Instagram was the last traceable location of a meme.

#### 4.2.5 Chatroom/Forum

Chatroom/Forum was the classification assigned to webpages that allowed for contributions on public pages to be made by the population at large. Some pages with this classification are general pages with wide readership, others were designed by and for distinct communities. Chatroom/forum based webpages account for 8.16% of total nodes, with Figure 10 highlighting the movement from chatroom/forums through other webpages. In cases where the chatroom/forum node is on the periphery, this indicates the chatroom/forum is the last traceable location of a meme. In cases where the node is an intermediate point between edges – further connected to the sociogram – this indicates the chatroom/forum is a point of dissemination. In this way, it can be seen that chatroom/forums feed into a number of different sources, including Facebook, Twitter, Reddit and Instagram.



*Figure 10.* Post-Chatroom/Forum.



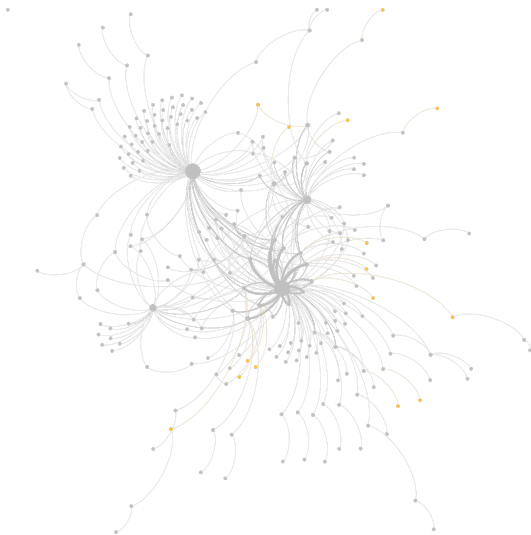
*Figure 11.* Pre-Chatroom/Forum

Figure 11 outlines the locations of a meme prior to reaching a chatroom/forum. Much like Figure 10 it is clear that chatroom/forums derive content from a variety of webpages, including Twitter and Instagram.

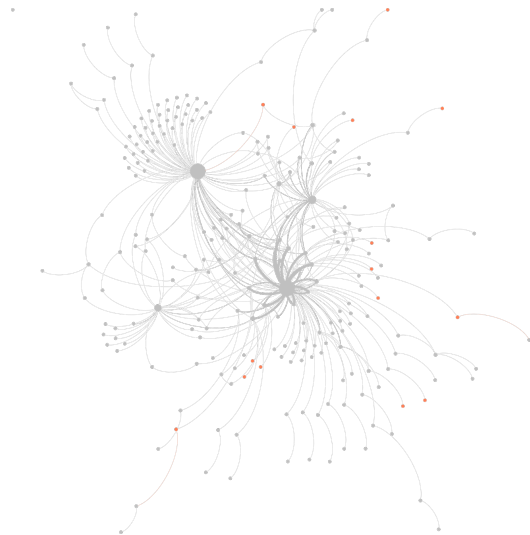


The largest chatroom/forum node, found above the Facebook base node, is Imgur – a popular image sharing webpage. While not significant enough to warrant its own image, the presence of edges in both figure 10 and Figure 11 highlight Imgur as an intermediate point of dissemination.

#### 4.2.6 Blog



*Figure 12.* Post-Blog.



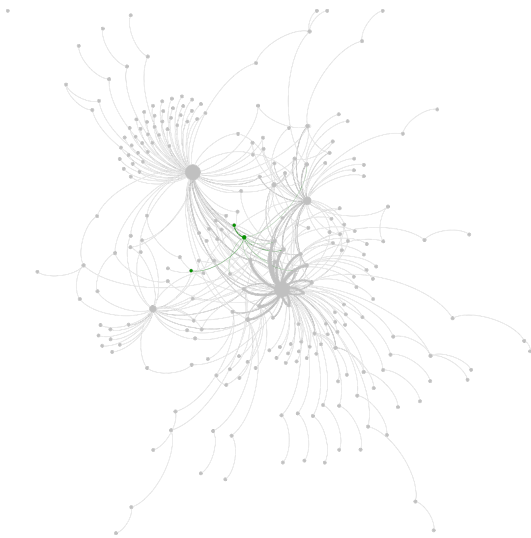
*Figure 13.* Pre-Blog.

6.12% of nodes come from blog-based webpages, including both personal blogs and blogs with multiple authors. Figure 12 shows the webpages that share images previously shared on blogs – these include Facebook, Imgur and Reddit. Figure 13 highlights the instances where a meme traveled from a previous webpage to a blog. The three highlighted edges represent blogs that act as intermediate points of dissemination, the remaining 12 nodes show blogs as end points.

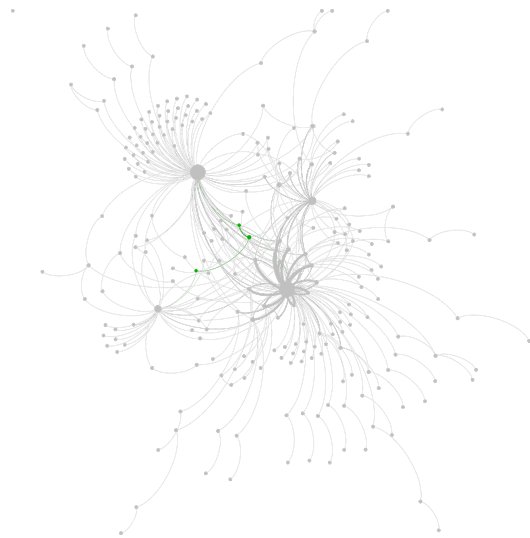
#### 4.2.7 4Chan

While 4Chan is commonly recognized in the literature as a key source and dissemination point of memes, that was not reinforced by the data collected (Nissenbaum

& Shifman, 2017). Only 1.22% of nodes were made up of 4Chan boards. The three nodes include the 4Chan base node as well as /pol/ and /ck/ boards. Figure 14 shows the locations where images were collected after their being posted on 4Chan – most notably Facebook and Reddit. Figure 15 highlights locations that images came from prior to being shared on 4Chan – specifically Facebook, Twitter and Instagram. This indicates that 4Chan is predominantly a point of dissemination and not an origin point.



*Figure 14.* Post-4Chan.



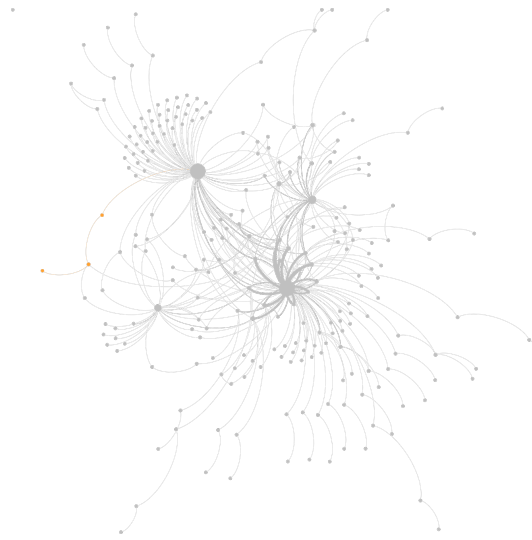
*Figure 15.* Pre-4Chan.

#### **4.2.8 Tumblr**

Tumblr accounts for 1.22% of nodes, though only two memes traced were shared on the webpage. Figure 16 shows that the memes move from Tumblr through Instagram and Facebook. Figure 17 highlights the path taken by a meme from Twitter to Tumblr. The single node to the left of the Tumblr base node indicates that one image can be traced to Tumblr as the last known location.

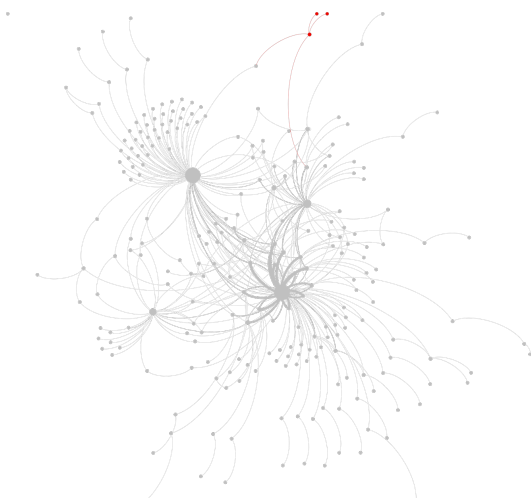


*Figure 16.* Post-Tumblr.



*Figure 17.* Pre-Tumblr.

#### 4.2.9 YouTube



*Figure 18.* YouTube.

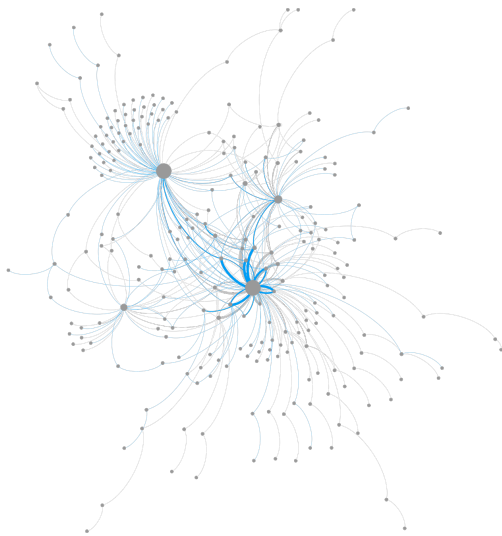
taken up by Reddit from Youtube.

#### 4.3 Identity Based Analysis

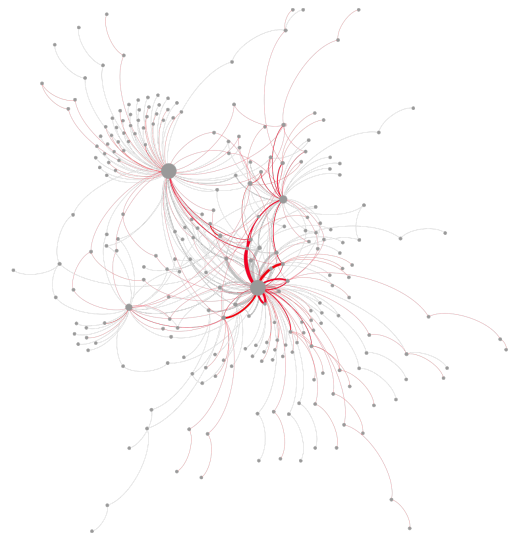
Of the 188 memes traced, 85 (45.2%) are from left wing Facebook pages, 79 (42.0%) are from right wing Facebook pages, and 24 (12.8%) are from identity-based

Youtube accounts of 1.22% of nodes, made up by the base node and two distinct pages or channels. As can be seen in Figure 18, the two distinct pages are each origin points, and as such a second image illustrating where they drew their images from is irrelevant. Figure 18 highlights that prior to reaching Facebook, one meme was taken up by Twitter, one

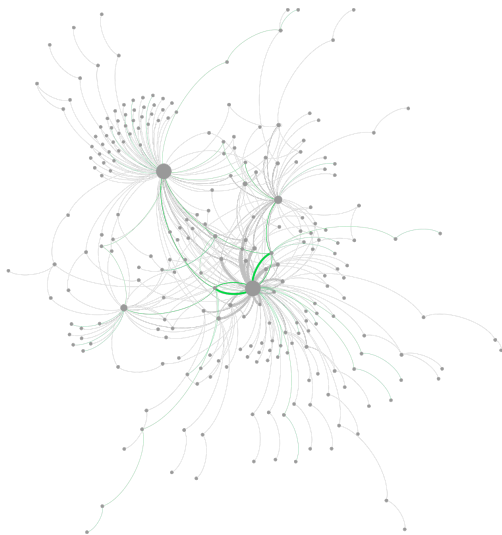
Facebook pages. Figure 19 outlines the movement of memes collected from left-wing Facebook pages. Figure 20 outlines the movement of memes collected from right-wing Facebook pages. Figure 21 outlines the movement of memes collected from issue-based Facebook pages.



*Figure 19.* Left-Wing.



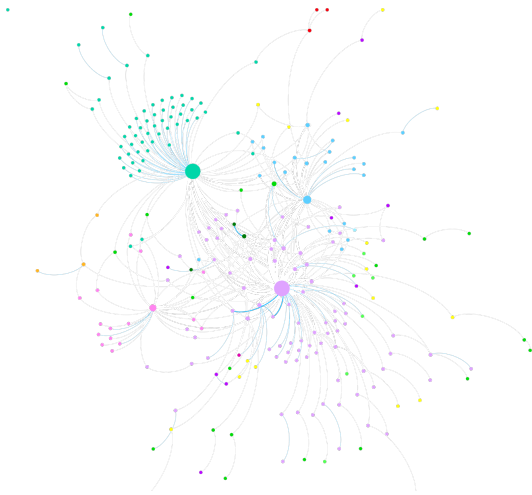
*Figure 20.* Right-Wing.



*Figure 21.* Issue-Based.

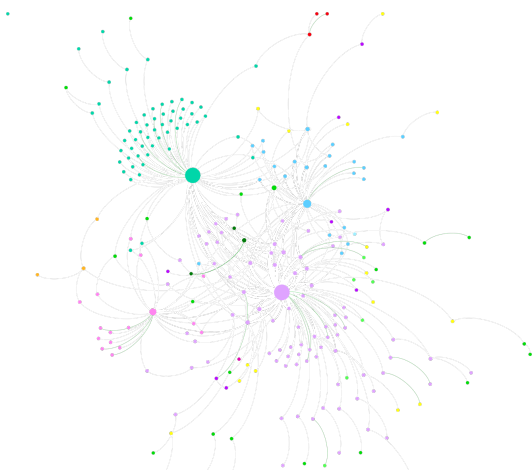
In comparing the images side by side, there are limited observations that can be made in the difference of movement based upon identity of origin. Each of the three images show memes moving through Facebook, Twitter, Reddit, Instagram and 4Chan. Likewise, each Left, Right and Issue pages pass back through Facebook.

Furthermore, Figure 22, Figure 23



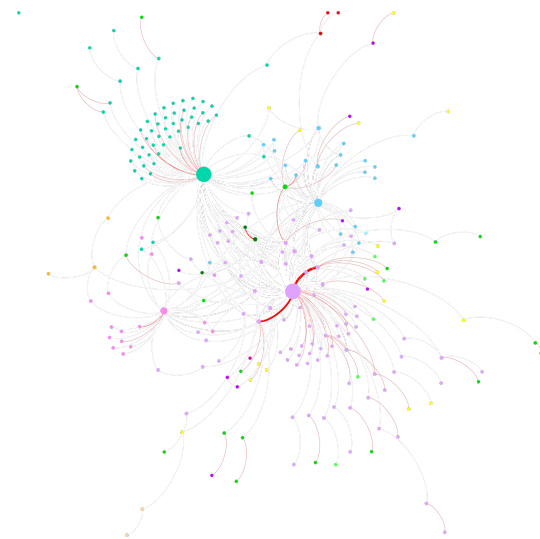
*Figure 22. Left-Wing Origin.*

from at least one source prior to reaching the page of collection, in comparison, two right pages both have memes without any previous posting online. Third, the right draws from 12 chatroom/forum based webpages, while the left draws upon 4 chatroom/forum based webpages.



