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IDEOLOGICAL BOTS OF #METOO: TOWARDS A THEORY OF THE
HYBRID PUBLIC SPHERE

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IDEOLOGICAL BOTS OF #METOO: TOWARDS A THEORY OF THE HYBRID
PUBLIC SPHERE

#METOO' NUN İDEOLOJİK BOTLARI: HİBRİD KAMUSAL ALAN TEORİSİNE
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ABSTRACT

This dissertation aims to provide a more nuanced understanding of how automated software agents are transforming both social media interactions and the broader notion of the public based on Barry Wellman's "Networked Individualism" and Danah Boyd's "Networked Public" theories. In doing so, it uses a dataset of more than 2 million tweets collected within the context of the ongoing #metoo controversy and attempts to understand the activities and roles undertaken by automated accounts in shaping the discussion. By qualitatively examining, these bot accounts are classified into 6 different categories which develop quite different ideologies from each other as spam bots, feminist and anti-feminist bots, political bots as pro-Trump and anti-Trump and xenophobic bots. Accordingly, it has been observed that these bots have largely shaped the discussion not only in terms of their numbers or activity densities, but also in terms of their interaction with other users as well as variety of discourses they produce and their behaviors.

The findings of this dissertation suggests that non-human actors have actively taken part in and even shaped the controversy around #metoo. This brings a new dimension to the concepts and definitions of "public" put forward so far. This public which is constituted by the intervention of these non-human actors, in other words bot accounts, can be tentatively described as a hybrid or hybridized public.

ÖZET

Çalışma, otomatik yazılım araçları olan bot hesapların, sosyal medya etkileşimlerini ve daha geniş bir perspektiften de Barry Wellman'ın "Ağlandırılmış Bireycilik" ve Danah Boyd'un "Ağlandırılmış Kamu" teorilerini temel alarak, kamu kavramını nasıl dönüştürdüğüne dair daha ayrıntılı bir anlayış sunmayı amaçlamaktadır. Bunun için hali hazırda süregelen #metoo tartışması bağlamında toplanan 2 milyonu aşkın tweetten oluşan veri seti kullanılmış, ve bu tartışmayı şekillendirmede, bu hesapların üstlendiği faaliyetler ve roller anlaşılmaya çalışılmıştır. çalışılmıştır. Niteliksel olarak incelendiğinde, bu bot hesapları birbirlerinden epeyce farklı ideolojiler geliştiren 6 farklı kategoride sınıflandırılmıştır; spam botlar, feminist ve feminizm karşıtı botlar, Trump yanlısı ve Trump karşıtı olan politik botlar ve son olarak da yabancı düşmanı olan botlardır. Buna göre, bu botların tartışmayı sadece sayıları ya da etkinlik yoğunlukları açısından değil, aynı zamanda diğer kullanıcılarla etkileşimleri ve davranışlarını ürettikleri çeşitli söylemler açısından da büyük ölçüde şekillendirdiği görülmüştür.

Bu tezin sonucu olarak, bu şekilde, insan olmayan aktörlerin tartışmaya katıldığı ve hatta tartışmalarını güçlü bir şekilde şekillendirdiği bu kamu, şimdiye kadar öne sürülen "kamu" kavramlarına ve tanımlarına yeni bir boyut getirmiştir. Bu insan dışı aktörlerin, başka bir deyişle bot hesapların müdahalesinin oluşturduğu bu kamu, şu an için hibrid ya da hibridleşmiş kamu şeklinde adlandırılabilir.

INTRODUCTION

The hashtag #metoo, which was heard by almost the whole world currently, came to the agenda by famous actress Alyssa Milano on October 15th, 2017. She posted the hashtag on her twitter account, claiming that the famous Hollywood producer Harvey Weinstein harassed her. The purpose of this case is to shed the light on the prevalence of sexual harassment and "give people a sense of the magnitude of the problem" (Figure 1). This hashtag, which was immediately shared by a huge mass on almost the entire world, and many people said they were actually victims of sexual harassment, was actually put forward by the American social activist Tarana Burke in 2006, more than a decade ago.

Tarana Burke, a victim of sexual harassment herself, knows that sexual harassment is always and everywhere and always kept secret by the victims. One day while talking to a friend, she reveals that she is a victim of sexual harassment too. Suddenly, she reluctantly tries to find the right words and thinks the most appropriate word with his empathy would be "me too". In fact, since that day Burke tries to convey and spread the message "You're not alone. This happened to me too" as much as possible anywhere in the world. Thus, she tries to support the victims of sexual abuse and help them to survive, especially in low income and socioeconomic areas.¹²

¹ <https://www.biography.com/people/tarana-burke>

² <https://www.chicagotribune.com/lifestyles/ct-me-too-campaign-origins-20171019-story.html>

In fact, the slogan and hashtag #metoo first put forward by Tarana Burke in 2006 and are being used to remind that the victims of sexual harassment and rape on earth are not alone and that this situation is very common. However, this movement, which is in its own state, is gaining a very extraordinary acceleration in September 2017. On September 16, the famous actress Alyssa Milano, using the "#metoo" hashtag, said she was also a victim of sexual harassment and called on other victims to spread the tweet in order to reveal the extent of the problem.

Shortly after the publication of this tweet, the hashtag "#metoo" starts to break records on all social media platforms. The next morning, for example, Milano's tweet reaches about 40,000 shares on Twitter.³ Facebook reports that posts about "me too" exceed 12 million within 24 hours⁴

Immediately thereafter, it is implicitly depicted that the responsible of this harassment is one of the most prominent and powerful Hollywood producers, Harvey Weinstein. However, this situation makes a great echo on social media in a short time. After that, around 30 famous actresses report that Harvey Weinstein allegedly harassed them in the past.⁵ It is of great importance that, in the face of the fact that this current movement has made such a big echo, of

³ <https://www.chicagotribune.com/lifestyles/stevens/ct-life-stevens-monday-me-too-mayim-bialik-1016-story.html>

⁴ <https://www.cbsnews.com/news/metoo-more-than-12-million-facebook-posts-comments-reactions-24-hours/reporting>.

⁵ <https://www.cbsnews.com/pictures/celebrities-slam-harvey-weinstein/>
<https://www.cbsnews.com/news/me-too-twitter-trend-sexual-assault-awareness-alyssa-milano/>

course, it is of great importance that even very well-known and powerful people, can actually be a victim of sexual harassment and that this situation is quite common even in the Hollywood world. Thus, in fact, the prevalence of sexual harassment is shed light on, and not only celebrities, but also ordinary people are encouraged to publicize their self-disclosure on their social media accounts. In this way, the number of shares is growing at a very fast pace as a snowball.



Figure 1. Alyssa Milano's tweet

However, the fact that it gains the momentum from the celebrities and movie stars adds a different nuance to the movement. This is the prevalence of cases of

sexual harassment in which individuals, especially women, are exposed in their workspaces, even in areas that are seen as highly professional.

Thus, the #metoo movement, has gained a different dimension, which emphasizes the harassment suffered by working women in particular, has exposed women in many professional fields, such as the media and fashion industry, churches, universities and other educational institutions and the military, to disclose sexual harassment incurred in the workplace, and that they themselves are victims of sexual harassment.

The Media & Fashion area is the first area to give momentum to the movement. In fact, the fact that the Hollywood stars and celebrities, which are actually seem to very strong figures with world-wide and wide admiring audiences, have been exposed to sexual harassment in the past, has been quite effective in the speed and size of this movement, because it has encouraged ordinary people to share this experience with the public.

However, the movement has also had an impact on other occupational fields. In the context of the music industry, for example, well-known musicians have stated that they are victims of sexual harassment.⁶

In addition, academia has been expressed as an area where sexual harassment cases are common and similar claims have been put forward by numerous

⁶ <https://www.billboard.com/articles/columns/pop/7998799/metoo-harrasment-lady-gaga-sheryl-crow-twitter-mor> A

academics.⁷ These examples can be extended to institutions such as politics, sports, the army and even the church.⁸

For example, the hashtag "#churchtoo" in connection with "#metoo", was created to call upon victims to share their experiences in order to shed light on the cases of sexual assault and rape in the church.⁹

Although it is criticized in many respects further, it is undeniable that the #metoo movement is a great watershed in increasing the visibility of sexual harassment and violation cases, which is actually a very common and ubiquitous, but still hard to overtly disclose due to still being a taboo.

Not only #metoo, but with other hashtags created with different nuances about the problem, it actually created a public discussion platform on the subject. In all these aspects, me too, which is seen as one of the movements of the century, is a big and very important example of hashtag activism.

2. LITERATURE REVIEW

The influence of social media cannot be ignored in the spread of the #metoo movement and its visibility and participation by a very large audience. This movement is further strengthened by social media as a platform where

⁷ <https://blogs.scientificamerican.com/voices/when-scientists-say-me-too/>

⁸ https://www.washingtonpost.com/news/powerpost/wp/2017/10/21/senators-say-metoo-mccaskill-others-share-their-stories-of-sexual-harassment/?utm_term=.58379a147e84

⁹ [Http://time.com/5034546/me-too-church-too-sexual-abuse/](http://time.com/5034546/me-too-church-too-sexual-abuse/)

individuals can share their individual experiences, express their ideas and actively participate in the movement. For example, according to Pew research¹⁰, about 65% of social media users in the United States said that they read content on Facebook about the disclosures of sexual harassment and violation. Until now, it has not been possible to know the extent of sexual harassment and violation cases, because it was not very easy to share these kinds of experiences by individuals, or they cannot have not been able to create a visibility even if they share it. However, the affordances of these platforms make a great contribution to the candidates who want to announce their voices through a hashtag, like Twitter.¹¹ This movement is not only valid on the basis of individuals, but it is also important in terms of embracing the movement by big companies.¹²

For this reason, it should be kept in mind that when the #metoo movement is evaluated, it is actually a movement that is initiated on social media and is mostly spreading on these platforms, so that these platforms cannot be considered independent of their affordances, constraints and their internal dynamics.

For a long time since its emergence, social media has been regarded by its nature as an emancipatory and democratizing field because it allows individuals to express themselves and participate in public discussions. (Jenkins, 2006,

¹⁰ <http://www.pewresearch.org/fact-tank/2018/10/11/how-social-media-users-have-discussed-sexual-harassment-since-metoo-went-viral/>

¹¹ <https://socialmediahq.com/the-metoo-movement-shows-the-power-of-social-media/>

¹² <https://www.dmnews.com/channel-marketing/social/article/13034768/how-social-media-forced-brands-to-respond-to-the-metoo-movement>

Zuckerman, 2014) However, it has been recently speculated that, internet in general, and social media in particular has huge authoritarian and mass surveillance functions with public manipulation tools and marketing purposes rather than emancipatory and democratizing roles (Morozov, 2011, Tüfekçi, 2014). While the role of internet and social network sites has been pondered on the democracy and freedom from varied perspectives among scholars (Loader & Mercea, 2011), different speculations about the existence and features of a new public notion emerging through the internet, especially social media platforms have come to the agenda. The term “affective public” is an example of these public notions transformed with advent of social media platforms (Papacharissi, and Oliveira, 2012). According to them, structures of feeling open up and sustain discursive spaces where stories can be told. Affective publics are networked publics mobilized and connected (or disconnected) through expressions of sentiment, as these expressions of sentiment materialize discursively through the medium of Twitter. Structures of feeling, the storytelling structures of feeling supported and sustained by spreadable technologies afford texture, tonality, discursivity, and narrative modality to networked and affective publics. While discussions on the different public definitions arise with technological advancements has been continuing, the presence of bots, which can be described as automatic software that simulates human behavior through social media, has brought a different dimension to these discussions. According to a study by the Pew Research Institute in 2018¹³, it was found that approximately 60% of the

¹³ <http://www.pewinternet.org/2018/04/09/bots-in-the-tweetsphere/>

content in social media was produced by bot accounts. Additionally, it is predicted that the activities of social networking bot accounts will increase at a faster pace in the future. In particular, recent analyzes reveal the impact of social media bot accounts in many areas. They direct and dominate the public discussion with automatic and predetermined content that they have created on this subject by their intervention on a topic popular in social media.¹⁴

Therefore, we should not overlook the existence and the role of bot accounts when we see this movement as a social media movement and a creation of a public to analyze the movement itself as whole, as well as the roles of different actors. From this perspective, the existence of bot accounts and their role in the discussion will be investigated in order to illuminate the characteristics and differences that emerge in the context of the #metoo debate and how it conforms to the definition of public.

To do this, first of all, we need to understand the structure of these bot accounts and their operations in more detail. Researching on how they were born and how they evolved over time will provide us with very useful information about the competencies of these accounts. In this way, we will be able to understand how

¹⁴ <https://www.bloomberg.com/news/articles/2018-05-21/twitter-bots-helped-trump-and-brexit-win-economic-study-says>
<https://www.cnet.com/news/twitter-bots-were-2-5-times-more-effective-than-humans-during-the-us-presidential-debate/>
<https://www.sciencenews.org/article/twitter-bots-fake-news-2016-election>
<https://www.forbes.com/sites/victoriaforster/2018/08/07/research-finds-bots-dominating-discussion-about-e-cigarettes-on-twitter/>

these accounts interact with people, and how they are involved in existing debates and the active roles they take in shaping them.

In short, Internet in general, and social networks in particular, have strongly linked people and enabled individuals to come together at an unprecedented rate throughout history. In our everyday lives, individuals do not communicate with each other as much as technological structures enable (interfaces, platforms, networks) which designed by someone else. In this general perspective, the study is based on the main assumption that Internet (both software and hardware) is a major instrument in shaping the public sphere, particularly in parallel with current research in political communication. In addition, not only through the Internet, but also in all cases where information generated by users is transferred between devices and converted by devices, the presence of different intermediaries within the Internet itself can be mentioned. What makes the functionality of the intermediary in this way is essentially what is called an algorithm. For this reason, many theorists argue that this is where algorithms themselves become an extension and expression of organizational structures and forms, since algorithms play a role in influencing social and social situations as well as people at least. (eg Beer, 2017; Gillespie, 2014; Pasquale, 2015) This means that the people we meet in cyberspace are now far more than who they are or what they claim because now these personalities are becoming more and more automatic and autonomous accounts from more real individuals (Howard et al 2018).

As the use of the Internet and social media becomes more and more prevalent, the concept of "bot" is becoming more and more popular. Although it is now associated with the internet and social media, the idea of the "bot" in history was born in the beginning of the 1950s, from Alan Turing's idea of creating an algorithm with the ability to communicate with a human being, on the basis of the question that whether or not computers can communicate just like human. The first bot made was Eliza (Neff & Nagy, 2016), imitating a therapist, programmed by Joseph Weizenbaum at the beginning of the 1960s. Briefly described as "automated software agents" (Geiger, 2014), the functions of the bots have evolved considerably since the 1980s. Today, bots function in many areas of our everyday life, from education to the service sector, from banking to online shopping.

Along with these developments, bots have now come to the point where they can be conceptualized as "social bots". According to Howard et al. (2016), the concept of bots has automatic softwares which enable them to create and share its own content and connect to real users, whereas the concept can be called as social bots refers to automated users who are equipped with the necessary software to enable the account to automatically interact with users without being managed by any person. These social bots, which have direct interaction with humans, generally maintain their presence in social networks by imitating real users. More importantly, social bots are not only imitating the users with many factors such as networking activities, spreading patterns and emotion

expressions, besides their content, but also try to manipulate and alter the behavior of real users in these social environments. (Ferrara et al., 2016).

In addition, the structure of bots has become increasingly sophisticated, especially over the last few years. For example, some social bots can search for information on the Internet, create their own fake profiles with the information they have acquired, and have become able to share the content and the material in a predetermined manner, spread over time by mimicking real users' social media usage and consumption habits and content sharing and activity patterns over time. In addition, social bots are able to interact and dialogue with people on much more complex topics than they have in the past, including entertaining conversations, commenting on people's posts and photos, and answering people's questions. In addition, they are trying to attract their attention in any social network by identifying who is more popular and influential and hoping to be considered by those people. In order to be able to include an existing social network, they are able to identify related keywords and search and compile related information from the internet to produce relevant and even interesting content. An improved version of these bots, clones the behaviors of real users, interacts with their friends and social network, and shares content in a similar and timely manner to that of the original user. With all this level of development, bots have become much more sophisticated than we had ever thought, becoming increasingly difficult to identify and act against, as well as the possible harmful potentials have increased steadily and have risen to dangerous levels (Ferrara et al., 2016).

The most important of these threats can be seen as political manipulation, especially at election times. Through Botnets, which can be defined as bot armies commanded by the center, manipulation and propaganda are carried out in a way that can change the election results by means such as discrediting some predetermined candidates, disseminating and spreading the rumors and fake news about them, while promoting and glorifying the others unrealistically. Therefore, these activities carried out by botnets have serious risks to damage democracy (for example, Hegelich & Janetzko, 2016, Schafer, Evert & Heinrich, 2017, Stukal et al., 2017, Ford, Dubois & Puschmann, 2016, Chamil and Buente, 2017).

However, political manipulation is not the only area which bot accounts are operationalized for predetermined aims and targets can be considered as harmful. The rumors and fake news created and disseminated quickly and effectively by bots can cause great damage to the financial world and stock markets. Especially, the rumors about some big companies caused big drops in company shares, and many companies were negatively affected due to the fake news and rumors created deliberately by bot accounts. However, the harms of bots are not limited with this. Perhaps most importantly, they use manipulation techniques to alter the perceptions of people on any subject. The discourses created by sophisticated bots, especially those are able to steal and mimic the identities of real users, cause indirect social and economic damages. These bots use identities they stole to influence people's perceptions on many issues such as expert findings, rating results, social movements, and therefore play an unprecedented and

unpredictable role on people's perception of reality by creating fake information and causing biased impression (Ferrara et al., 2016).

In the framework of the all explained above, the main theory of the research is that, bot accounts cannot be considered as simple software codes which enable to accomplish predetermined targets, rather they have an active and dynamic interaction and relationship with human and non-human actors in the social media ecosystem which they operate in. Due to the reciprocal nature of these interactions between bots and the other users, the results cannot be considered independently from the related context and all the dynamic factors influenced (Howard et. al, 2016, Guilbeault, 2016). At this point, the concept of "technological intermediation" of Floridi (2014) can be benefitted from. This conceptualization that Floridi reveals in order to describe the roles of technological constructions in their social system is shaped around three basic criteria; interactivity, adaptability and autonomy. Interactivity means that an interactive and dynamic interaction of the intermediary with the environment it is in, whereas adaptability means that relations are carried out at the optimal level according to this orientation, and autonomy refers to the ability to recreate the rules that can provide the necessary changes in behavior according to environmental conditions. The social bots to be investigated within the framework of this research provide both of these three characteristics. For this reason, bots can be thought as technological intermediaries in social media, capable of providing dynamic and harmonious interactions within this

environment, and capable of adapting their behavior in spite of possible changes in environmental conditions.

For all of these reasons, to detect the bots which play an active role on social media environments, to determine their roles on specific public discussions and the extent of their interactions between real users has vital importance to analyze public debates on social media which can be defined as today's public sphere in a more accurate and effective way.

3. THEORETICAL FRAMEWORK

3.1. Social Sharing of Emotions

To understand the #metoo phenomenon, we must first investigate the topic on an individual level. At the most individual level, the #metoo campaign can be regarded as a self-disclosure of the individual experiences of sexual violation and harassment which is essentially a taboo even today. To shed light on the functioning of this individual self-disclosure mechanism, it would be useful to be first benefited from Bernard Rime's "Social Sharing of Emotions" and "Emotional Climate" theories. According to Rime (2009) self-disclosure of emotions and experiences is based on the mechanism of social sharing of emotion. Although sharing the individual emotions and experiences varies according to relevant emotions, people, cultural and social dynamics, the necessity of sharing emotions and experience is valid for everyone in every kind of situation. People need to share especially their negative emotions and

experiences with others, especially when they feel intense emotions, which is actually the beginning of the self-disclosure mechanism. Although Rime's social sharing of emotion theory is very valuable and useful to comprehend the dynamics of sharing emotions on an individual level and for self-disclosure processes, this theory needs to be further expanded to a public level. At this point, first of all, it is very useful to understand the notion of "emotional climate" with the role of sharing emotions in society (Rime, 2007).

Rime is actually trying to clarify the notion of "emotional climate" by questioning the link between sharing interpersonal emotion and the collective level of a feeling. According to him, sharing emotions between individuals is bi-directional, because on the one hand, an emotion tends to be shared by the person who experienced it, while on the other hand, shared emotions cause an emotional arousal by the shared others. As a result, the sharing of emotion results in an emotional rise in both the feeling and the shared person, thanks to increased empathy, while reinforcing social ties. He argues that shared emotions created a chain reaction in a community and that an "emotional climate" was created as a result of that reaction. The first is directly related to the creation of this emotional climate, and the second is to provide the group with solidarity and cooperation, and the last is to create collective memory.

According to Rime "emotional climates reflect how individuals think the majority of others are feeling in a society's current situation" (2007, p.307). Therefore, the term emotional climate gain significance to understand societal

dynamics of shared emotions and experiences rather than an individual level. However, the creation of this emotional climate is based on objective facts, because when a collective emotional event occurs, this emotion spreads rapidly among people and plays a major role in the creation of an emotional climate. In this context, we can actually take advantage of the notion of "emotional climate" in explaining why a single woman's experience has created a worldwide movement.