*Figure 24. Issue-Based Origin.*

and Figure 24 each illustrate the webpages of origin for left, right and issue based pages respectively. From this perspective several observations can be made. First, the left draws upon Twitter based memes more than the right. Second, all left pages came



*Figure 23. Right-Wing Origin.*

Similarly, the right draws upon seven independent blogs, while the left draws upon three. With this said, statistical analysis is beyond the scope of this research and as such no correlation or causation can be drawn.

## 5.0 Discussion

### 5.1 Significance for Study of Memes

The methods produced and data collected for this research not only informs the knowledge of online social networks (OSNs), but the study of memes and online communities overall. As the literature review highlights, the current methods of meme data collection and analysis are sparse, and rely heavily on self-identified meme sharing pages and subjective measures of relevance (Piata, 2016; Ross & Rivers, 2017). In utilizing software for collection and categorization of images, this research has introduced an objective approach to meme analysis in the future.

Furthermore, the creation of the meme map presented and the insights it provides into the movement of memes creates a better-structured understanding for the assumptions made by current research. There is now evidence of the manner in which memes move, and the types of webpages that they start on. With this information, depth can be provided to future research, and past research can be reflected upon with reduced assumptions.

Had this map been available prior to the existing literature, there are several aspects that may have been informed differently. The observations discussed in Chapter 4 are somewhat supported by the literature on memes and OSNs, with several key differences. Ross and Rivers (2017) discuss the role of Facebook and Twitter for political engagement, highlighting the role of memes in the process. This assertion is supported by the data collected in this paper, as Facebook and Twitter are the two most commonly used webpages. However, the significance of Facebook and Twitter does not explain the minimal role of Reddit and 4Chan in the data collected, as both sites are cited as being

influential for the creation and movement of memes in the literature (Nissenbaum & Shifman, 2017; Vickery, 2014).

There are several possible explanations for this discrepancy. First, based on the attempt to reduce researcher bias in meme selection, all images from the designated Facebook pages were considered for mapping if they met the criteria of being the most liked image for a given collection period. Because of this, a number of the memes traced were screen shots of tweets and did not adhere to the classic text-image-text meme format (Ross & Rivers, 2017). Therefore, Twitter is over represented in the sociogram compare to more traditional memes.

Secondly, based upon the methods of sharing images within Facebook, once an image is shared by one page it is easily shared by other Facebook pages. This can be seen in the multi-node Facebook edges. Because of this, Facebook may appear to play a more significant role in the dissemination of memes than its actual contribution.

Third, the format of both Reddit and 4Chan make the searching of past posts problematic. Reddit posts operate on a points system, where posts that get a greater number of likes are more likely to be seen by future users (Vickery, 2014). Because of this system, search engines (karma decay, Google) generally only pick up images from well-liked posts, and high traffic subreddits. Likewise, 4Chan operates as a non-archived forum (Nissenbaum & Shifman, 2017). Because of this, posts can only be recovered using public searches if they have been saved on external 4Chan archive site. It is therefore possible that 4Chan played an unrepresented role in the dissemination of collected memes that cannot be traced given the methods at hand.

With this said, the minimal role of Reddit and 4Chan in the dissemination of memes that later succeed on Facebook should inform past and future assumptions about where images are coming from and why they gain popularity. The current literature predominately relies on a linear model of meme movement – where images start in more isolated OSNs of Reddit and 4Chan and then move their way to the masses through Facebook and Twitter (Bratich, 2014; Nissenbaum & Shifman, 2017). The data being presented implies that few of the images from isolated OSNs are reaching the population at large (Spitzberg, 2014). The research that currently exists may benefit significantly and reach different conclusions – specifically regarding the significance of images on various webpages and the potential motivation behind the sharing and creation of memes – by adopting a non-linear assumption of meme movement (Ross & Rivers, 2017). However, the research presented in this paper is in no way conclusive, and requires continued exploration and development in order to paint a realistic picture of the movement of memes online.

### **5.1.1 Future meme mapping research.**

The most obvious development for the research to take is an increase in tracing and mapping of memes. While the scope of this research only allowed for 188 memes to be traced, increasing that number would allow for more conclusive findings. Furthermore, capacity to collect from more Facebook pages, based in various states and languages could further inform discrepancies and North American bias in the research. In this capacity, the research could benefit significantly from an influx in researchers from various states and political backgrounds.



There is also further research that can be developed in enriching the webpage based map, as well as further content analysis of specific memes and OSNs. The current map does not account for time of movement, or movement of individual images. By incorporating different variables of consideration, as well as different mapping mechanisms, the image can be developed to depict a more comprehensive understanding of the memes collected. This could be further informed by a statistical analysis of the number of webpages passed through, time of movement and visual characteristics within and between political factions.

With the use of different collection software, the literature would benefit significantly from the use of diverse webpages of origin. As is clear from the map created, the role of Facebook in reinforcing images that have been shared is substantial. Is this process the same for other social media sites? Only through changing the system of collection and mapping can this be found.

While this paper has thus stressed the importance of improving objective collection mechanisms and data based analysis, this is not to say there is not a need for qualitative content analysis of memes. In conjunction with mapping of images, coding of visual characteristics, including key terms, colours, and image layout would be of extreme benefit. Moreover, should there be capacity, mass content analysis of images from various political factions could aid in the development of supported assumptions regarding content and meme movement.

Based on the discrepancies of the literature highlighted above, and the apparent minimal role of 4Chan and Reddit, one of the potentially informative developments of this research would be the development of origin based tracing. Through tracing memes

from webpages that act as dissemination and origin points – such as Reddit and 4Chan – one could track the future success of images in reaching significant audiences through large social media sites. This would involve collection of memes from a perceived webpage of origin and performing subsequent searches for that meme in the coming days and months. Collecting in this manner would allow for analysis of the characteristics of the images that are succeeding, as well as the proportion of images that succeed from a specific page of origin.

## **5.2 Significance for Study of Politics and OSNs**

The use of images across various webpages removes the need of physical proximity for the spread of political ideas and identities (Ríos, Aguilera, Nuñez-Gonzalez & Graña, 2017). When combined with the accessibility of memes, as image-based, (generally comical) commentary on the human experience, individuals with vastly different backgrounds are able to relate to the same image (Ross & Rivers, 2017). Because of this, groups from various socio-economic, ethnic and age-based backgrounds who share similar political beliefs, but might not otherwise interact, could share the same meme. The movement through similar yet different political groups facilitates the spread of various beliefs – as memes introduce members from potentially congruent political identities to the same vocabulary and discourse (Vickery, 2014).

The influx of shared vocabulary across physical and socio-economic bounds reduces potential barriers to the spread of political theories and identities (Elder-Vass, 2012). This could be a contributing factor to the influx of cross-national political movements – specifically those previously seen as being on the ‘fringe’ (Potter & Dunaway, 2016). Where previously the ideology of these groups would have remained

within the SMC of those within close physically and social proximity (friends and family), we are now seeing it spread to the OSN at large (Spitzberg, 2014).

As is highlighted in the literature review, the creation and engagement of individuals with and within OSNs changes dependent upon the primary webpage of engagement (Piata, 2016). Facebook and Twitter – which are predominantly founded on pre-existing social networks – are effective pages for mobilization of OSNs, but generally do not contribute to their creation (Smidi & Shahin, 2017). Alternatively, 4Chan and Reddit’s anonymity lend themselves to the creation of new OSNs. The creation of these new OSNs produces direct and indirect gatekeepers, giving the OSN a sense of elitism (Nissenbaum & Shifman, 2017). To be part of one of these communities, one must a) know it exists and b) understand the dialog and references being used within the community.

Within these communities that develop, there is a general sense of importance and relevance to politics on the global scale (Nissenbaum & Shifman, 2017). While OSNs do play a role in large-scale politics, the data collected in this research suggests that it is minimal compared to perceived importance (Ross & Rivers, 2017). As can be seen in the map created, Reddit and 4Chan appear to play a relatively small role in the movement of memes. One potential explanation of this is the inaccessibility of the material produced by these elite OSNs based upon dialog and theory gatekeepers (Nissenbaum & Shifman, 2017). As these isolated OSNs develop nuanced dialog and imagery, few memes produced within the OSN will be accessible to the population at large (Steinberg, 1999). This would imply that the images that are popular on widely used social media sites –

such as Facebook and Twitter – use vocabulary and imagery that is somewhat familiar to the reader – in most cases the least radical memes.

Yet, as with all discourse, the spread of these gatekeeper memes – as they are shared through larger OSNs on Facebook and Twitter – are introducing wider audiences to the dialog and theories of the more elite OSNs found on Reddit and 4Chan (Elder-Vass, 2012). While the majority of people will see these images and pass them off as nothing more than a good laugh, their existence will also incite the interest of some individuals (Nissenbaum & Shifman, 2017). These engaged individuals – in looking for more ‘like’ material – are more likely to eventually encounter the OSN from which the original image originated. While gatekeeper dialog and theories may prevent the population at large from engaging with these elite OSNs, the desire to become an ‘in’ member will drive others to become more familiar with the dialog and theories of the community.

Belonging to an elite community brings with it a sense of empowerment and connection that has been associated with large SMCs and radicalization throughout history (Gitlin, 1994; Mosse, 1998). The attractiveness of being an in-group member encourages exploration of the ideas and theories that belong to the community. In this way, small number of images and ideas released from an OSN begins the radicalization process, by engaging individuals with the most accessible dialog and theories, while introducing them to the community specific dialog (Spitzberg, 2014). If operating on the assumption that initial introduction to community specific dialog is through Facebook and Twitter, continued engagement with memes will bring the individual to a level of dialog comprehension where gatekeepers are no longer a barrier to engagement. At this

point, the individual may actively seek the ideas of the OSN on less conventional social media sites – such as Reddit and 4Chan – thus self-directing the process of radicalization.

Once an individual has reached the OSNs of Reddit and 4Chan, the process of engaging with the spectrum of users – moderate to extremists – will further reinforce the necessity of being an ‘in-group’ member (Gitlin, 1994). The ideas being shared on these webpages are often significantly less socially marketable to the masses than the ideas shared on political based Facebook pages (Nissenbaum & Shifman, 2017). As such, the potential for radicalization and engagement with unconventional political opinions increases substantially. Through this process – as with other forms of discourse based political engagement – the exposure to a specific political faction and its discourse furthers the acceptability of the faction (Elder-Vass, 2012; Spitzberg, 2014). While this may be subconscious at first, even the normalization of terms being used will push an individual further from the mainstream into a perceived political elite. As these newly radicalized individuals begin to share the most socially acceptable material of their new OSN through Facebook and Twitter, they provide a greater audience with the gatekeepers needed to access the elite OSN (Elder-Vass, 2012; Ross & Rivers, 2012; Spitzberg, 2014).

As the dialog and views of more radical and fringe political factions grow, one can see a decrease in political cohesion of physical communities and states (Gitlin, 1994). As discussed above, the movement towards digital based SMCs over physical based SMCs increases the likelihood of engagement with politically unconventional gatekeepers (Nissenbaum & Shifman, 2017; Ross & Rivers, 2017). This has significance for domestic and international politics, as views that were previously unconventional for

the masses are gaining popularity and legitimacy. As this happens, one can see an increase in support for previously fringe political parties (Potter & Dunaway, 2016). Due to the implications that this move in development of OSNs has, it is essential to continue research analyzing the development and engagement of OSNs.

### **5.2.1 Future OSN and memes research.**

Moving forward, research is needed into the intersection of meme movement and creation with previously theory based ideas of discourse and identity in politics. This could take several forms, depending on the specific aspect of OSNs attempting to be analyzed. First, analysis of the use of images and dialog gatekeepers could aid in the understanding of differences within and between OSNs (Nissenbaum & Shifman, 2017). This could build off of the mapping methods developed, through collection and analysis of the images and terms used by various OSNs on different platforms. For the most comprehensive analysis, researchers could look over time to see if there is a significant change in the vocabulary used within and between groups over time.

Second, further mapping could be conducted with different social media webpages as the base of collection. Based on the hypothesis that the images that are shared on anonymous webpages such as Reddit and 4Chan are more radical than those on Facebook and Twitter, there is reason to suspect that the movement and origins of the memes shared on each page would be different (Nissenbaum & Shifman, 2017). As was discussed previously, this would be most effective if considering both the origins of memes shared as well as the future points of engagement from various memes.

Third, cross data analysis of the demographics most engaged in specific chat room/forum based webpages and those that are engaging with growing political

movements could provide clarity into what is at the moment an educated assumption. In the case that the demographics most prevalent in radical OSNs are also those becoming increasingly engaged in politics, this would support the notion that OSNs have significance for everyday politics (Potter & Dunaway, 2016). In the case that the demographics did not correlate, this would open the door into further research – exploring where else the movement of ideas is taking place.

While the theories and hypothesis discussed above build upon existing literature of social movements, identity and discourse in politics, there is very little research that seeks to analyze these issues from the digital perspective. In entertaining this new branch of political theory – where previous understandings of identity, discourse and social movements are applied to the digital – this research hopes to further open the door further to online political research. While the map created in this research project cannot be used to prove the existence of these theories, the relative size of various webpages, and the known characteristics of citizen engagement of each are reinforced by the existing literature on SMCs and political identity at large.

## **6.0 Conclusion**

An individual's identity and social networks play a significant role in how they view and interact with politics. Historically, both identity and social networks were formed and developed through engagement with those to whom you were closest – friends, family and colleagues (McCarthy, 1996; Mosse 1998). This allowed for the development of relatively cohesive political groups, with shared frames and discourse. However, with the ease of communication that has developed, one can see previously

congruent groups fracturing into smaller and more isolated political factions (Gitlin, 1994). Specifically, the role of social media and the development of OSNs is changing the assumptions previously made about how political identities form and the role they play in an individual's life (Nissenbaum & Shifman, 2017). Through studying memes – a new currency of digital discourse – one can gain insight into the nature of OSNs.

In acknowledging the limited literature available on OSNs and memes, this research set out to illustrate the movement of memes online. Steps have been taken to create a research methodology that limits researcher bias and subjectivity. NVivo and Gephi, both complex softwares, have been utilized to further reduce the direct engagement of researcher and data. In creating a meme map, only the most fundamental of observations have been made, based upon what the data depicts. In executing these steps, both past and future research benefits through the clarification and disillusion of past assumptions.

In tracing successful memes from popular Facebook pages to their point of origin online, several key observations can be made. First, the movement of memes is vast and complex, and as such cannot be simplified into the actions of a specific webpage or OSN. Second, the role of Reddit and 4Chan in the creation and dissemination of memes does not appear to be as significant as highlighted in the literature (Nissenbaum & Shifman, 2017; Vickery, 2014). Third, the understanding of memes and their role in the promotion and dissemination of politically unconventional views requires additional research into the spread of OSN specific dialog and imagery.