According to Rime, emotions are not easily lost by the experienced person, and the more intense they live, the longer they are felt. In addition, it is not only felt by the person who is experiencing it, but also spreads beyond the person's social environment. "In sum, emotion sharing reveals that emotions expand widely both in time and in space. In other terms, decisions not only are anchored on social relationships" (2007, p.312). Although there is no direct social link between individuals at that level, this argument implies that emotional climate is experienced in a society like a network. Here, rather than social ties, it describes how emotions are echoed exocentric through a collective experience and feeling.

In other words, any collective event reflected in the media, for example, strengthens these feelings, when an emotional event is collectively experienced in a group, extends to an incredible level of spatial and temporal dimension (exocentric), and creates a connection even among people who do not necessarily know each other. From this perspective, these chained events create an emotional climate within the related community.

Therefore, as people share these common feelings, they actually create and strengthen their social memory as well as provide their presence and visibility as a group. In other words, Rime (2007) refers to the social emotional climates of the emotions that are felt on an individual basis, the formation, legitimacy and visibility of groups within society, as well as the contribution of the powerful mnemonic tool to social memory.

3.2. Intimate Publics

However, the movement cannot be explained limited to the individual level, because, this movement has gained a social dimension in a very short time, albeit a movement that initiates by sharing one's own experience. This sociality is, in fact, an intimate area, as it is linked to a common past and a feeling that is shared by people through similar experiences. The #metoo campaign is not just an expression of emotions or experiences that individuals have expressed to their relatives and their surroundings, it is therefore separated from Rime's theories. Here, through this hashtag, people on different platforms share their own special experiences with a greater extent, so this campaign gained a "public" dimension. Within this campaign, it is aimed that people who have not seen or been close for a long time or who have never known each other will also be aware of the existence of this experience. Therefore, the main motivation is slightly differentiated from the self-disclosure mechanism, which is only intended to be defined as the sharing of the person's individual experiences to his or her immediate social environment.

In the context of the #metoo campaign there is also an emphasis on a common and shared experience. The word "me too" inherently implies the experiences which is shared by the others as well. And while trying to raise a voice in some way, it also calls on those who are known or foreseen to have similar experiences to create an echo and to participate in this public. The purpose of expressing how common this experience is actually, and creating awareness by surprising others in this way, is to create a solidity by showing that those who live this experience are not alone.

Berlant (2008) notes that there is no definite distinction between the autobiographical/personal one and the general one based on her own example at the beginning of her study. According to her, in contemporary consumption society, "all sorts of narratives are read as autobiographies of collective experience. The personal is the general. Publics presume intimacy". Therefore, it can be implied that her aim is not only to deal with autobiography, because, according to her, personal is already public due to its echoes generated in a specific public sphere through the common and shared experiences. (Berlant, 2008, p.1)

According to Berlant (2008), what makes a public an intimate is the common historical experiences and emotional accumulation of these experiences, rather than the fact that individuals admit their autobiography in a community of strangers. In other words, she emphasizes the role and the significance of the historical background in the emergence of this experience rather than one's own

personal and intimate experience. This historical background is not only in the context of experience, it brings together a number of emotional states and emotional knowledge accumulated through these experiences. An intimate public is constituted due to individuals with similar emotional ties through the common historical backgrounds.

Berlant considers this intimate field to be an area in which an identity is constructed. In her study, she argues that, although in general the woman and their stories has been focused until now, the situation experienced by non-privileged individuals creates a space of empathy, creating a support mechanism between individuals who do not know each other, but have a common historical and emotional bond. According to her, these vulnerable individuals "at the same time they develop their own networks of sympathy and recognition that create alternative spaces of survival and solidarity" (Berlant, 2008, p.4)

At this point, the most important points to be mentioned are that people who are completely unfamiliar with each other should be literate into each other's feelings, and have common feelings, desires and pains arising from similar experiences. As mentioned before, it is a field of belonging created by the sense of partnership and the support it provides during the process of everyday life, during the survival of these individuals and during the struggle for life. In this way, the presence of this intimate field, and the awareness of this field's presence, provides confidence and comfort in relationships with the outside world.

It is impossible to comprehend this movement independently from the affordances and constraints of the digital platforms which mediate the communication between each other. In the age of social media spreading over the Internet and a wide range of uses, it is possible to talk about the existence of platforms where individuals can not only share their ideas, feelings and experiences, but also come together for a purpose. The #metoo movement is also an example of the fact that individuals who are quite independent from each other are connected to this subject by using the possibilities of the digital age and most importantly, an action is introduced through this link.

However, the digital age we experience should not be considered as limited by providing the connection of individuals only. From a material point of view, it is possible to conceive it as an ecology, because the internet and all of the platforms have their own certain affordances, constraints and modus operandis. Discussing and enlightening the intentional or unintentional phenomena resulting from the material elements of each platform is of vital importance in terms of understanding the dynamics of the topic.

We assume that publics are something entirely populated by humans and their interactive engagements, but what if this was not entirely true? Evidence shows that bots are just much part of the conversation as human users. Accordingly, one may argue that a theoretical framework which acknowledges both humans and non-humans needs to be applied to the #metoo phenomena. In order to achieve

this, the Actor Network Theory will be adopted as the main theoretical framework of this study.

3.3. Actor-Network Theory

Actor network theory (ANT), in its attempt to make sense of the social world, simply identifies everything as a network that is intertwined with each other, and in a process of change and transformation. This theory and methodological approach which has the aim to comprehend and define the social is distinguished in many respects from its ancestors. One of the founders of this theory, Callon (1986), Latour (2005) and Law (1986, 2007) first began to study the production process of scientific knowledge. According to them, focusing only to the actions of the scientist's in the production stage of a scientific knowledge will be reductionist. Instead, they argue that it is necessary to view the current situation in terms of all its dynamics and to see the finding as a result of the interaction with other factors, rather than focusing merely by the action of one or the other. For this reason, they prefer to see scientific studies as a dynamic network of interactions, rather than fixed, complete and already given. By seeing them as a dynamic network with many different institutions, organizations and interactions, Cressman (2009) claims that Actor Network Theory prefers to consider science and technology as in the making rather than as a fixed and already given.

3.3.1. Actor-Network

From this point of view, there are some basic principles and definitions on which the actor network theory is based. To better understand the theory, it is necessary to shed light on them. These terms must be explained firstly because they prefer to define social as a network of actors who interact with each other. For example, in the Latour's study (2005, 2017), it is argued that to understand the social, instead of large and global terms such as institute, organization, and nation, social and political terms should be looked at in more micro-scale and contextual dimensions and shed light on small-scale associations. In doing so, however, he warns that focusing on only humans and overlooking links between other people and non-human actors will be incomplete in terms of social meaning. Instead, he says that we must define all social life through networks between human and non-human. According to him, this is how we have achieved the "very essence" in of society and nature.

3.3.2. Network

All these conceptualizations so far, in fact, require a better explanation of the term network. In short, all dynamics in material and social life can be defined and explained in the context of heterogeneous networks because, all these networks are based on associations. Through these associations, which can be assigned to all human and non-human actors, heterogeneous networks are formed, which we can define everything through themselves. According to Cressman (2009), this has two main consequences; the social world is not merely

social ties, nor can it be fully ignored. These networks, which are comprised of people, economics, business and education, are heterogeneous. Secondly, in these networks, which consist of dynamic, heterogeneous and interrelated actors and associations, we cannot speak of a fixed, static, and premise, but a distinction, such as micro and macro, has lost importance.

Emphasizing that the relationship between natural and social science and the artefacts produced by the engineers cannot be ignored, ANT aims to develop a network-like ontology for the social factory. In this way, the actor looks at the network term to understand the network conceptualization and its ontology, and it is necessary to examine exactly what it stands for and what it contains.

In the context of ANT, it describes the properties of the networks. (Latour, 2017) First of all, there are no concepts such as proximity-distance in these networks. Rather, there are not such concepts as proximity to what needs to be addressed, because they assume that they are variable. According to him, since everything within this network is in fact composed of associations, the relative positions of the actors do not actually mean anything in reality as saying that "the notion of network helps us to lift the tyranny of geographers in defining space and offers us a notion which is neither social nor "real" space, but simply associations." (Latour, 2017, p.5).

Second, within these networks, it is not possible to make distinctions such as macros and micro, and that metaphors such as schools, institutes, families, and communities, which depict any scale are meaningless. There can only be used

the metaphor of “connection”. Because, according to him, these scales in reality are also fluxional and unnecessary to make sense of social dynamics. What needs to be emphasized rather than the scale, how the actors in these networks are connected with each other. Here, he emphasizes that a more qualitative distinction is meaningful. “The whole metaphor of scales going from the individual, to the nation state, through family, extended kin, groups, institutions etc. is replaced by a metaphor of connections. A network is never bigger than another one, it is simply longer or more intensely connected.” (Latour, 2017, p.5).

In addition, within a network, any notion that one not be superior to another. In the end, when we see everything as a network of dynamic interactions, the unique qualities that a notion or property possess are not meaningful but can be evaluated according only to the nature of the interaction with others. For this reason, we cannot talk about a situation where any notion alone and independent from others. “A network notion implies a deeply different social theory: it has no a priori order relation; it is not tied to the axiological myth of a top and of a bottom of society; it makes absolutely no assumption whether a specific locus” (Latour, 2017, p.5).

Finally, in the context of the network, Latour says that we cannot talk about any inside and outside situation, and a border separating inside and outside. According to ANT, the limit is actually the network itself, because it consists of all of the network as a variable and a dynamic connection. "Inside/outside: the notion of network allows us to get rid of a third spatial dimension after those of

far/close and big/small. A surface has an inside and an outside separated by a boundary. A network is all boundary without inside and outside." (Latour, 2017, p.6).

In summary, the network is not actually a "thing", only a record of the movements, according to ANT. Moreover, we cannot say precisely what is in this network, because it is expanding and growing in an ongoing circulation and flow. This is the reason of why we cannot make a distinction between "inside" and "outside". Of course, not only the term "network" is enough to explain all of the theoretical perspective, but we also need to talk about the term "actor". In order to define the actor network, as a hybrid notion, we must move away from the static and topological features and head towards the dynamic and ontological ones. "The new hybrid "actor-network" leads us away from mathematical properties into a world which has not yet be so neatly charted. To sketch these properties, we should now move on from static and topological properties to dynamic and ontological ones" (Latour, 2017, p.6).

3.3.3. Actor

In order for the actor network theory to be understood, Latour considers that the actor conceptualization should be explained, and explains what the actor term refers to under the ANT. First of all, he says that the actor doesn't actually point to a certain power as previously thought, and that it's wrong to perceive this as the person who holds this power, or who uses it for it. Since everything in the

network is fluctuant and transitive, consists of associations, all other dynamics like power cannot be considered as static and forever stable (Crossman, 2009).

Additionally, it is argued that the definition of the actor is not necessarily human, but that there may be any "thing" that has the resources to carry out an action. Here it can be understood that it does not distinguish between human and non-human. Also, the actor cannot be reduced to any model or to a list of certain competences. Because everything is contextual according to ANT, the actor is defined not only that as a human being who has the power to do a job, but a concept that makes a difference in the way it interacts, considering all the dynamics there. However, the difference here is not necessarily due to the specific qualities or competencies of the actor but is shaped by the contextual dynamics that exist.

Therefore, Latour claims that actors are not actually fixed entities, but rather we can talk about more dynamic and interchangeable flows in relation to each other as "actors are not conceived as fixed entities but as flows, as circulating objects, undergoing trials, and their stability, continuity, isotopies has to be obtained by other actions and other trials" (Latour, 2017, p.8).

Therefore, instead of determining in advance how an actor should act, or which associations are allowed or prioritized, he denies any assumption. According to him, the behavior of actors and associations in this network cannot be known and free. "Instead of constantly predicting how an actor should behave, and which association are allowed a priori, AT makes no assumption at all, and in order to

remain uncommitted needs to set its instrument by insisting on infinite pliability and absolute freedom." (Latour, 2017, p.9).

3.3.4. Non-human Agency

We have mentioned that ANT, in itself, actors do not distinguish between human and non-human and ANT inclines to give equal role to both of them. However, there is a need for more detailed information on the exact role and function of humans and nonhumans, especially in the context of the agency. Sayes (2014) meticulously interrogated what nonhuman agency means in the context of ANT, by benefitting from the existing literature. According to him, this nonhuman subject, which may be perceived as an umbrella term, has some limitations, however broad it may be. Therefore, it is examined under three separate titles to evaluate non-human agency in the context of ANT. First of all, he mentioned that nonhuman is an indispensable condition for any possible human community.

Many ANT theoreticians argue that especially artefacts and machines play an indispensable role in creating the social. It is absolutely necessary to establish ties with artefacts for "maintaining the solidity of human society" (Sayes, 2014, p.137).

The first case is that the nonhuman is a mediator, where it first deals with the difference between intermediary and mediator. According to him more than mediator intermediary. In fact, "intermediary" expresses the situation where an actor is located just by his position. In this case, it is possible to consider non-human as an intermediary, but Sayes argues that it would be incomplete, because

according to ANT, non-humans do not only exist in terms of location, but also have a place in the associations and interaction chain. Thus, they allow the whole to have more value than the sum of all its parts. For this reason, they cannot only be perceived as stationary objects, but they also have a role as a part of this interaction chain. And they have a leading role in changing the shape of relationships between people (Sayes, 2014).

Second, he emphasizes the fact that nonhumans actually carry moral and political associations. First of all, he benefited from the Latour's seatbelt example (1989, 1992) to explain how nonhumans definitely have moral and political associations. According to him, the necessity to use seatbelt carries both moral and political associations both when the car gives warning signs and also stop functioning.

Moreover, based on this example of seatbelt, nonhumans have the role to self-discipline of people. If we initiate the agency inquiry here, and define the agency as purposeful action, we can only evaluate it as a human attribute. But the main question here is whether the existence of nonhuman agency or they interact in the direction of purposeful action. Therefore, it is guaranteed that, nonhumans can be considered as lack of agency. However, it is not the consideration here that, nonhumans are unable to perform any purposeful action, therefore they cannot be considered as agents. The main consideration at this point is that people are responsible for choosing their own moral and political associations, and that is why this creates accountability. In other words, nonhumans also have inherent

moral and political associations, which may not have the ability to create a purposeful action by themselves, but the people have the ability to choose to any nonhuman, which ones they will interact with, and even how to use them. In this case, nonhumans do not have the opportunity to create any purposeful action, but because of their own moral and political tendencies and associations, they contribute to people's actions. "Thus, we should not be concerned with whether nonhumans are understood to possess the ability to make moral or immoral decisions – this is not suggested. Rather, what is elided and made impossible is the question of responsibility – of which individuals and groups should be held accountable for our moral and political associations." (Sayes, 2014, p.140).

In the last case, he regards nonhumans as a “gathering”. That's exactly why we cannot load a morality or politics on their own, so we can evaluate them in the context of their associations. This leads us to define them as gatherings within this chain of relations, not by themselves. "The relevant point for current purposes is that morality and politics should not be linked to nonhumans separated from all other actors, but to associations...This does not mean, to be sure, that nonhumans are divorced from the question of morality or politics. Rather, it means only that when one considers the relationship between a nonhuman and morality or politics, one must consider the associations of which it is a part." (Sayes, 2014, p.140).

It is precisely because of this contextuality, temporality and ontological conditions that underlie the notion of actor-network. We cannot evaluate all

actors- including nonhuman ones- outside this boundary. Instead, we can handle positions in networks that have been structured in different ways.

There are two important points, one is to be considered an action as an interaction, and another is to see nonhumans as part of this interaction. Therefore, a nonhuman is not fixed in the relationship with a certain actor. The only reason for this is not the context of time, but also the interaction with other actors. Therefore, we cannot add value and meaning to a nonhuman, regardless of its context, its status in the network, or its interaction with other actors. Ignoring all of these situations, an artefact does not just make sense as an “artefact”, no moral, political or otherwise. However, it will vary according to the relationship with other actors and the state of that relationship.

ANT is specifically emphasizing the term agency at that point. Here, it is breaking free from situations like free will, intentionality, but the purpose is not to shrink the term, as seen and criticized at first glance. Here, in fact, it describes a kind of action when defining the agency. While ANT describes the situation as something more, in fact, he argues that the standard measure for an agency ceases to be human, and it depends on the answers to the question of whether it actually makes a difference. If the actor's presence and action make any difference in that context, we can talk about an agency here. In this context, ANT is moving towards a different agency definition that will not exclude human agencies but slightly extend it. "Thus understood, ANT adopts a complicated but nonetheless minimal conception of agency. It is minimal because it catches every entity that

makes or promotes a difference in another entity or in a network. Latour (2005) maintains that one need only ask of an entity '[d]oes it make a difference in the course of some other agent's action or not? Is there some trial that allows someone to detect this difference?' If we can answer yes to these two questions, then we have an actor that is exercising agency – whether this actor is nonhuman or otherwise." (Sayes, 2014, p.141).

Here, the factor that gives a new dimension to the definition of public lies in the definition of this agency. As Guilbeault argues that "'bots are evolving and their most recent form, the social bot, has the capacity to enact systematic and measurable influence because of critical changes in its environment...While entirely new habitat, and social bots are among the new forms of agency that social media habitats grow, bot agency is the product of mutually transformative interactions among humans, bots, and their environment." (Guilbeault, 2016, p.5010-5011). Because according to ANT, the concept of agency becomes meaningful with the changes they make on the environment in which the agents are located, it will be plausible to mention about a new public definition which includes the bots as active agents when their intervention to a specific discussion is considered.

3.4. Networked Individualism and Networked Publics

Since Habermas (1989), within the framework of all social sciences, the concept of public and the public sphere have undergone very serious transformations. Beyond

the bourgeois public sphere of Jurgen Habermas, Nancy Fraser (1990) came up with a new public sphere understanding, who criticized him by bringing a feminist perspective to the concept of public sphere. Michael Warner (2002) argues that, there cannot be mentioned in a single homogeneous public, and the concept of public described should be understood as many independent and even opposing publics, by taking into account especially marginalized communities, put forward the term “Counter Public”.

Therefore, before discussing any public concept, it is necessary to state exactly what boundaries and definitions it is. In the context of the #metoo movement, this study is attempt to reveal the public concept within the intervention of bot accounts based on Barry Wellman's “Networked Individualism” and Danah Boyd's “Networked Public” theories.

Sociologist Barry Wellman (1979), focuses on patterns of social relations, rather than on any specific social group. According to him, all social relations is based on the network pattern. Wellman argues that in order to understand an individual, we need to examine his social relations, which can be explained by the notion of social network rather than by community. He therefore emphasizes the need for social network analysis to conceptualize the diffusion of ideas and knowledge.

In this way, in fact, it does not reject the concept of community, but according to him, understanding the community in which he is involved to understand an individual can be just the beginning step (Wellman, 1979).

His study “The Community Question” re-evaluates the concept of community discussed over a long time from the perspective of the social network concept. According to him, the notion of community still exists, but this concept has become more personal and less local (Wellman, 1979).

In addition, one of the most important contributions of Wellman is that social networks and social network analysis constitute a paradigm, not merely a method. According to him, social network analysis is not only a tool, but it also has generative role of social. The basic assumption of the theory is that it accepts the existence of specific patterns in establishing the relationship between individuals. According to him, relations between individuals are based on these specific patterns, independent of categorical classifications such as personality, gender or race. Of course, these personal and categorical factors play a role in the dynamics of relationships, but these factors are not always rigid and fixed, but rather different roles are assumed by context. Therefore, the term network is much more appropriate in this context, because the development of ideas is not spontaneous, which in fact requires the following of specific routes among specific people (Wellman & Milena, 1999).

However, the limits of the networks defined in this way are not clearly defined. For this reason, Wellman reveals the term egocentric network. He prefers personal network instead of personal community and according to him, although the limits of the personal network and the information flow here is not very precise, the term personal network is important in showing how individuals

respond in certain specific situations, and how they are organized in a more global context (Wellman, & Haythornthwaite, 2002).

According to Wellman, the development of information communication technology has made it possible to transform from a group-oriented relationship to a networked individualistic ones. In other words, he prefers to explain the relationship between individuals with a network metaphor instead of a group metaphor. According to him, in networked societies, borders are more volatile, interactions between individuals are more diverse and hierarchical structures are more complex, unlike in form of group-based relations (Wellman & Milena, 1999)

Thus, well before the spread of the Internet, Wellman introduced the term networked individualism. This term emphasizes the existence of connected individuals rather than the classical model, that assume hierarchical bureaucracies in social structures and tightly connects individuals within themselves (Wellman, & Haythornthwaite, 2002).

Danah Boyd (2010) coined with the term "networked publics" to describe the notion of public emerging through social media sites. According to her, the networked publics, of actually in many ways matches the public who have existed, including its functions. For example, this new public still allows people to come together for social, cultural and civic purposes, and enable the connection not only with close friends or families, but also with people who are beyond the reach of others.

However, there are some differences and new dynamics in networked publics. Considering the affordances and limitations of technology which provide this connection, all kinds of dynamics of this networked public in fact cannot be considered independently from dynamics as well as affordances and the limitations of the platform itself which mediates this interaction.

According to Boyd (2010), with the mediation of this technology, has changed the way people interact with each other. The traditional definition of the term public has changed through the intervention of these technologies, which enable people to come together and interact independently of time and space constraints, thus transforming the public perception. It is possible to see these network technologies as an architectural field because they have a large role in both the flow of the information and the interaction of people with each other, with the features as profile pages, friend lists and public communication features and with affordances as persistence, replicability, scalability and searchability.