While the meme map created in this research is significant for the literature in better understanding how memes move and where they originate, there are countless



areas of research that would benefit from continued exploration. In developing this meme map, one can hope that it will illustrate the complexity of the online communities that so many take for granted. Moving forward, it is essential that individuals continue to question the ideas they are exposed to, and the impact this has on their personal perception of the world and politics. Furthermore, the impact of discourse and engagement with gatekeepers provides just a small glimpse of why the study of memes is so significant – as they are directly contributing to the promotion and radicalization of extreme political views.

### References

- Alsinet, T., Argelich, J., Béjar, R., Fernández, C., Mateu, C., & Planes, J. (2017). Weighted argumentation for analysis of discussions in Twitter. *International Journal of Approximate Reasoning*, *85*, 21–35.  
<http://doi.org/10.1016/j.ijar.2017.02.004>
- Bratich, J. (2014). Occupy All the Dispositifs: Memes, Media Ecologies, and Emergent Bodies. *Communication and Critical/Cultural Studies*, *11*(1), 64–73.  
<http://doi.org/10.1080/14791420.2013.827351>
- Buch-Hansen, H. (2014). Social Network Analysis and Critical Realism. *Journal for the Theory of Social Behaviour*, *44*(3), 306–325. <http://doi.org/10.1111/jtsb.12044>
- Elder-Vass, D. (2012). *The Reality of Social Construction*. Cambridge, United Kingdom: Cambridge University Press.
- Gal, N., Shifman, L., & Kampf, Z. (2016). “It Gets Better”: Internet memes and the construction of collective identity. *New Media & Society*, *18*(8), 1698–1714.  
<http://doi.org/10.1177/1461444814568784>
- Gitlin, T. (1994). From Universality to Difference: Notes on the Fragmentation of the Idea of the Left. In C. Calhoun (Ed.), *Social Theory and the Politics of Identity* (pp. 150–174). Cambridge, United States: Blackwell Publishers.

Guadagno, R. E., Rempala, D. M., Murphy, S., & Okdie, B. M. (2013). What makes a video go viral? An analysis of emotional contagion and Internet memes. *Computers in Human Behavior, 29*(6), 2312–2319. <http://doi.org/10.1016/j.chb.2013.04.016>

Kaufmann, M., & Jeandesboz, J. (2017). Politics and “the digital.” *European Journal of Social Theory, 20*(3), 309–328. <http://doi.org/10.1177/1368431016677976>

Klandermans, B., & Goslinga, S. (1996). Media discourse, movement publicity and the generation of collective action frames: Theoretical and empirical exercises in meaning construction. In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative Perspectives on Social Movements* (pp. 312–337). Cambridge, United Kingdom: Cambridge University Press.

Kleinberg, J. M. (1999). Authoritative sources in a hyperlinked environment. *Journal of the ACM, 46*(5), 604–632. <http://doi.org/10.1145/324133.324140>

McCarthy, J. D. (1996). Constraints and Opportunities in adopting, adapting and inventing. In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative Perspectives on Social Movements I* (pp. 141–151). Cambridge, United Kingdom.

Mosse, George, L. (1998). *The Crisis of German Ideology*. New York: Howard Fertig, Inc.

Nissenbaum, A., & Shifman, L. (2017). Internet memes as contested cultural capital: The case of 4chan’s /b/ board. *New Media & Society, 19*(4), 483–501. <http://doi.org/10.1177/1461444815609313>

- Piata, A. (2016). When metaphor becomes a joke: Metaphor journeys from political ads to internet memes. *Journal of Pragmatics*, *106*, 39–56.  
<http://doi.org/10.1016/j.pragma.2016.10.003>
- Potter, J. D., & Dunaway, J. L. (2016). Reinforcing or Breaking Party Systems? Internet Communication Technologies and Party Competition in Comparative Context. *Political Communication*, *33*(3), 392–413.  
<http://doi.org/10.1080/10584609.2015.1069767>
- Ramirez, S., Dwivedi, P., Ghilardi, A., & Bailis, R. (2014). Diffusion of non-traditional cookstoves across western Honduras: A social network analysis. *Energy Policy*, *66*, 379–389. <http://doi.org/10.1016/J.ENPOL.2013.11.008>
- Ríos, S. A., Aguilera, F., Nuñez-Gonzalez, J. D., & Graña, M. (2017). Semantically enhanced network analysis for influencer identification in online social networks. *Neurocomputing*, *0*, 1–11. <http://doi.org/10.1016/j.neucom.2017.01.123>
- Ross, A. S., & Rivers, D. J. (2017). Digital cultures of political participation: Internet memes and the discursive delegitimization of the 2016 U.S Presidential candidates. *Discourse, Context and Media*, *16*, 1–11. <http://doi.org/10.1016/j.dcm.2017.01.001>
- Scheff, T. J. (1994). Emotions and Identity: a Thoery of Ethnic Nationalism. In C. Calhoun (Ed.), *Social Theory and the Politics of Identity* (pp. 277–303). Cambridge, United States: Blackwell Publishers.

Smidi, A., & Shahin, S. (2017). Social Media and Social Mobilisation in the Middle East: A Survey of Research on the Arab Spring.

<http://doi.org/10.1177/0974928417700798>

Somers, M. R., & Gibson, G. D. (1994). Reclaiming the Epistemological “Other”:

Narrative and the Social Constitution of Identity. In C. Calhoun (Ed.), *Social Theory and the Politics of Identity* (pp. 37–99). Cambridge, United Kingdom: Blackwell Publishers.

Spitzberg, B. H. (2014). Toward a model of meme diffusion (M3D). *Communication*

*Theory*, 24(3), 311–339. <http://doi.org/10.1111/comt.12042>

Steinberg, M. W. (1999). The Talk and Back Talk of Collective Action: A Dialogic

Analysis of Repertoires of Discourse among Nineteenth-Century English Cotton Spinners. *American Journal of Sociology*, 105(3), 736–780.

<http://doi.org/10.1086/210359>

Tarrow, S. (1996). States and opportunities: the political structuring of social movements.

In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative Perspectives on Social Movements* (pp. 41–61). Cambridge, United Kingdom: Cambridge University Press.

Velasquez, A., & LaRose, R. (2015). Social media for social change: Social media

political efficacy and activism in student activist groups. *Journal of Broadcasting & Electronic Media*, 59(3), 456–474. <http://doi.org/10.1080/08838151.2015.1054998>

Vickery, J. R. (2014). The curious case of Confession Bear: The reappropriation of online macro-image memes. *Information Communication and Society*, 17(3), 301–325.

<http://doi.org/10.1080/1369118X.2013.871056>

Williams, A., Oliver, C., Aumer, K., & Meyers, C. (2016). Racial microaggressions and perceptions of Internet memes. *Computers in Human Behavior*, 63, 424–432.

<http://doi.org/10.1016/j.chb.2016.05.067>

Wu, J., Chiclana, F., Fujita, H., & Herrera-Viedma, E. (2017). A visual interaction consensus model for social network group decision making with trust propagation.

*Knowledge-Based Systems*, 122, 39–50. <http://doi.org/10.1016/j.knosys.2017.01.031>

Xu, W. W., Park, J. Y., Kim, J. Y., & Park, H. W. (2016). Networked Cultural Diffusion and Creation on YouTube: An Analysis of YouTube Memes. *Journal of Broadcasting and Electronic Media*, 60(1), 104–122.

<http://doi.org/10.1080/08838151.2015.1127241>

Zeitsoff, T. (2017). How Social Media Is Changing Conflict. *Journal of Conflict*

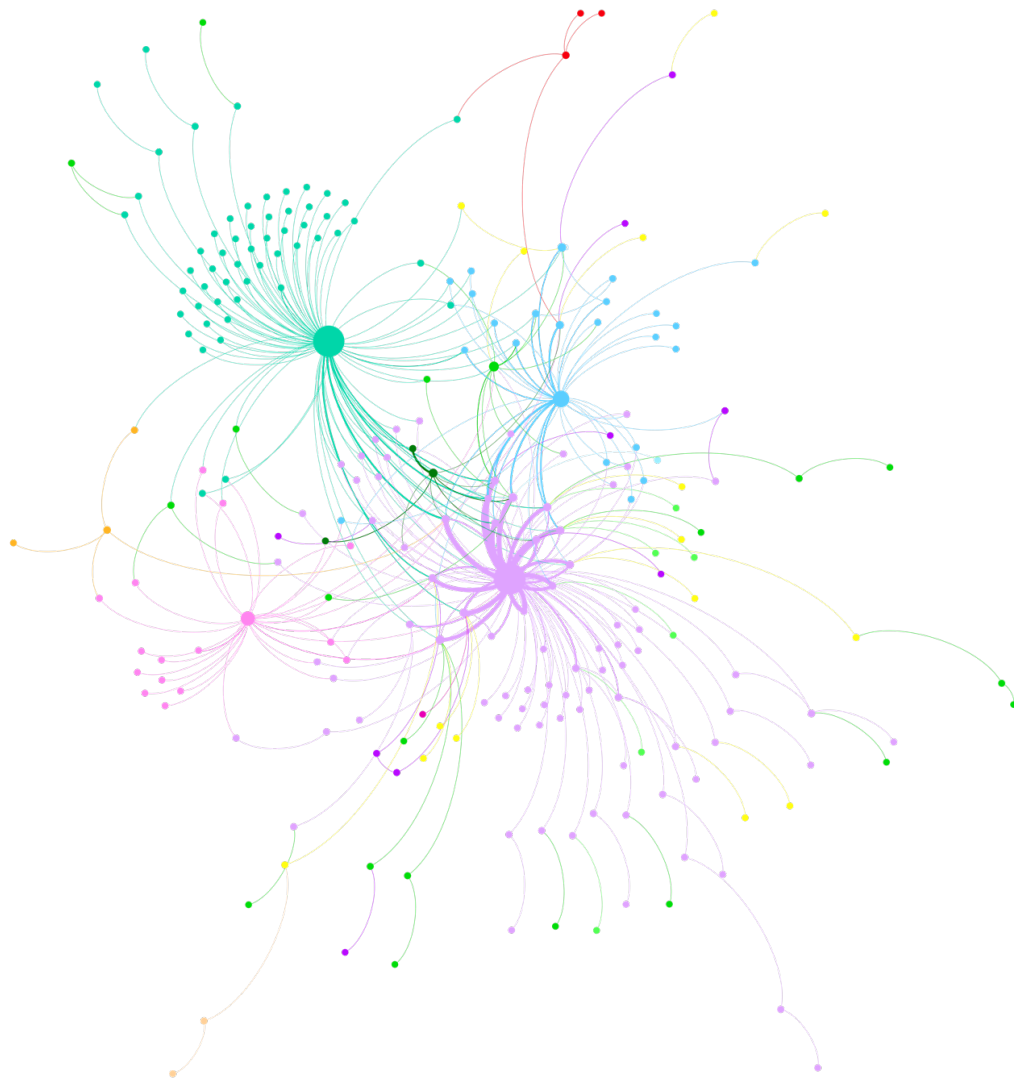
*Resolution*, 61(9), 2200271772139. <http://doi.org/10.1177/0022002717721392>

Zhu, S., Aloufi, S., Yang, J., & El Saddik, A. (2016). On the learning of image social relevance from heterogeneous social network. *Neurocomputing*, 210, 269–282.

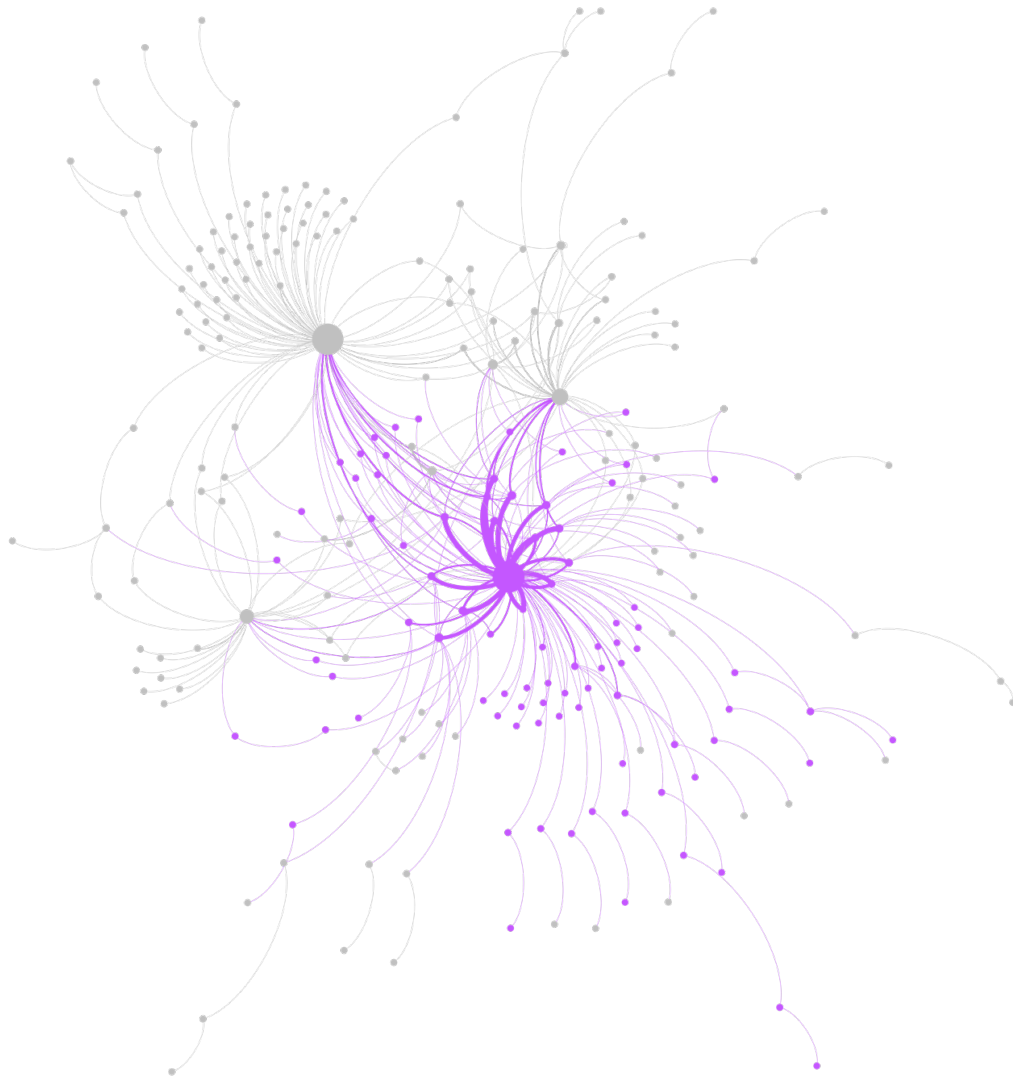
<http://doi.org/10.1016/j.neucom.2015.08.133>

Appendix

Figure A1. Full meme map.