This effect not only changes people's relationships with social media and their experience of acquiring information, but also influences the way they experience everyday life in a more comprehensive way. From this point of view, the existence of different forms of interaction and definition of the notion of “publics” can be mentioned which are derived from the affordances, constraints and idiosyncratic dynamics of a specific communication technology.

4. RESEARCH QUESTION

The study has two objectives. The first is to comprehend how the #metoo movement creates a public in the social media particularly in Twitter platform. In the scope of the research, the dynamics and roles of actors involved in the #metoo movement will be questioned to provide a comprehension about the modalities of this idiosyncratic public. The general questions to be answered in the study is how a public has been created in the context of the discussion, how this public fit into the previous definitions of public, and how this public can extend the previous definitions of the notion of public by considering the intervention of nonhuman actors of the movement.

In line with this general aim of the study, the main research focus can be generalized as to investigate the role of twitter bots in the spreading, directing and shaping of the #metoo movement. However, this general question can be divided into many sub-questions. In order to be able to perform this analysis, it is necessary to be able to detect these bot accounts by distinguishing them from real users. Therefore, the first sub-question is the identification of twitter bots within the #metoo movement. After determining the presence of these bots, more detailed analysis will be performed to reveal their roles through their volume of intervention. For this purpose, the number of bots, the amount of content they produce, the number of people they interact with, and the extent of their existence in the discussion will be primarily questioned.

While, answering to these questions will provide an overview of the existence and the general role of the bot accounts within the #metoo discussion, a content analysis is required to conceptualize their contribution to the discussion. Therefore, the content produced by these bots will be evaluated qualitatively and ideologically, to develop an understanding of the characteristics and dynamics of the public constituted by the participation of the bots. In short, when all these are formulated as sub-questions, the questions that are expected to be answered within the scope of the study are as follows;

- What is the density of the bots and the number of shares in #metoo movement?
- What is the extent of relation and proximity of the bot accounts with other actors?
- How is the interaction of bots with other users?
- What are the ideologies and the contents produced of the bots within #metoo movement?

Finally, network analysis will be conducted in the context of these sub-questions in the research to be carried out on the role of bots in this discussion and the way in which the discussion is directed.

5. METHODOLOGY

Within the scope of the study, both network analysis and content analysis of these accounts was used to understand how active the bot accounts were and how they

interacted with other users. Social network analysis focuses specifically on identifying and forecasting connections, relationships and influence among individuals as well as groups. It is mostly based on the visualization of the “who is following who?” graph that highlights the structure of the network’s relationships (Grandjean, 2016). The SNA approach has proven to be particularly popular within the realm of social media and even more so Twitter research, with much of the empirical research focusing on the networks and patterns of interaction that emerge by an analysis of specific hashtags in which politicians are just among many other actors (Burgess and Bruns, 2012; Larsson and Moe, 2011; Small, 2011). Numerous studies that specifically investigate the tweeting behavior of politicians are also based on social network analysis (Vergeer et al., 2013). Another use of social network analysis is concerned with measuring influence (Suh et. al, 2010; Subbian and Melville, 2011), particularly in political communication (Stieglitz and Dang-Xuan, 2013). It is also important to note that there also exists a massive body of literature on engagement and interaction among Twitter users including voters, politicians as well as candidates during various political election campaigns (Dang-Xuan et al., 2013; Freelon and Karpf, Jungherr, 2016; Jürgens and Jungherr, 2015; 2015; Sreekumar and Vadrevu, 2013; Song et al., 2014; Yardi and Boyd, 2010).

In order to observe the potential activities and changes here, the data collected over 12 weeks (18/10/17 – 09/01/18) after the #metoo movement has started was analyzed. To be able to catch the tweets related with the movement, the hashtag

#metoo was used. Therefore, all the tweets contain the hashtag #metoo were obtained.

First of all, most active users have been determined for each week using the DMI-TCAT¹⁵ tool, from tweets taken from the Twitter stream. The Twitter Capture and Analysis Tool (TCAT) platform allows for a data collection strategy based on hashtags/keywords and has a number in built features which allow for basic metric as well as statistical analysis (see Borra and Reider 2014).

Then, by looking at the 10 most active accounts for each week, a 3-step method was used to detect the bot's status. A total of 80 unique accounts were entered into the individual Botometer¹⁶ program which is developed by the Indiana University Network Science Institute (IUNI) and the Center for Complex Networks and Systems Research (CNetS). The list of accounts was then fed into BotoMeter, which is based on a machine learning algorithm trained to classify an account as bot or human based on tens of thousands of labeled examples (Varol et al., 2017)¹⁷

This program calculates the probability of a Twitter user being a bot by measuring it on some specified metrics. However, since the reliability of this

¹⁵ <https://wiki.digitalmethods.net/Dmi/ToolDmiTcat>

¹⁶ <https://botometer.iuni.iu.edu/#/>

¹⁷ When an account is checked by Botometer, your browser fetches its public profile and hundreds of its public tweets and mentions using the Twitter API. This data is passed to the Botometer API, which extracts about 1,200 features to characterize the account's profile, friends, social network structure, temporal activity patterns, language, and sentiment. Finally, the features are used by various machine learning models to compute the bot scores.

program is not 100%, as a second step, each account that was detected by this program as a bot was checked one by one manually. In order to do so, the basic criteria set by the Oxford Internet Institute¹⁸ for qualifying an account as a bot are accepted as the base. According to this approximation, it can be considered as an account bot with a total of more than 50 tweets in one day. At the same time, however, the details of an account's profile photo and the information in its profile give an indication of whether the account is a bot or not. Accordingly, anonymity, such as the absence of a profile photo of the account or the absence of any explanatory information about the account, increases the probability that the account is a bot. Therefore, in the second stage, these criteria were also taken into account. In the final stage, the nature of the tweets thrown on the account side is taken into account, and the high likelihood of a bot is taken into account if the tweets contains #metoo hashtag repetitively posted and are identical, especially if they contain news or advertising. As a result of the detection study carried out by using this three-step method, 28 of the 80 unique accounts were definitely bot. As it can be understood from this review, among the most active users, it is accepted that the %35 of the #metoo discussion is operated by bot accounts. This such a large number indicates the importance of a more detailed analysis on bot accounts in the discussion.

¹⁸ <https://www.oii.ox.ac.uk/blog/the-production-and-detection-of-bots/>

6. ANALYSIS

Predictably, the bots in the #metoo discussion in Twittersphere are not only among the most active users, but they are also increasing in intensity over the 12 weeks studied. In this way, they increasingly interact with people and play a greater role in this discussion. For example, as can be seen in the third figure (Figure 3), the number of bots in the first 6 of these 12 weeks varies between 3 and 5, but the following weeks, it is observed that 8 bot accounts are included in the discussion at the 11th week. However, the increasing prevalence of bot accounts in this discussion raises new questions about their roles, functions and attributes, and thus create a necessity for a more in-depth analysis.

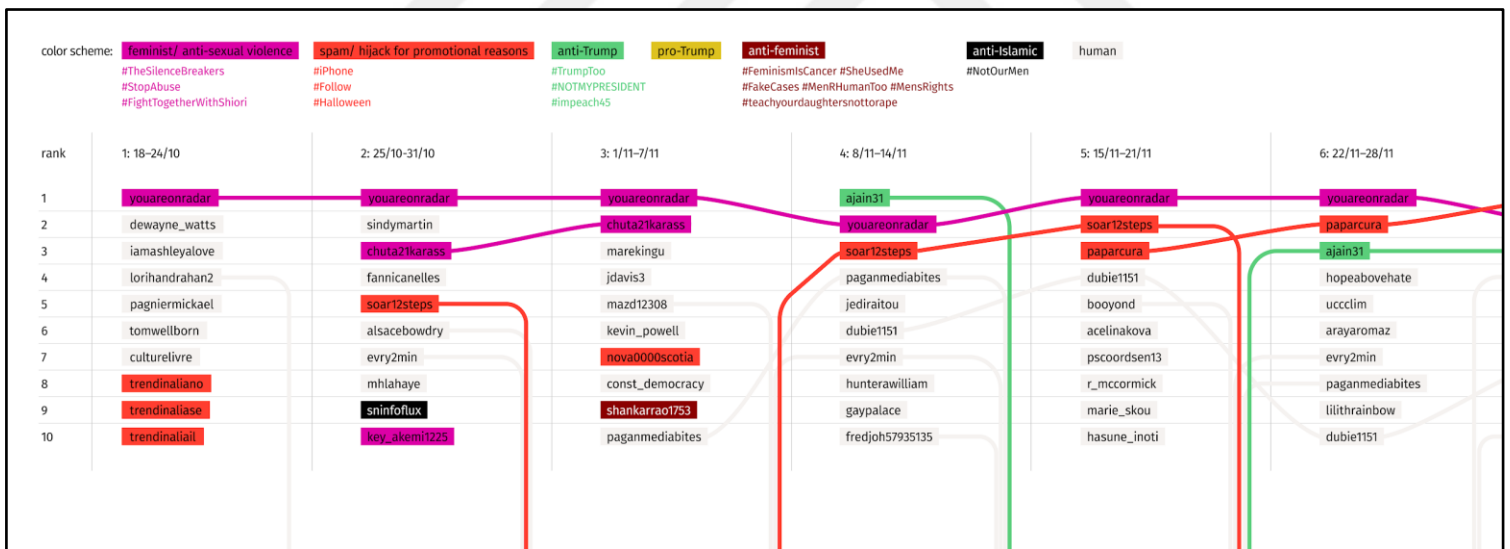


Figure 2. Categories of bots in the #MeToo discussion on Twitter – week 1 to 6.

What kind of bots are these? What kind of political, cultural or ideological tendencies do they follow? What are their main roles in the #metoo campaign?