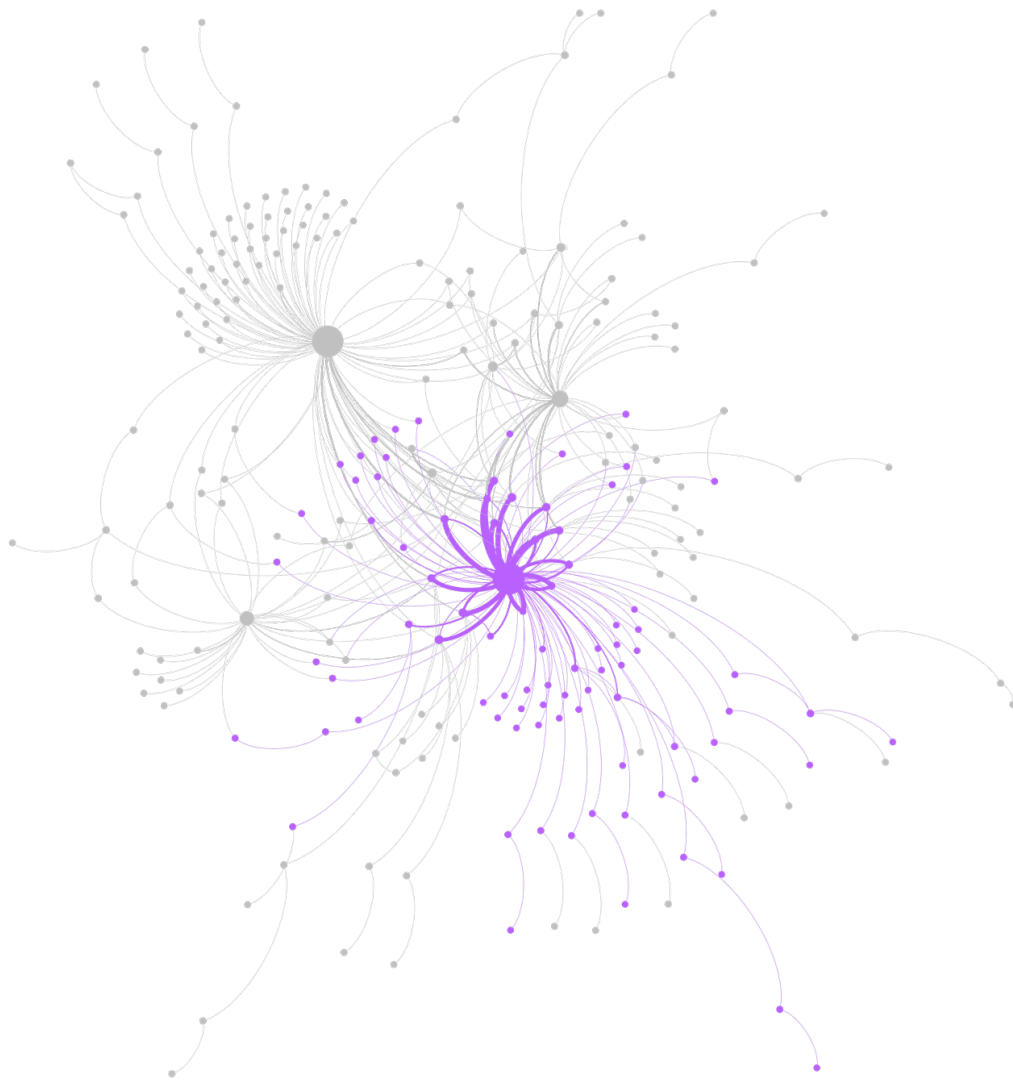


*Figure A2.* Pre-Facebook.

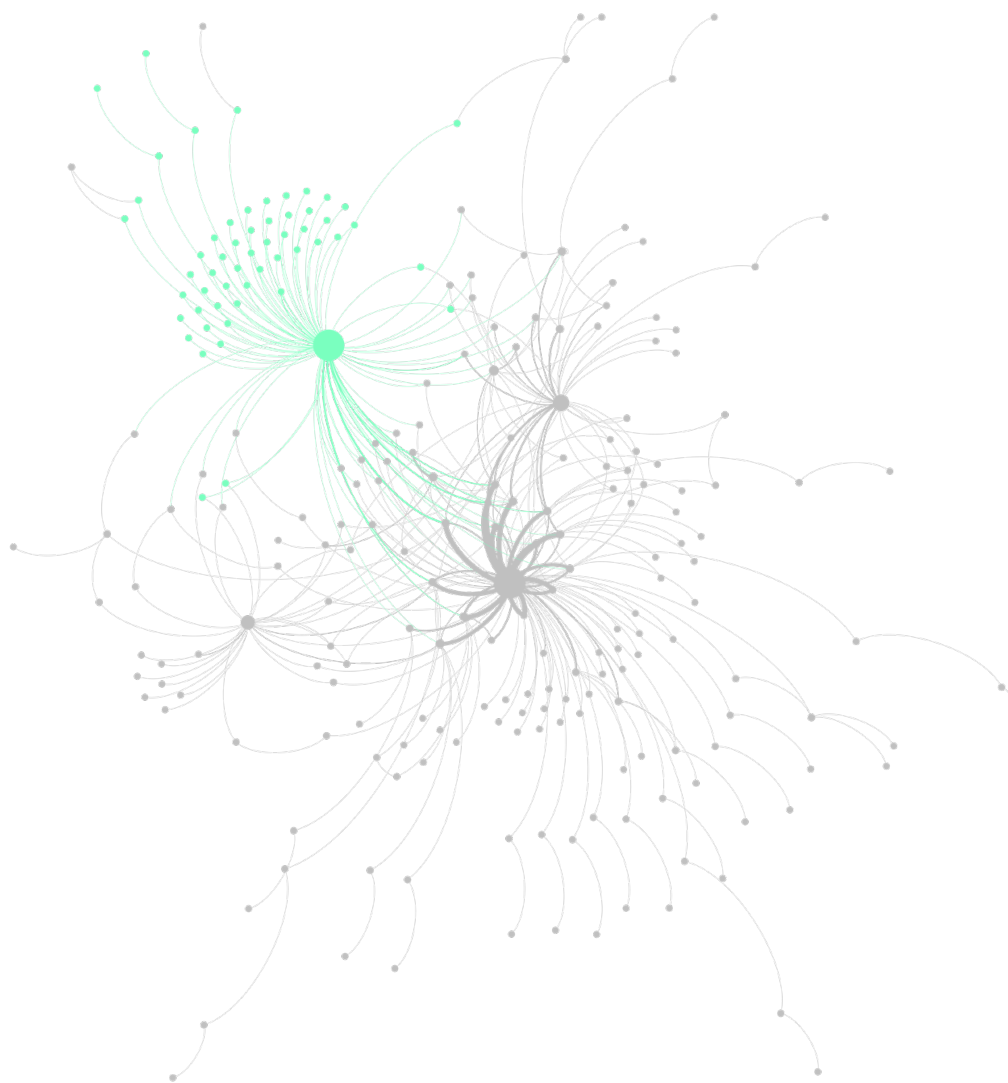




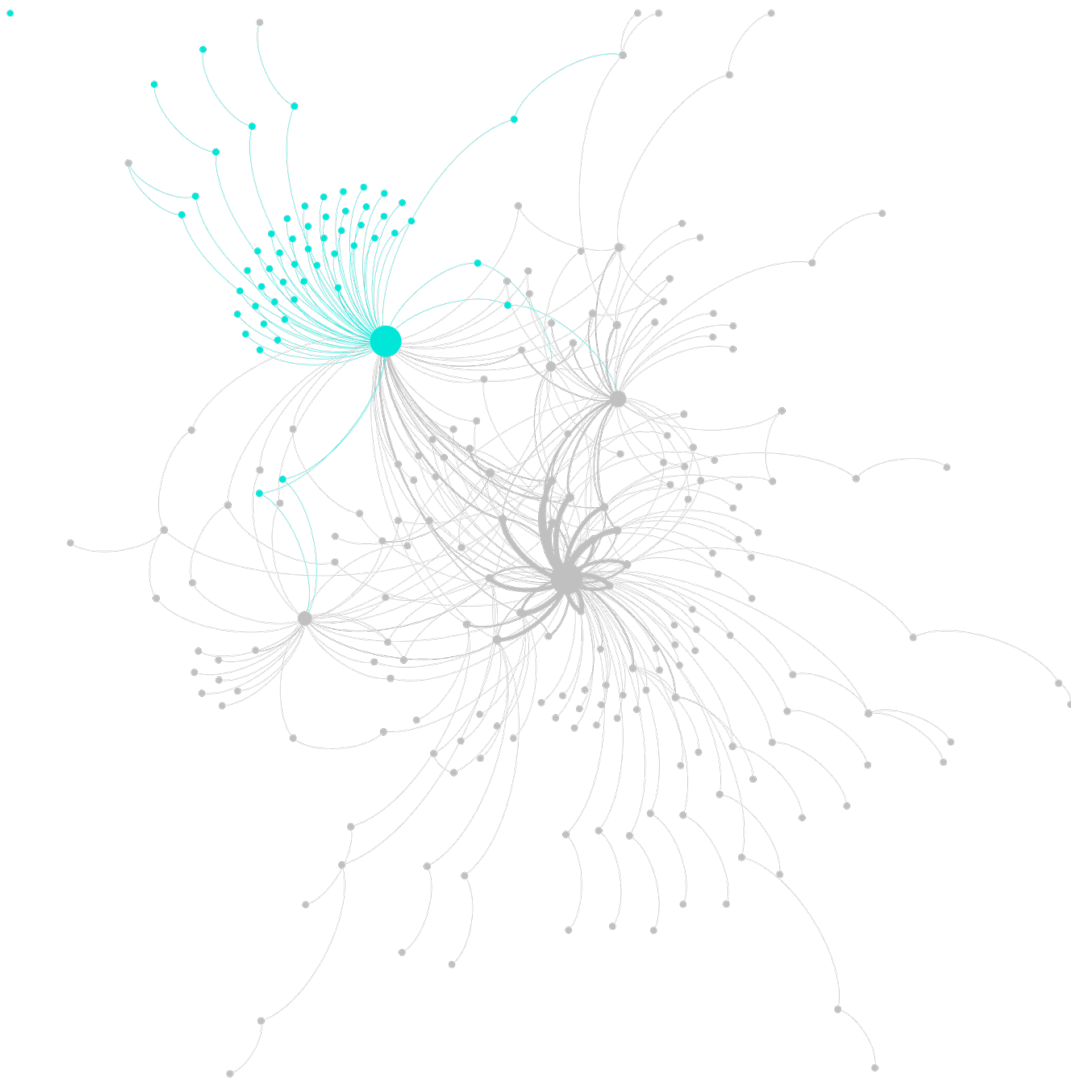
*Figure A3.* Post-Facebook.



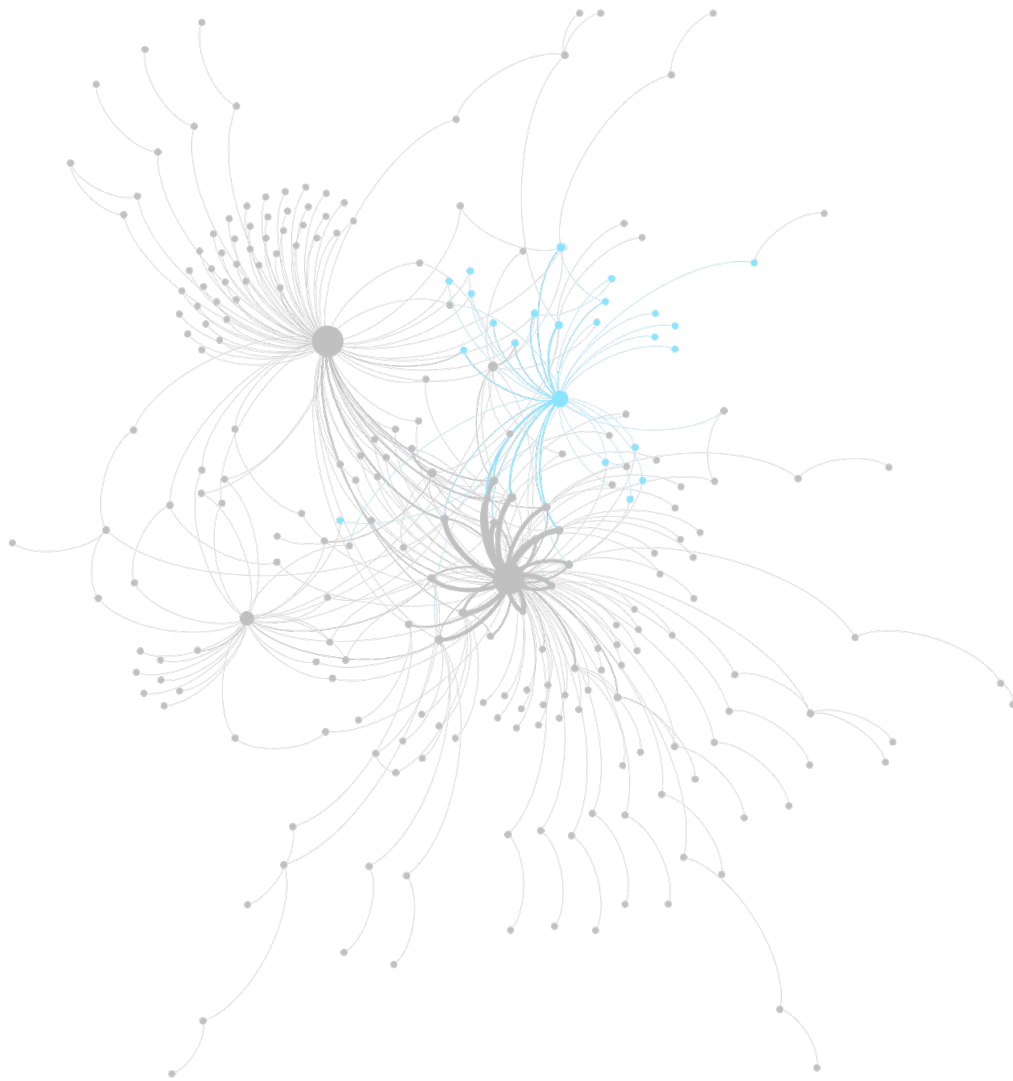
*Figure A4.* Post-Twitter.