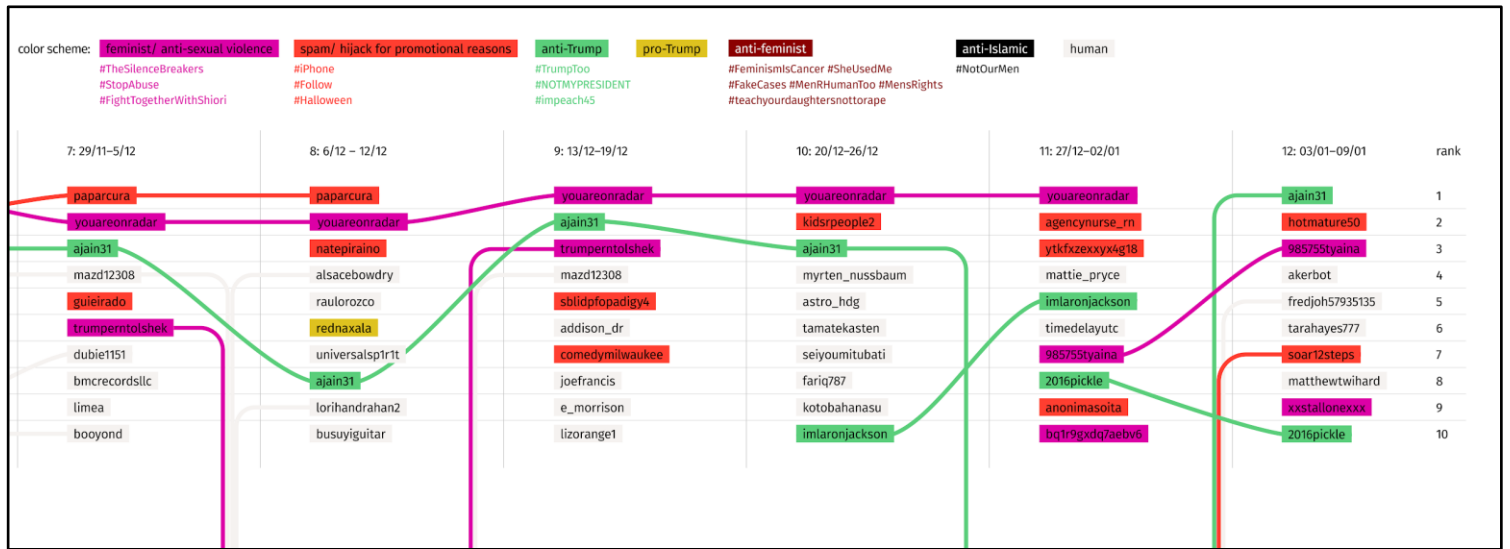


Figure 3. Categories of bots in the #MeToo discussion on Twitter – week 7 to 12.

Do they support this campaign, or are they opposed to this campaign? Answering these questions will help us to shed light on what kind of public has been constructed on Twitter through the interaction between the bot accounts and human users.

These questions are tried to be answered through qualitatively analysing these bots detected as described above, according to their individual accounts as well as their post, tweets and contents they shared.

In this way, when examined, the current bot accounts are divided into 6 main clusters. These are bots that support feminist (anti-sexual violent) ideology, spam bots, anti-trump and pro trump bots, anti feminist bots, and anti-islamic (xenophobic) bots. Spam bots are bots or botnets that post a large number of repetitive tweets automatically to spread a certain content for promotional reasons as advertisements. They have not any contextual relationship with the

content of the existing discussion. Therefore, it is not meaningful to analyze them due to the lack of any relationship with the discussion. However, other bot classes will be described further in detail as they are directly related with the #me too campaign

6.1. Feminist Bots

Among the bots within the #metoo discussion, the bots that produce discourses that are prone to feminist ideology are at the forefront in terms of number and activity intensity. In addition, the bots classified as feminist were analyzed because they were directly related to the context of the discussion.

6.1.1. Japanese Feminist Bots

The first example for these bots is the Japanese Feminist bots. In general, these bots, which stand out especially for their high-frequency tweets, are the bots that



Figure 4. Twitter account of @chuta21karass

share the tweets and hashtags that support Shiori Ito, a Tokyo based journalist who was sexually abused by another well-known journalist.

These bots often broadcast the news and interviews related to the Shiori Ito case, with hashtags such as #FightTogetherWithShiori, #JusticeForShiori and #TheSilenceBreakers. In this respect, the Japanese feminist bots are important in this case, particularly in terms of ensuring the visibility of cases for sexual harassment and rape and for establishing a support ground for those who experience this harassment. The most visible ones among these bots are @chuta21karass, @key_akemi1225, and @985755Tyaina, @bQ1r9Gxdq7AebV6.

@chuta21karass is the most active among the other Japanese feminist bots, with approximately 26.8k tweets and 30 follow-up accounts and 60 followers at the In

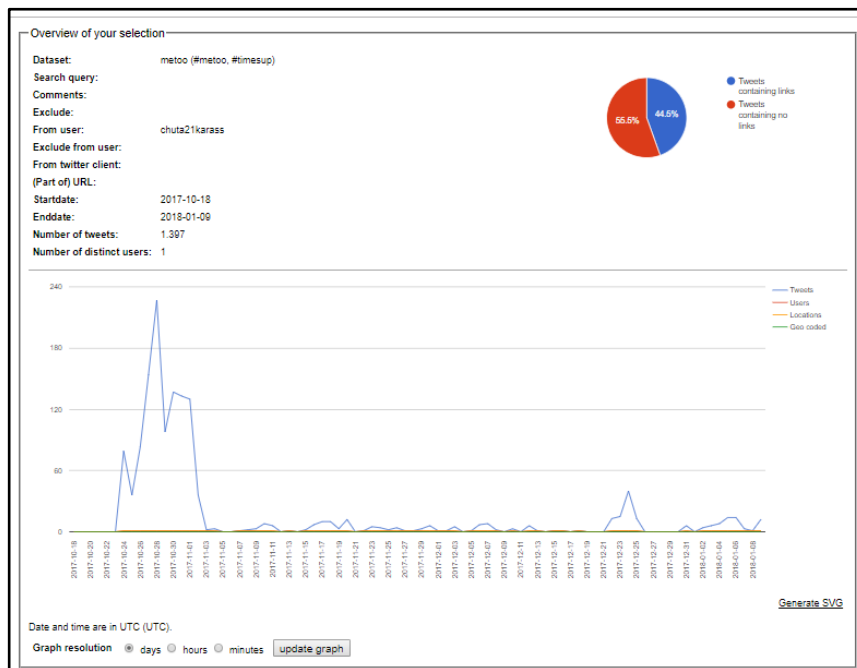


Figure 5. Tweet stats of @chuta21karass

the first 12 weeks of the analysis, the Twitter activity, which is spread over time, follows a fluctuating course as seen in the figure.

Interestingly, however, no matter how active this account regarding the number of tweets it produced, the following network map was generated with the data obtained by the DMI-TCAT tool when a "social graph by mentions" was made using the Gephi program. A mention network connects users if one has mentioned another in a tweet. A status reply network connects users if one has replied to the status update of another. Both networks are directed which means that the relationship between two nodes is non-reciprocal (Watts and Strogatz, 1998).

While generating this network, the color of the nodes is arranged according to the number of mentions and size of the nodes is calculated according to their degree. According to graph theory, degree distribution refers the number of connections of one node with the other nodes. The degree of a node will be higher while all the connections of this node with the other nodes increase (Albert and Barabási, 2002).

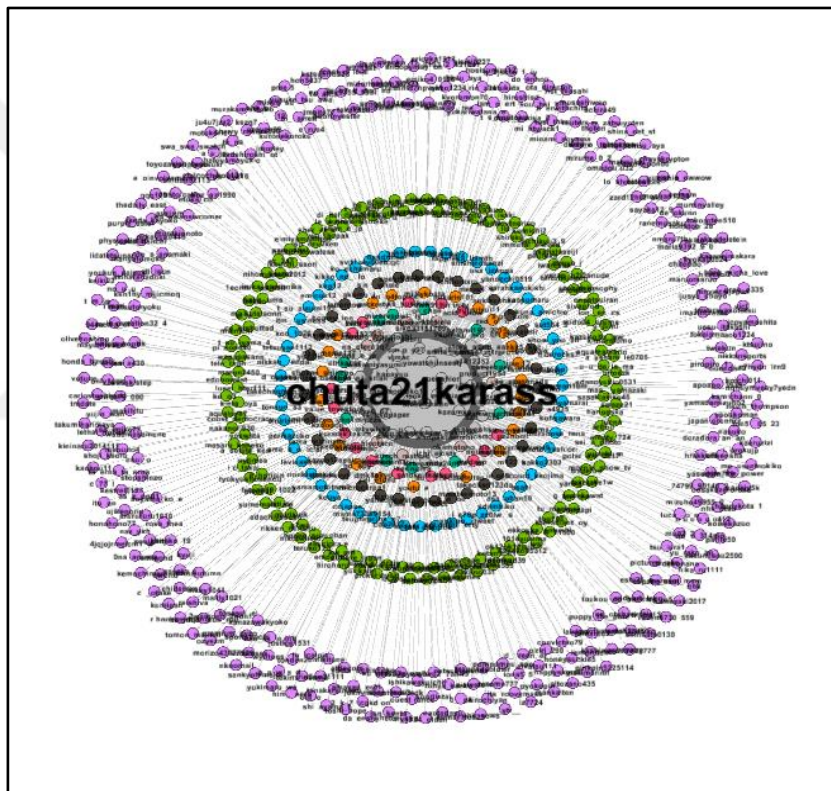


Figure 6. Co-hashtag graph of @chuta21karass

3 communities appear when modularity is calculated and colored according to this class. Node sizes were calculated according to their degree.

As can be seen from these graphs, the involvement of these four Japanese feminist bots has made both the mention and the co-hashtag charts more complex. However, the important point here is that the bot @chuta21karass interacts highly with all the other bots while the others are located separately.

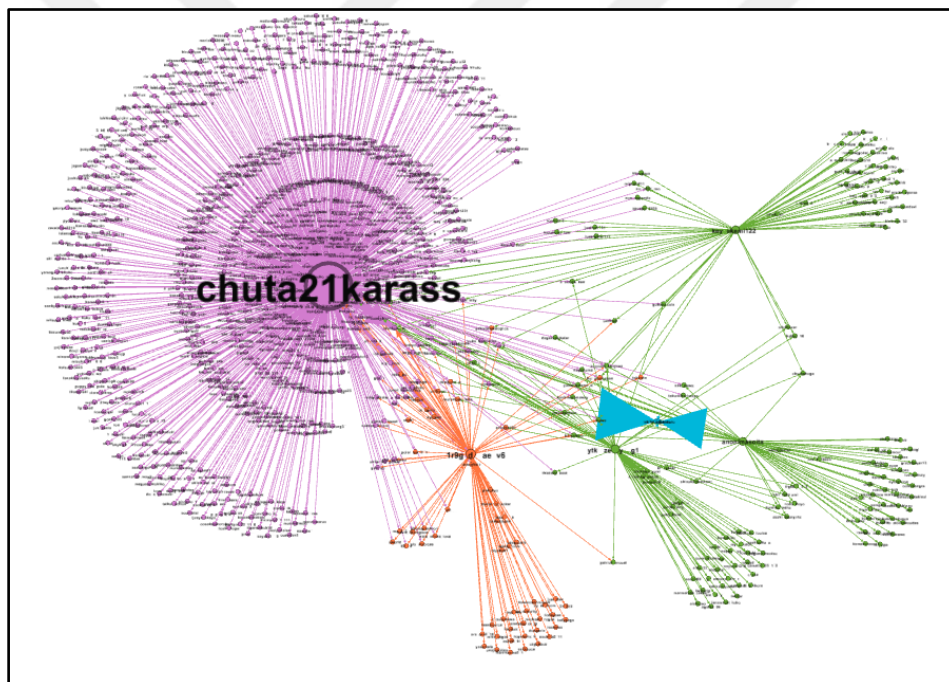


Figure 10. Interaction graph of feminist bots

6.1.2. @YouAreOnRadar



Figure 10. Twitter account of @youareonradar

Among all the bots detected, one of the most active and most stable one was @YouAreOnRadar. During the 12 weeks analyzed, a total of 35,699 tweets were posted and the number of tweets posted per day was around 600. On the profile page of this bot it is stated that this bot is based in India and supports a campaign against abusers through disclosing them overtly on Twitter with the hashtag #AbuseFreeIndia. When the account is reviewed, it is seen that there are calls to explicitly disclose the abusers by using some generic expressions as "You have been caught abusing on Twitter...", "You are encouraging hatred by abusing...",

"Profile added in list of harassers...", "This person is a serial online abuser...". In all these tweets a link followed these generic expressions, to depict the so-called abusers' Twitter accounts. Although the aim underlying this bot is not clearly stated on the account itself, it can be implied that the main aim of this campaign is trying to make abusers uncomfortable and humiliated by the society through exposing their abusive behavior.