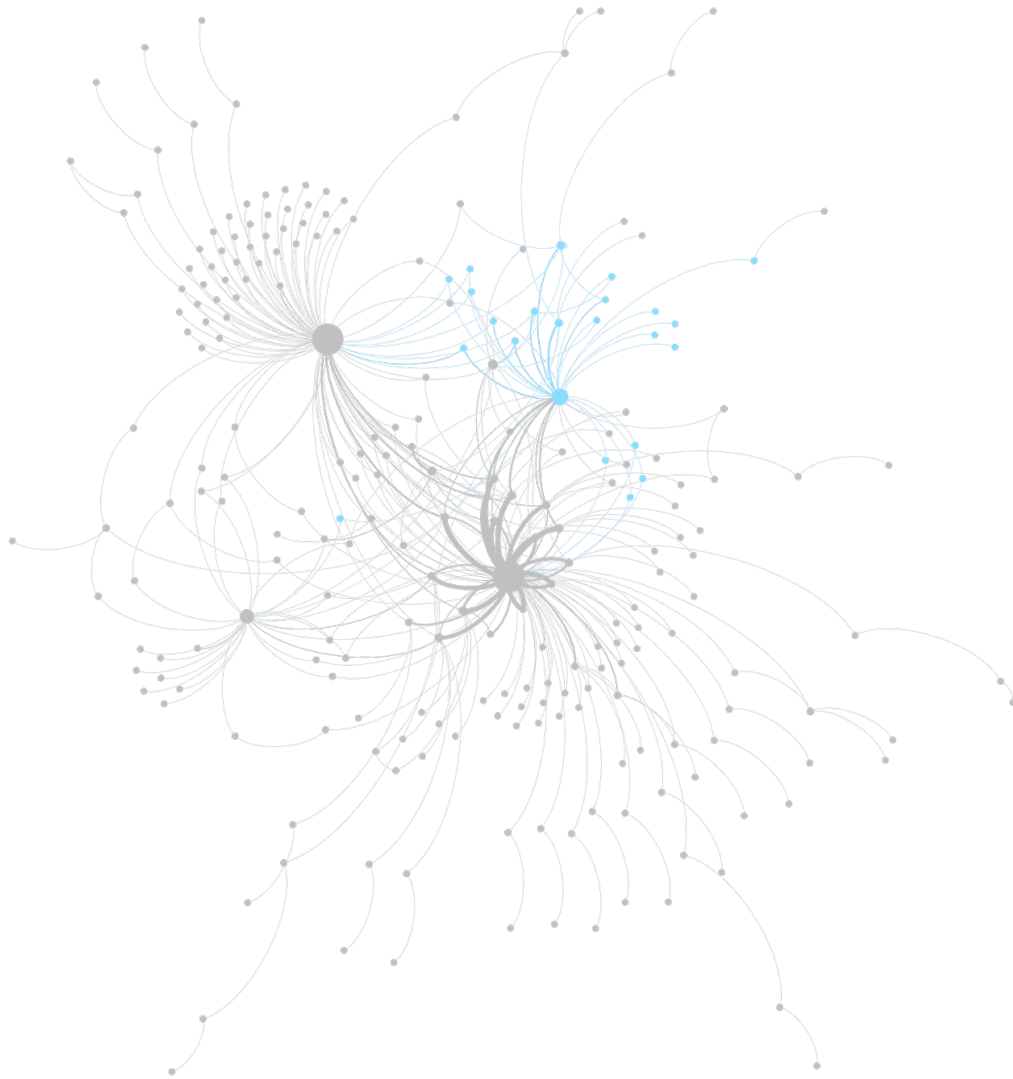
*Figure A5. Pre-Twitter.*



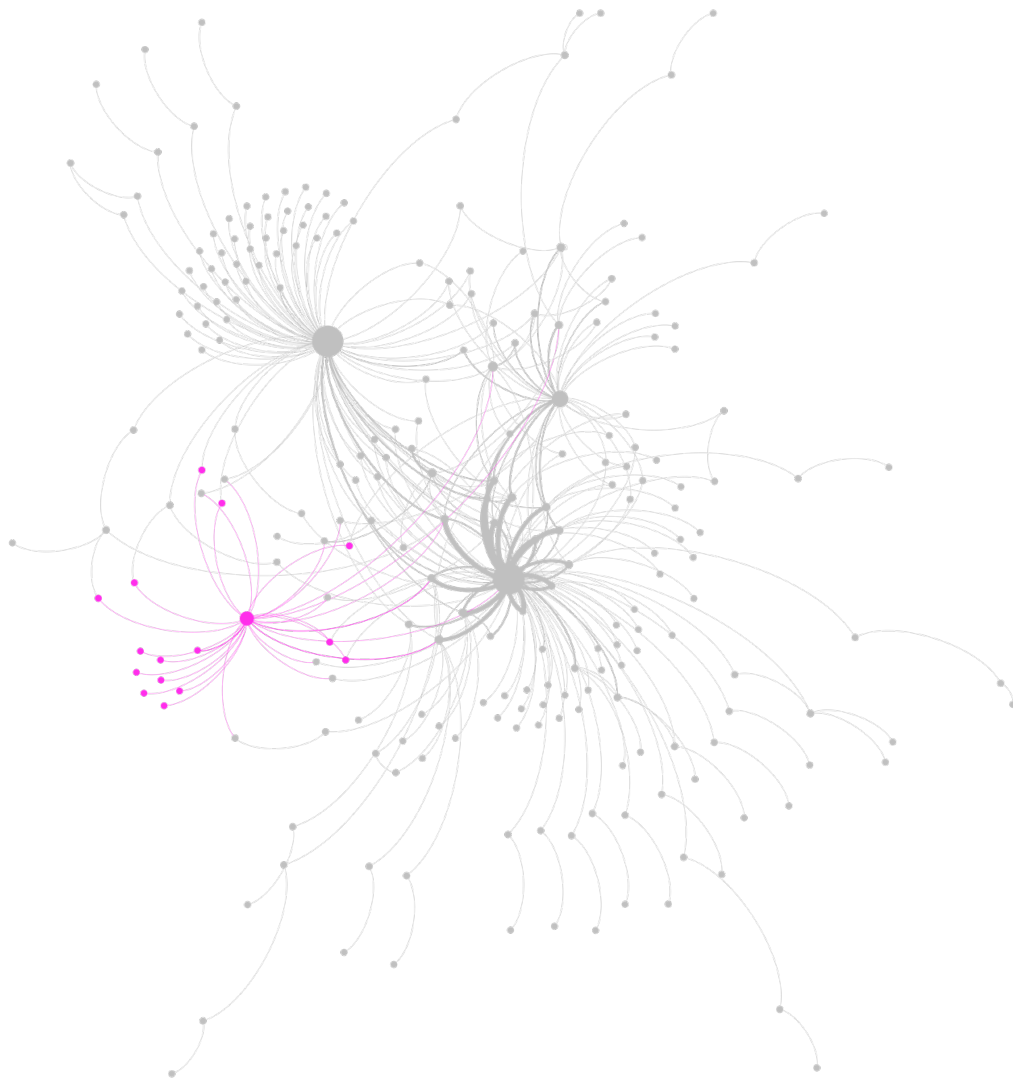
*Figure A6.* Post-Reddit.



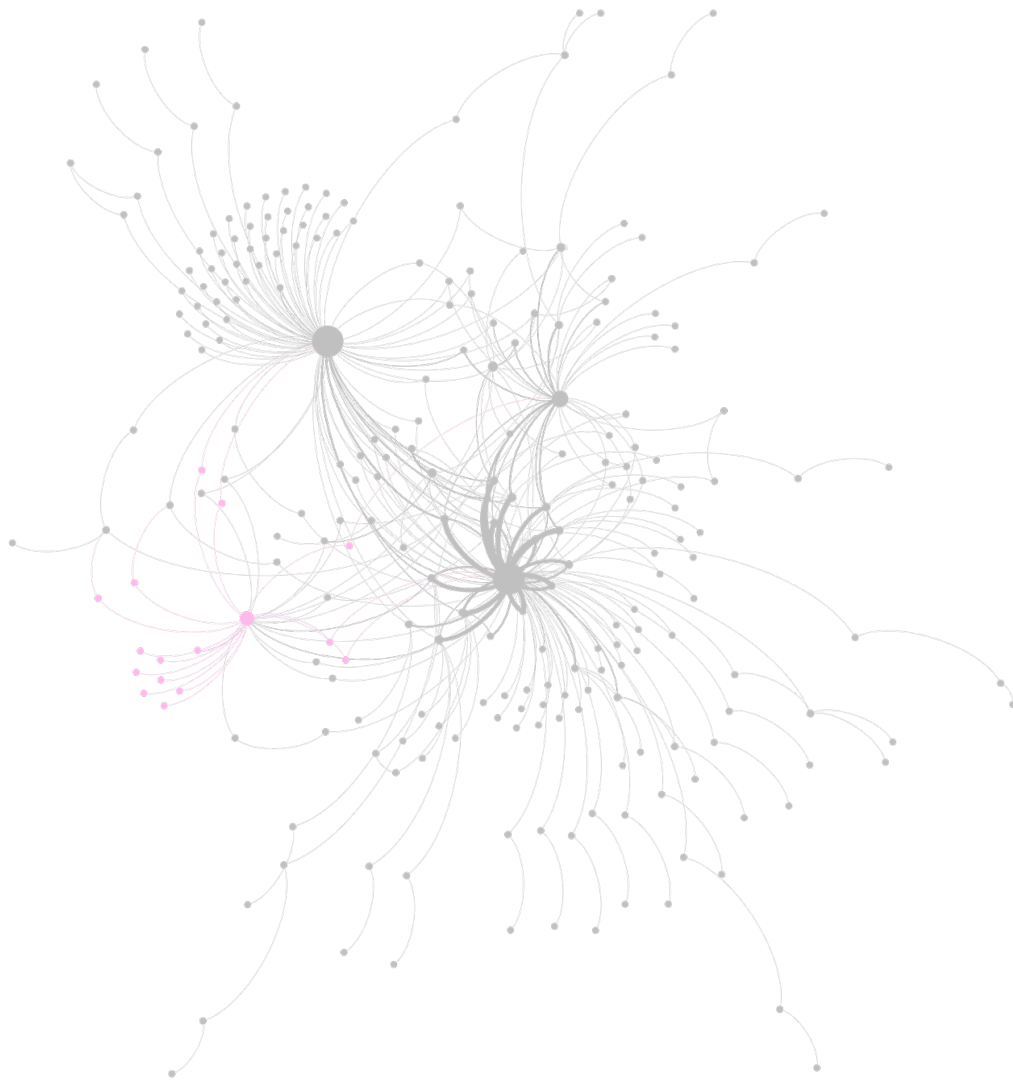
*Figure A7. Pre-Reddit.*



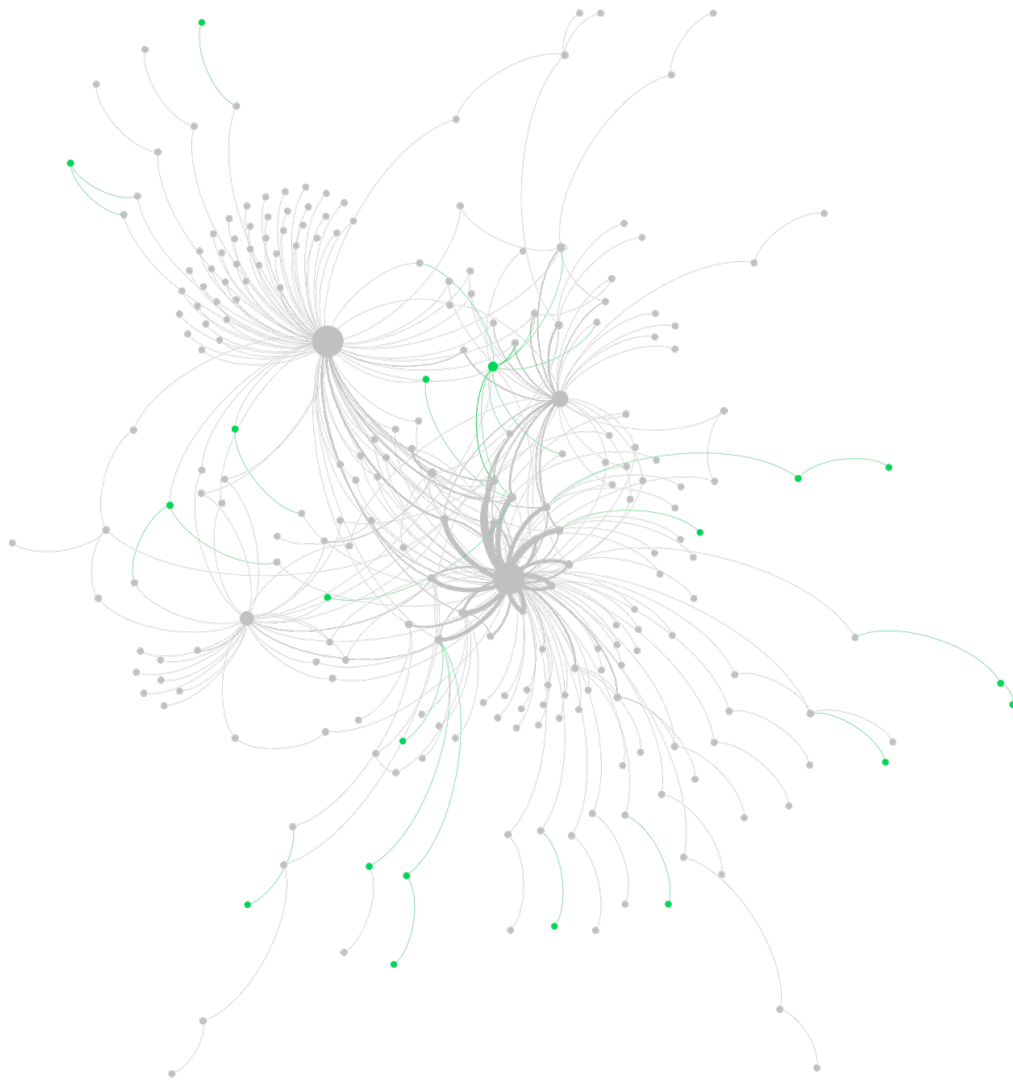
*Figure A8.* Post-Instagram.



*Figure A9.* Pre-Instagram.

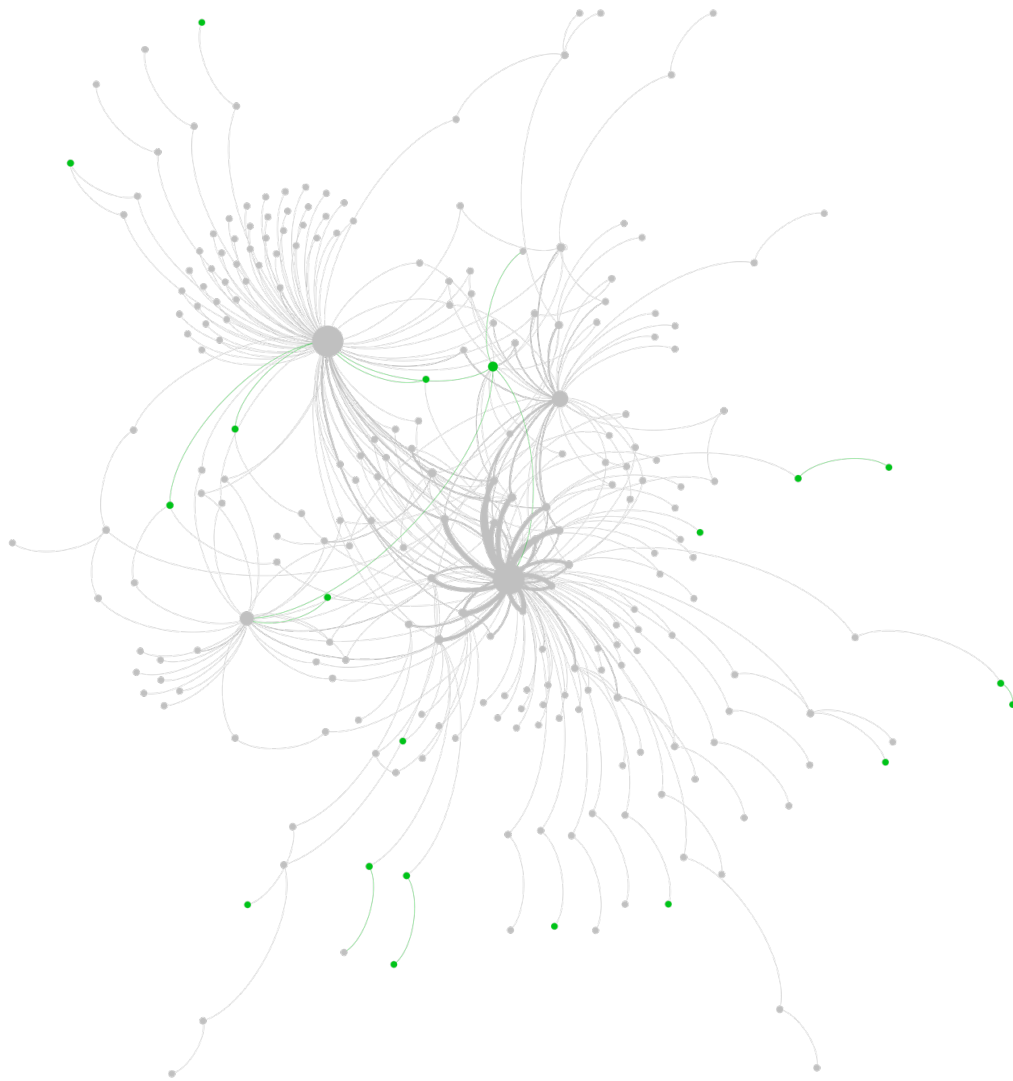


*Figure A10.* Post-Chatroom/Forum

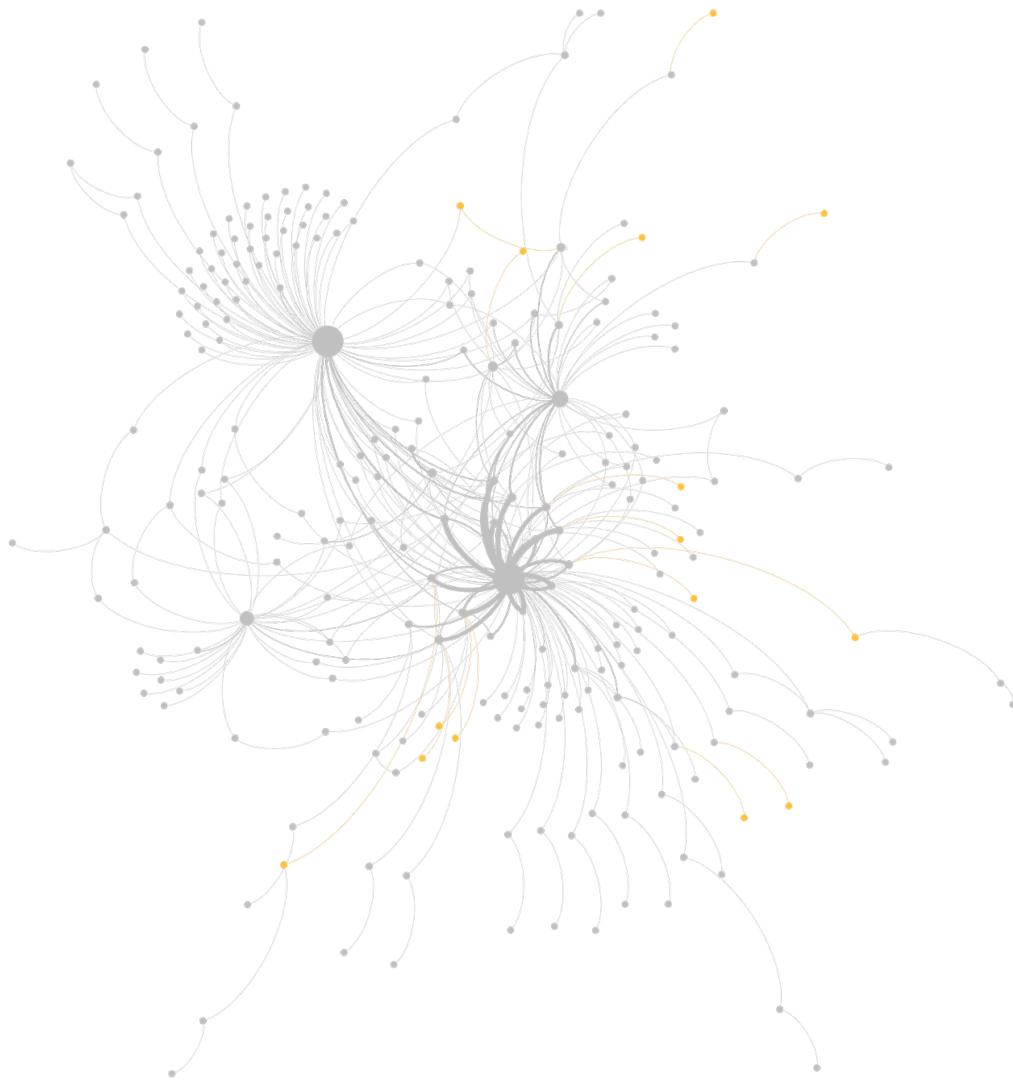




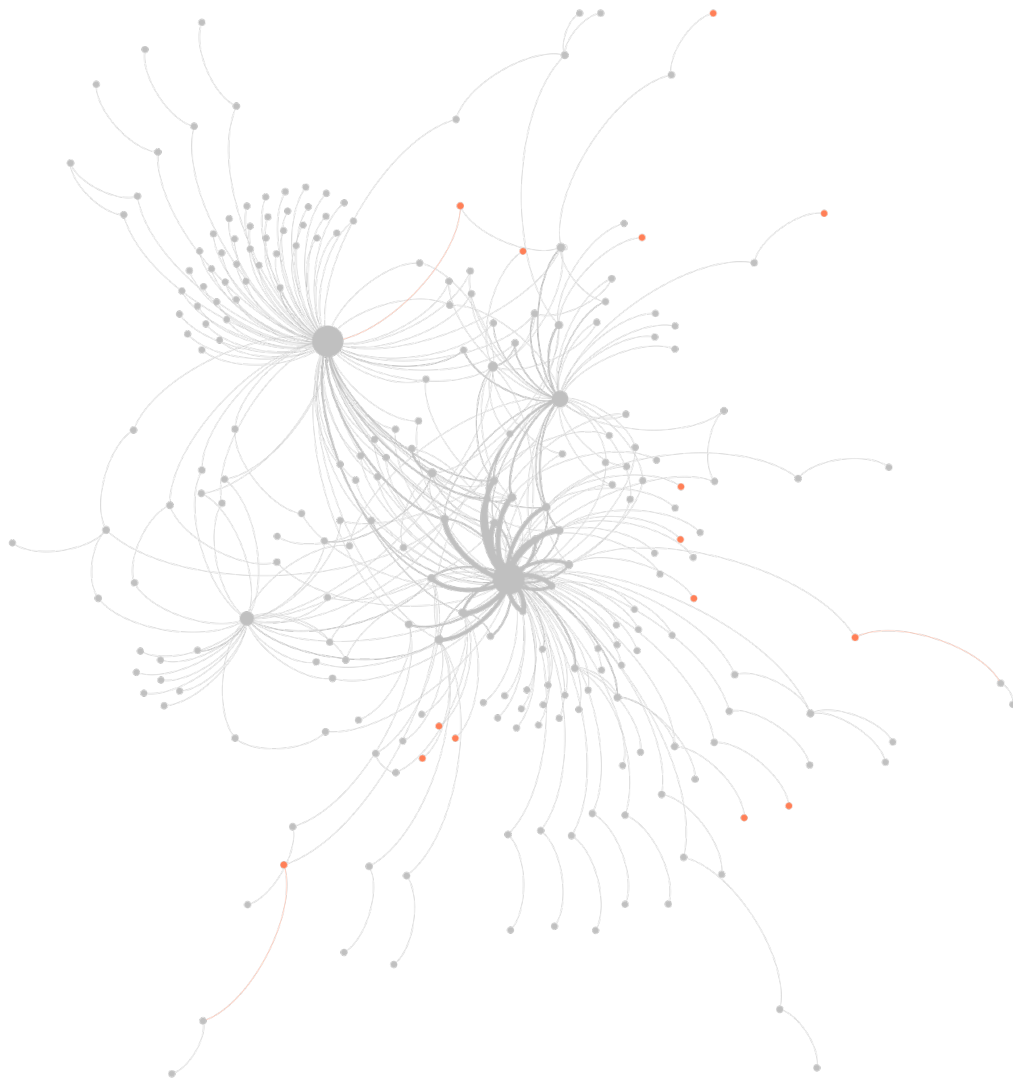
*Figure A11. Pre-Chatroom/Forum.*



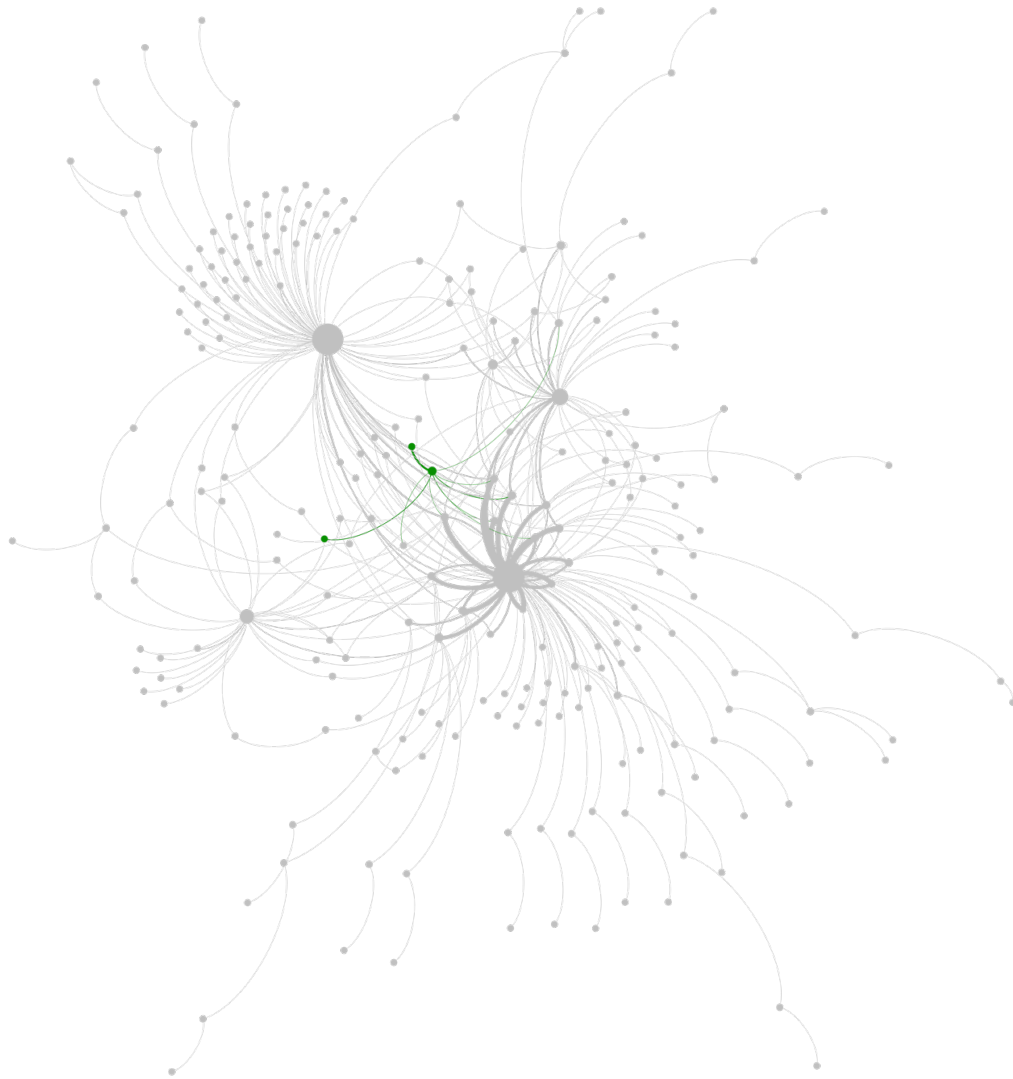
*Figure A12.* Post Blog.