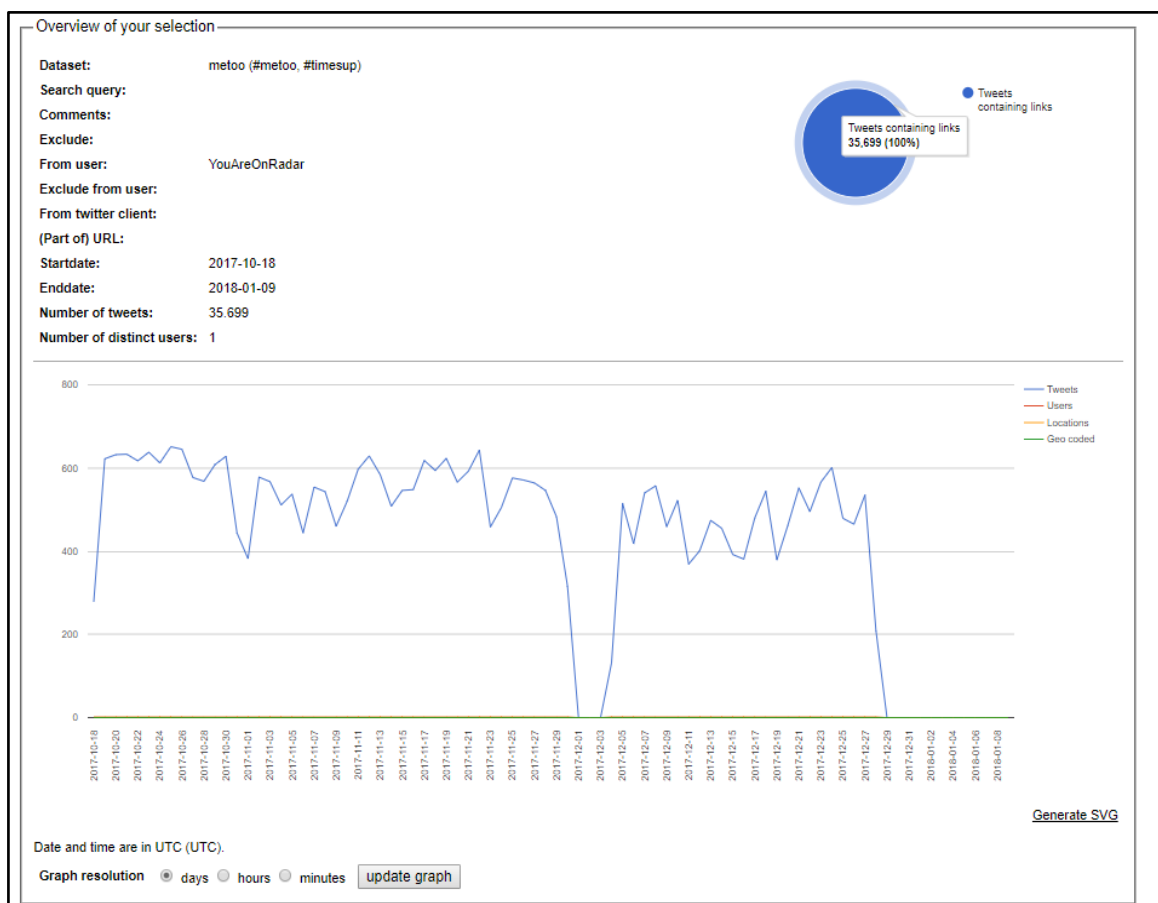


Figure 11. Tweet stats of @youareonradar

Tweets on this account include a single co-hashtag with #metoo as #AbuseFreeIndia. When the data of all users using #AbuseFreeIndia hashtag is obtained the following network is generated. In this case, it can be claimed that are real users who use the same hashtag as well.

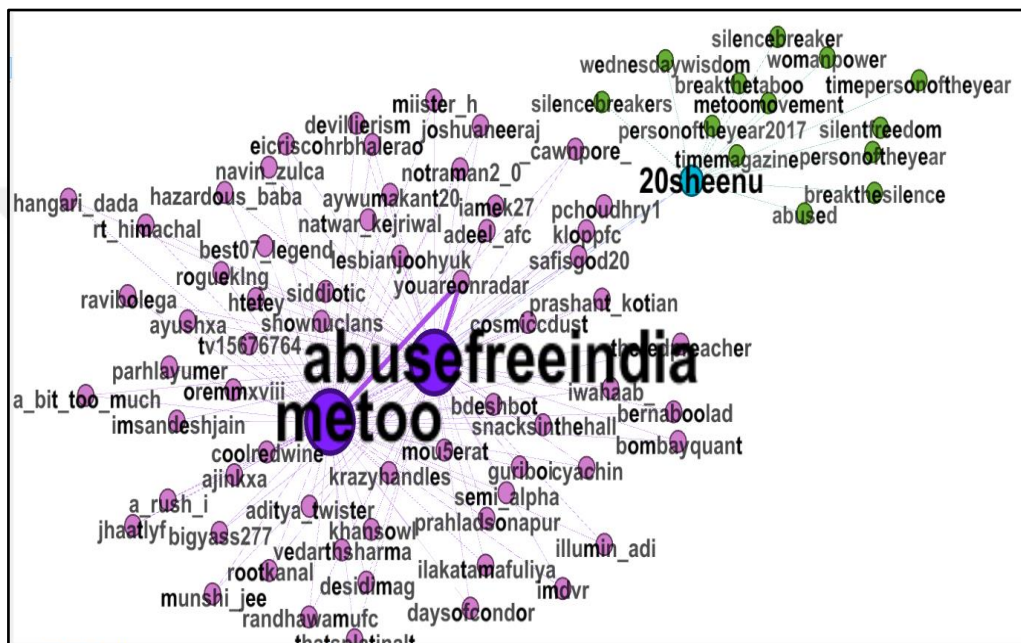


Figure 12. Co-hashtag graph of #abusefreeindia

To create this network, bipartite hashtag- user graph is generated by using DMI-TCAT tool. Bipartite graphs measure engagement of a user with a particular hashtag. As such, they tend to contain both direct and undirected relationships as they usually combine two discrete categories of actors (Scott, 2017). The greater the user engagement with a hashtag, the stronger the relationship (weight) between the two nodes on the network. Node colors are set according to modularity class, and node sizes adjusted according to the degree of each

individual node. The Force-Atlas 2 layout algorithm (Jacomy et al., 2014) was first used for the layout of the network, then label adjust was applied to ensure better visibility. As can be seen from the map, there are 4 separate communities within the network. These are mainly, #metoo and #abusefreeindia hashtags and the other users who mention these hashtags, as well as, the user @20sheenu, and the other hashtags which this user interacted with.

The nodes #metoo and the #abusefreeindia are seen as the largest in the network as can be predicted, because of their degrees. The bot @youareonradar has an intense relationship between these hashtags which can be understood from the thickness of the edge between these nodes. However, the user @20sheenu also interacted with the #abusefreeindia and #metoo hashtags, but the connection to other hashtags related to the #metoo campaign distanced it somewhere from the center of the discussion. When this network map is examined in general, the result that can be conceived in the context of @youareonradar bot account is that the hashtag #abusefreeindia which is used very intensively by this bot, is actually used by other users and even interacts with other hashtags related to me too campaign. From this view, the fact that the bot @youareonradar does not interact directly with any real user, such as mention or retweet, however it can be inferred that, it has a significant role to in the context of the discussion, because of the influence of this hashtag among the general discussion.

6.1.3. @TrumpernTolshek

It is a bot account named @TrumpernTolshek, which has an extraordinary feature among the bots that are known as the feminist supporting the #metoo campaign, and especially follows a radical feminist agenda. This account generated more than 600 Tweets during the ninth week of the 12-week process. These tweets usually contain the similar message. When the tweets are reviewed, it often includes “FIGHT ON! >WOMEN with 51% POLITICAL CLOUT must claim GENDER EQUITY POWER SHARING ... POLITICS & PUBLIC AFFAIRS! MEN as PREDATORS exploiting MILLIONS of WOMEN & GIRLS ...POLITICS & NO MORE SEXISM !!” These statements are generally followed by the hashtag #MaleRottenApples, which refers to a feminist online database that lists movies related with film producers and directors who have



Figure 13. Twitter account of @TrumhernTolshek

been suspected of a sexual misconduct. While the existence of a radical feminist view of this account appears to be undeniable, its political background and the reality of its support for #metoo remains uncertain. As a result, it can also be implied that this bot is in fact a troll which is trying to damage the #metoo campaign, with the aim of evoking strong and emotional reactions to the campaign.

6.2. Anti Feminist Bots



Figure 11. Twitter account and post examples of @Shankarrao1753

In the period analyzed, some of the detected bots are attracted by sudden anti - feminist discourses. Although these bots are a minority among the most active users, they are particularly worthy of scrutiny. One example of this is an account called @Shankarrao1753. This account is especially manifested with hateful

woman using man through these false or fake cases. In this way, this account explicitly accuses all women of being liars and expresses the fact that men are the victims under fake rape claims, creating a strong hate speech towards women

6.3. Xenophobic Bots

The @sninfoflux account, which is currently being deleted, but is clearly marked by discourses of xenophobia during the collection of data, calls the debate on sexual harassment and violence as an "Islamic problem". Tweets of this account contains, the hashtag #NotOurMen to denounce Muslim men as the alleged main offenders.

6.4. Political Bots

During the 12 weeks analyzed, it has been observed that the bots in Twitter #metoo are becoming more politicized, and the discourses on current politics are produced more and more. Here, it can be said that the role of US President Trump, who has been accused of sexual harassment in the past, is also influential in the context of the #metoo campaign. In this way, in the context of this discussion, bot accounts are increasingly politicized.