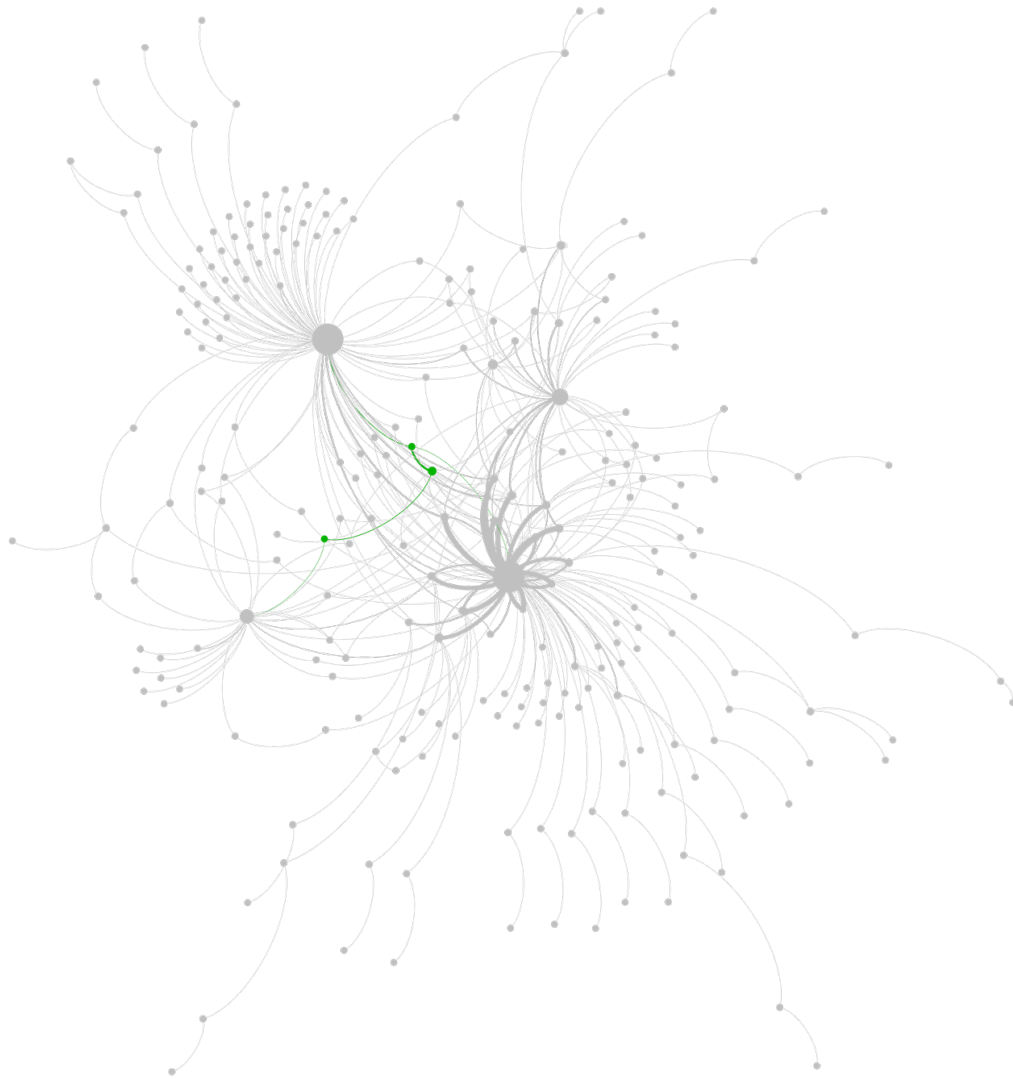
*Figure A13. Pre-Blog.*



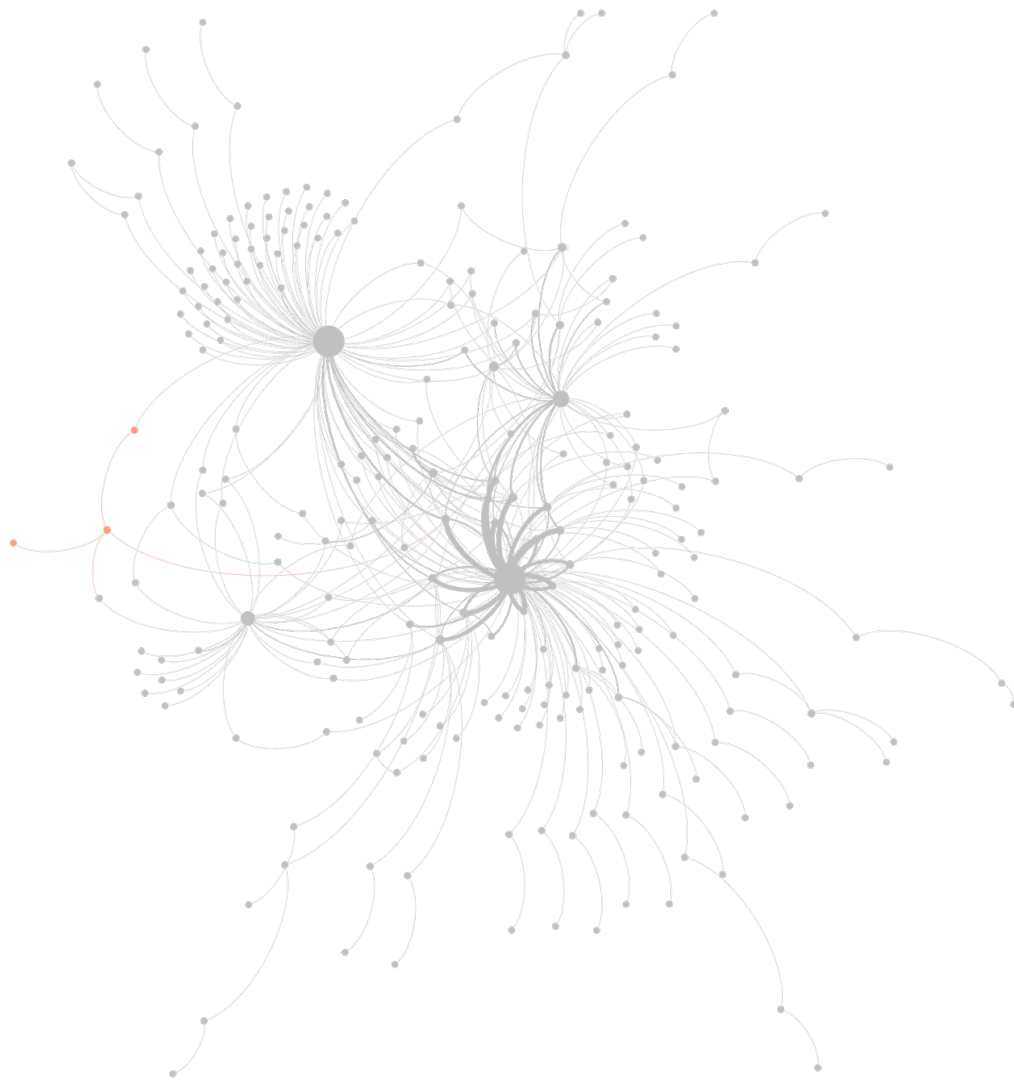
*Figure A14.* Post-4Chan.



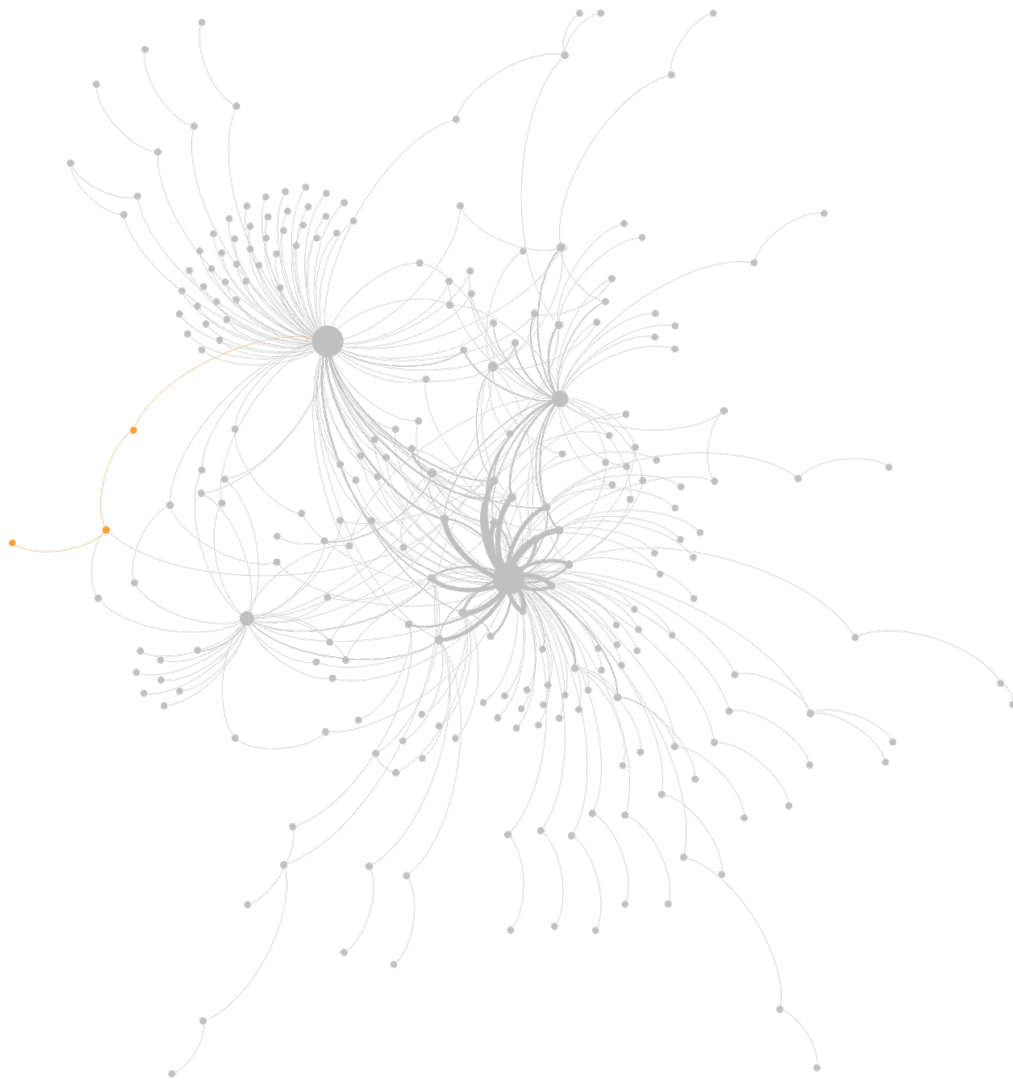
*Figure A15. Pre-4Chan.*



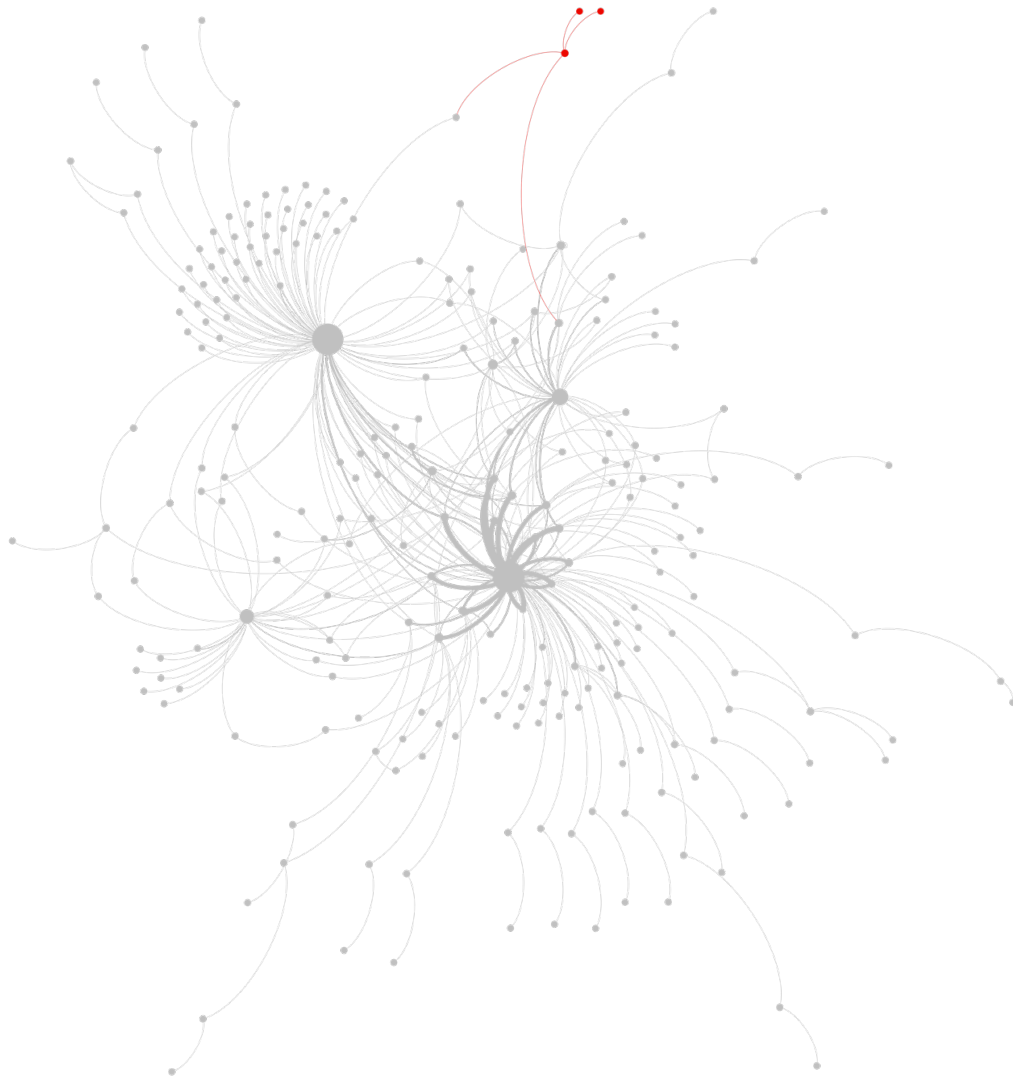
*Figure A16. Post-Tumblr.*



*Figure A17. Pre-Tumblr.*

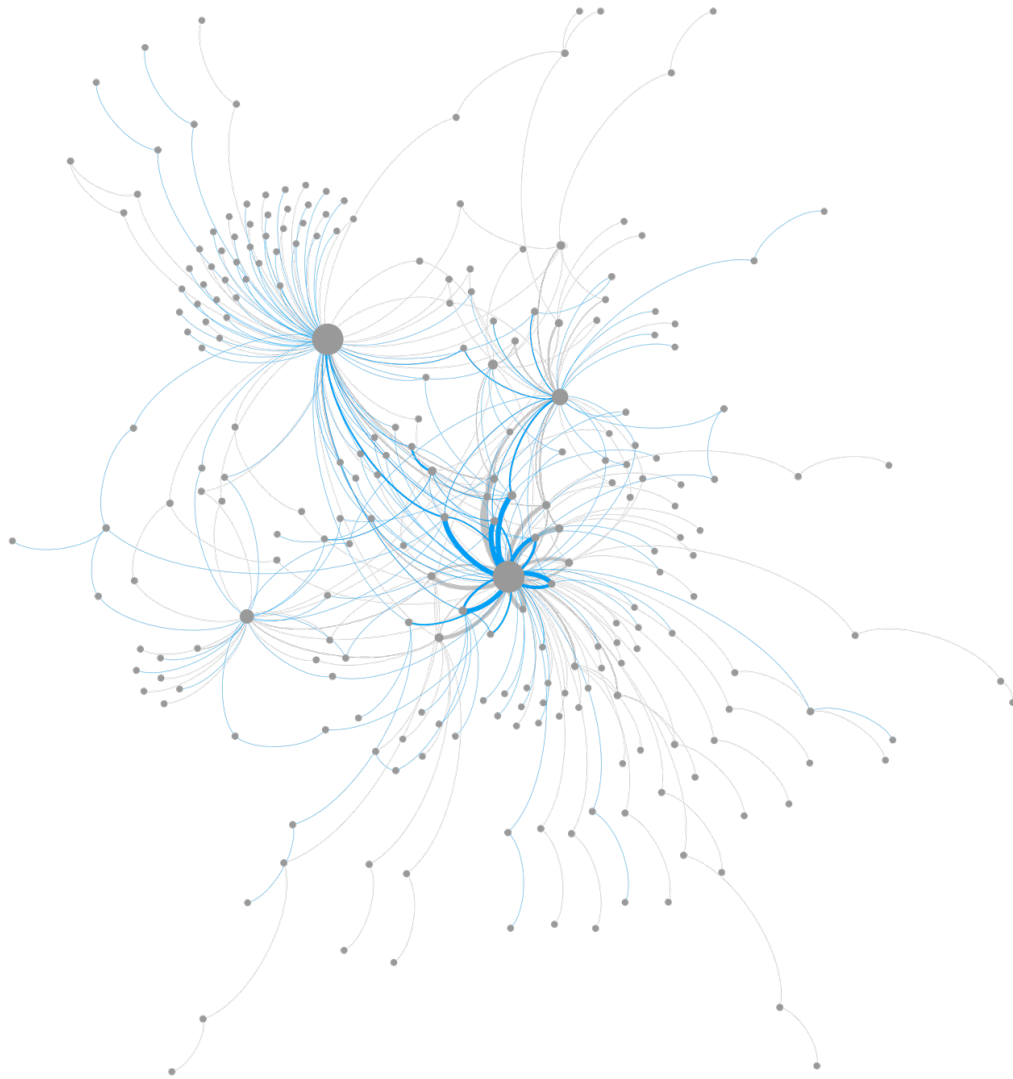


*Figure A18.* YouTube.

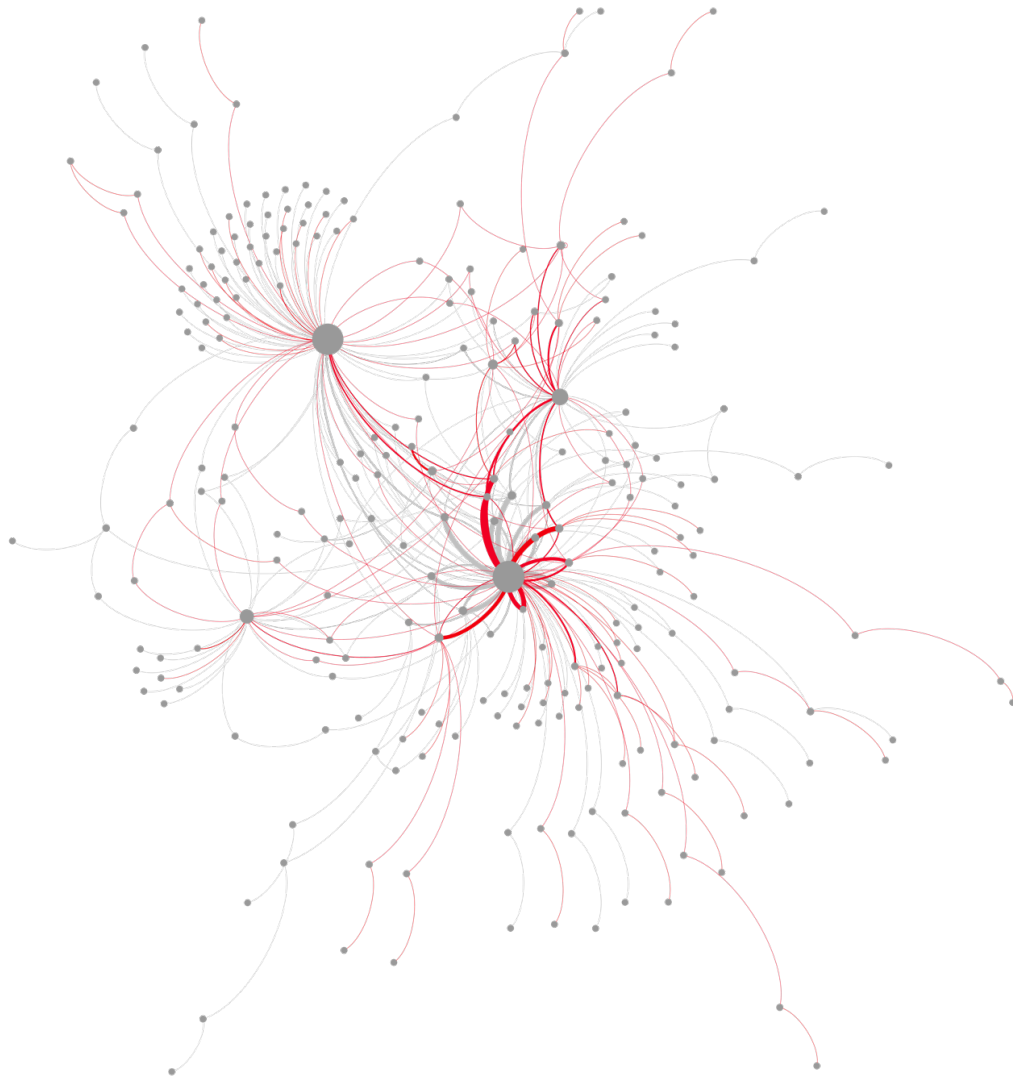




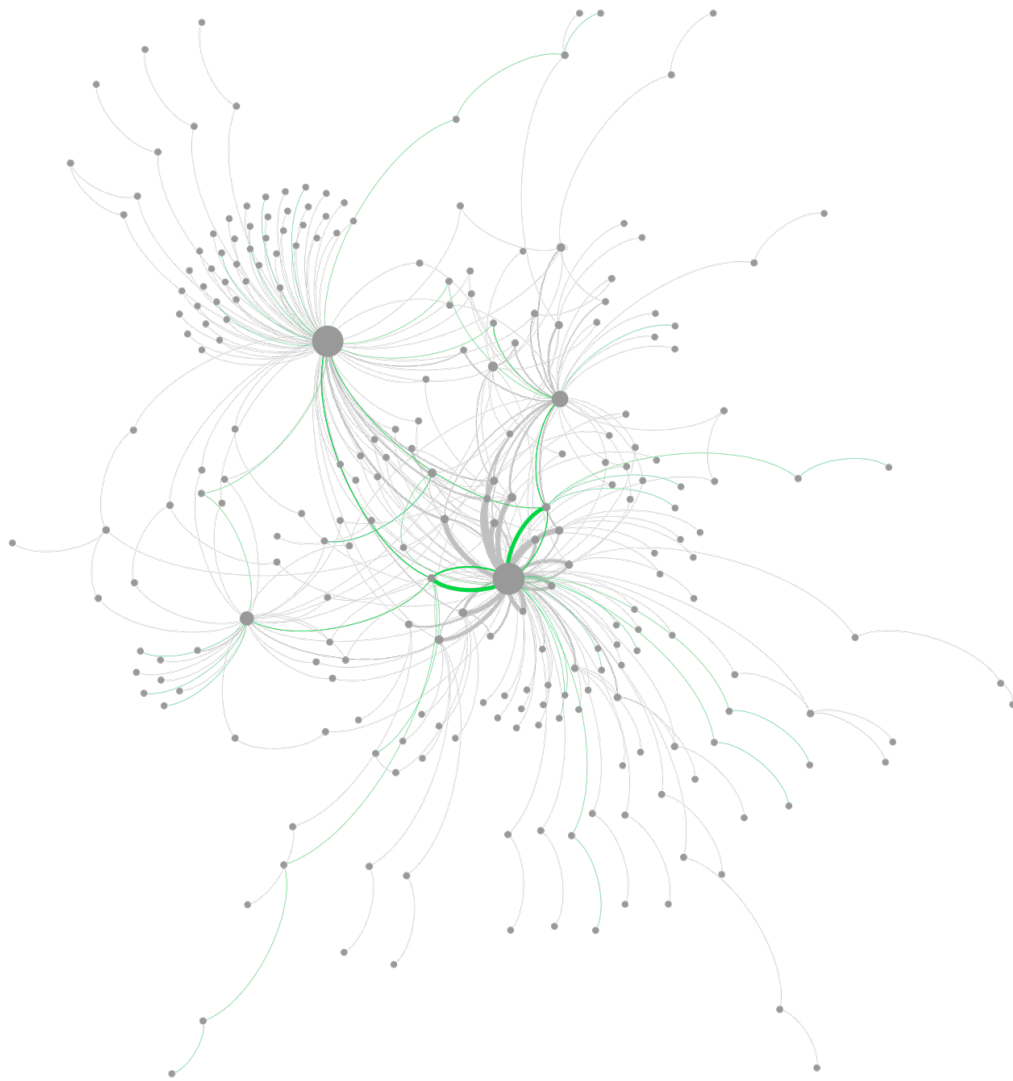
*Figure A19. Left-Wing.*



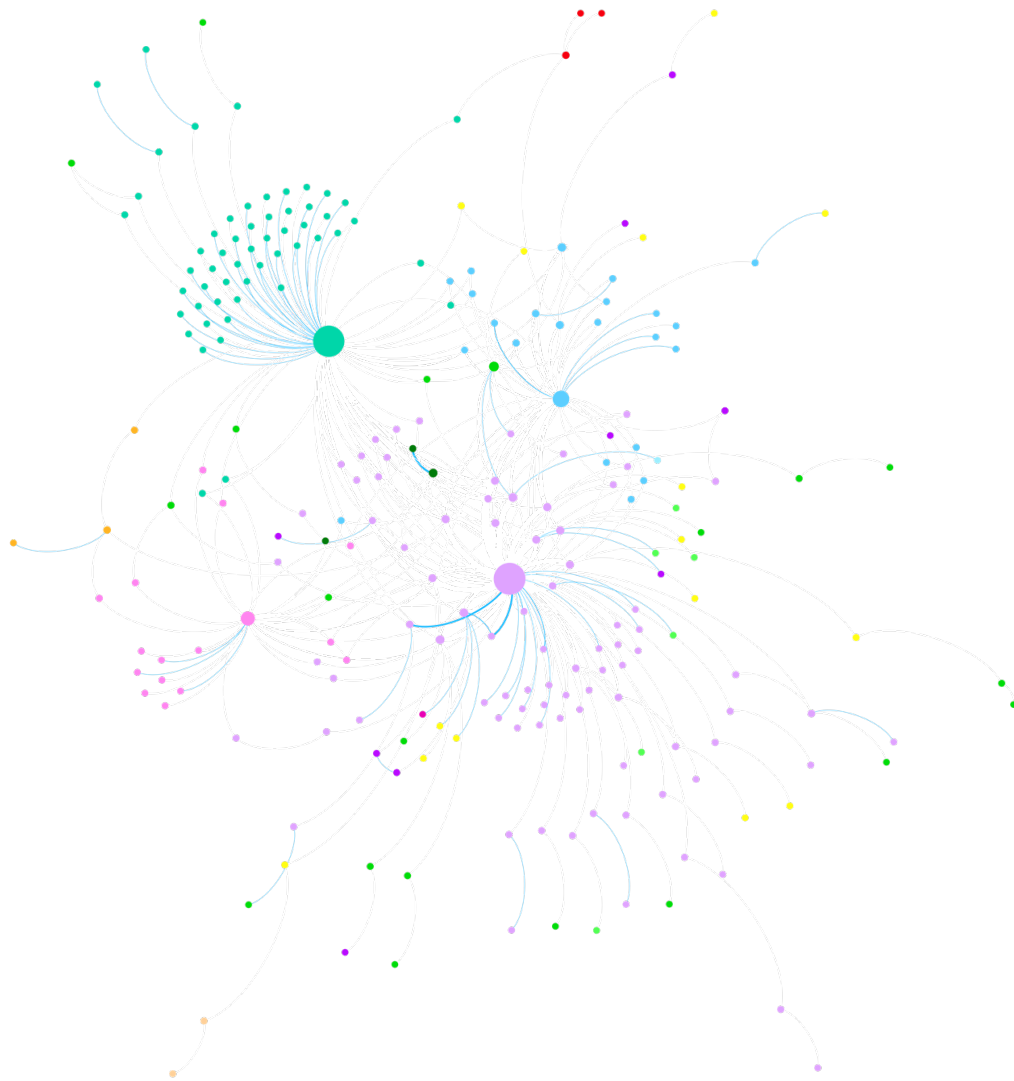
*Figure A20. Right-Wing.*



*Figure A21. Issue-Based.*



*Figure A22. Left-Wing Origin.*



*Figure A23. Right-Wing Origin.*

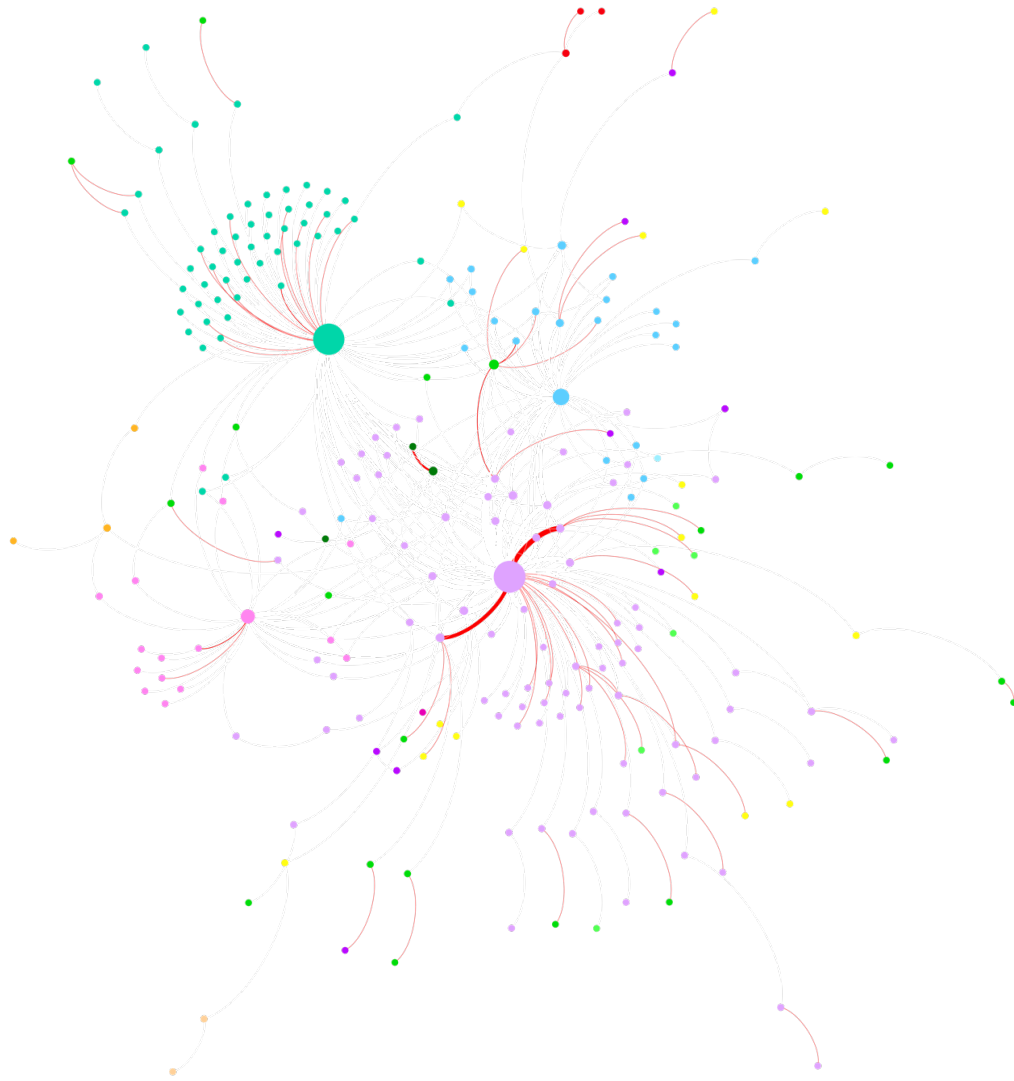


Figure A24. Issue-Based Origin.