The most active auto-user @ Ajain31, now suspended on Twitter, was replicated in 359 messages at the 4th week, celebrating the first anniversary of Trump's elections against the US President. This bot, which was involved in the anti-Trump movement through hashtags like #HoldTrumpAccountable, was among the most active users for 12 weeks. This bot not only produced discourses on the

"#metoo campaign, but also linked the discussion to the "BlackLivesMatter" movement, another discussion topic on the agenda. In the following network

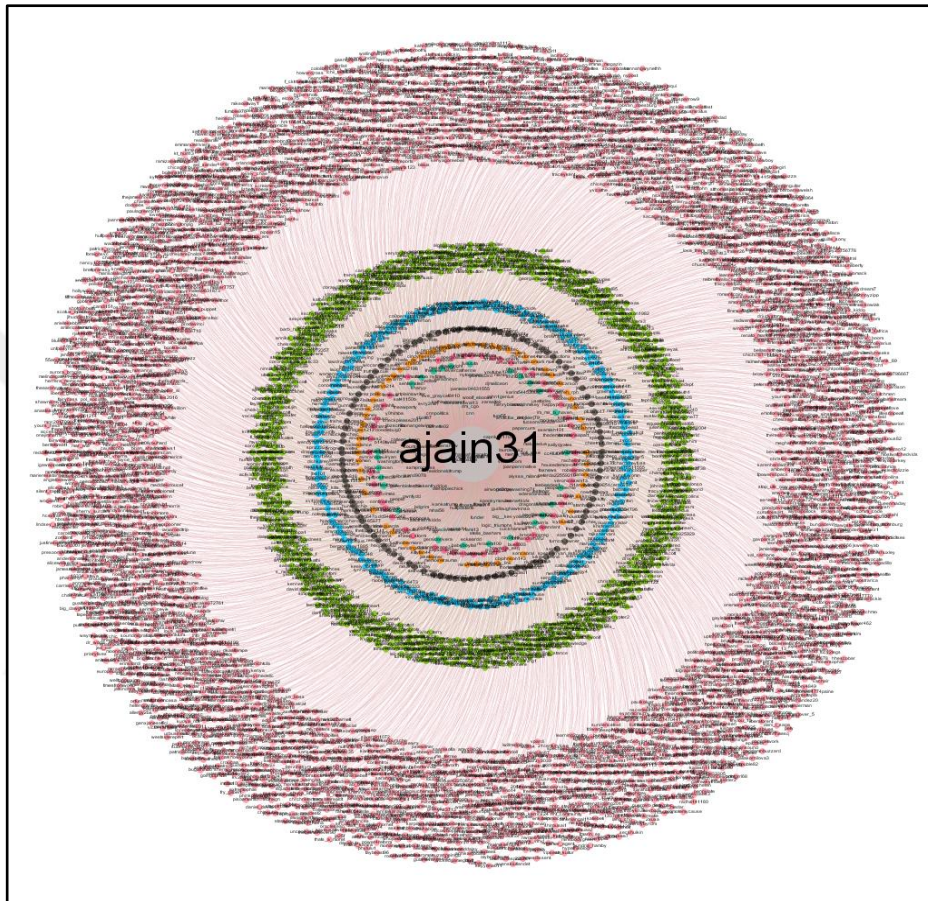


Figure 13. Interaction graph of @ajain31

map, this bot can be seen actively in terms of spreading its own ideology by mentioning other real users very actively. On the other hand, in the context of the "me too" discussion, bots that support Trump are less active.

According to the results of the analysis, the activities and roles of bot accounts in the #metoo discussion can be classified according to different metrics and variables. First of all, according to the analysis, during the first 12 weeks of the discussion, it was understood that 35% of the most active users were created by

bot accounts using the detection method performed among the most active users. However, in addition to the number of bot accounts, activities have been observed to be very intensive. For example, the feminist bot from @chuta21karass tweet when producing approximately 1400 during this time, @youareontheradar by producing 35,700 total of 600 tweets per day tweets post during this period. These figures, compared to the number of tweets taken by any human user, the tweets produced by bot accounts are quite high in terms of all tweets.

In addition to this, bot accounts not only generate tweets and content in the context of this discussion. At the same time, when the mentioning and retweet activities are analyzed, the intensity of their interaction with other accounts actually stands out. For example, when you examine the network map based on the mention traffic performed by the @ajain31 account, this high mention density can be observed more easily. In addition, these accounts are not limited to activities.

The existence and intensity of other co-hashtags that are produced by accounts and connected in some way to #metoo, the main hashtag of the movement, also shed light on the role of these accounts in the discussion. As observed in the analysis, the #abusefreeindia hashtag used by @youareonradar was actually used extensively by other users, so this co hashtag, through this bot, participated in the discussion. In the same way, the hashtags used by anti-feminist bot @Shankarrao1753 have brought quite a sound in the #metoo discussion, and

have been used and spread by real users, thus reinforcing the role of this bot in the discussion. Therefore, the role of bot accounts in the #metoo discussion can easily be inferred from these variables, both expressed numerically and visualized through network maps.

Through these analyses, it can be said that bots, using different affordances and features provided by platform itself or benefiting different characteristics, actively exist in the discussion, even by activating other different hashtags, and sometimes dominating the discussion.

As mentioned in the aim of the study, it is accepted that variables such as tweet count and interaction density will provide significant data on the role of bot accounts in the discussion. In addition, according to the analysis results, when these variables are evaluated, bot accounts have been proven to have a strong role and guiding effect in this discussion.

However, as a further step, qualitative analysis of the content produced by these accounts has been undertaken. And as mentioned, these accounts are divided into six distinct classes according to their ideological tendencies. These classes differ in their position as feminist, anti-feminist, in their position as opposed to each other, or in the way that they can include statements of political actors relatively independent of the discussion, or in the way they contain religious beliefs.

From this point of view, this public, which was created through the participation of these bots, contains the characteristics of “intimate” public. While the content produced by these accounts has strong ideological tendencies in terms of their

discourse, on the one hand, it spreads personal expressions which can be considered as intimate and they create an emotional reaction on a wide range of people through mediation.

However, when it comes to the fact that these accounts are actually non-human, automated software, there is no difference between the actors who are human in terms of the impact and role of the discussion, as the actor network theory, which is mentioned in the theory section. This theory adopts the concept of agency based on the results to assess for the presence of the change. Therefore, according to actor network theory, it can be said that the bot accounts also have strong agency.

When evaluated in this way, it is assumed that both human and non-human actors have an equal role, and that these non-human actors produce intimate tweets in certain ideological frameworks to create an emotional reaction on a large group, we can derive a different conceptualization of the emerging hybrid public which is different than already existed. Through this conceptualization, we can talk about a new public that produces content much faster and more intensively than humans, emitting intimate and ideological tweets, just like human users and thanks to their high level of sophistication levels, are very difficult to differentiate from human users.

7. CONCLUSION

The #metoo campaign, which has been a huge success when it appeared with the Hollywood scandal, and has remained popular since then, forms the basis of the study. This campaign can be evaluated and analyzed in many different ways. Because it contains many different aspects, approaches and discussions, these elements are increasing day by day. Because sexual violence cannot be reduced to a gender, nor can it be just a certain profession or a socioeconomic group. In this way, in many ways, the #metoo debate creates a fertile field with many problems in daily life practices. It can be said that this debate has created a certain public. However, with the emergence and widespread use of internet and social media platforms, public definitions have been transformed. Many theorists are speculating about new public definitions that emerge through technological mediation. In our technological age, it can be defined as automatic software agents, bots can interact with people through the internet and can even participate in the discussions on social media. The existence and impact of these bots have been observed in many areas from politics to economy and have recently been investigated. However, there is no information about the existence and roles of bots in a discussion such as #metoo, and there is no speculation about a new public definition that emerged with the intervention of these bots.

Therefore, in the context of this study, it has been questioned whether it is possible to mention a new public definition in which these automated software agents also participate in the discussion and interact with other users. In order to

be able to make this interrogation, we first try to understand the #metoo phenomenon, from which we have been fed by two theories to share the emotions and experiences that make up an area of interaction and a community.

The first is Bernard Rime's theory of "Social Sharing of Emotions", which is related to the creation of an emotional climate that emerges through a feeling and experience, and increasingly, like a network, in the form of chain reactions. The second is Laurent Berlant's "Intimate Public" theory, which mentions an "Intimate Public" as a result of sharing personal experiences.

These theories, however, are not sufficient to explain this new public, which emerged through #metoo hashtag. Because, as previously mentioned, those who play an active role in the #metoo debate are not just human actors. Although bot accounts are not human users, they can participate in the discussion. For this reason, Actor-Network theory, which does not distinguish between human and non-human actors, was adopted as the theoretical framework of its study. By adopting theories of Barry Wellman's networked individualism and Danah Boyd's networked public, this study aimed to reveal the roles of bot accounts in this public which has been created with the hashtag #metoo.

In the context of this theoretical framework, among the approximately 2 million tweets obtained from the Twitter API using the DMI-TCAT tool, the most active accounts were selected for each week during the 12-week period during which this data was collected. Using a 3-step method among these selected accounts, the bot in this discussion attempted to be detected. In the big picture,

approximately 35% of these accounts were generated by bot accounts. When close reading is done, it is seen that there are 6 different classes which develop quite different ideologies from each other. Then, through the network analysis, the density and roles of these bot accounts in the discussion were examined.

As a result of all these analyzes; not only in terms of the quantity and content densities they produce, but also in terms of the size of the interaction they enter with other users and the variety of discourses they produce. Since these bots are sophisticated technological software, it is very difficult to be noticed by human users. For this reason, it is seen that the #metoo discussion on the Twitter platform includes not only human users but also automatic software agents that follow different strategies and have different behaviors. In this way, this public, in which non-human actors take part in and even shape or manipulate the debate, has now brought a new dimension to the public concepts and definitions put forward so far. This public which is constituted by the intervention of these non-human actors, in other words bot accounts, can be called a hybrid public.

8. DISCUSSION

8.1. Limitations of the research

Although the study is attempted to be quite comprehensive, it has limitations in some respects. Nevertheless, these limitations enable new opportunities for further research.

First of all, the main limitation of the study is in the data collection process. Although the campaign #metoo has been very popular and has been in existence for a very long time, the tweets that have been produced within a period of 12 weeks from the first appearance of the campaign have been examined. The main corpus obtained during this period is approximately 2 million tweets. Although this number constitutes a sufficient sample group to analyze the overall #metoo discussion, of course it does not include all the tweets posted under the #metoo discussion. In addition, another limitation of data collection is that the DMI-TCAT tool used is running through the Twitter Stream API. The Stream API allows, as allowed by the Twitter platform, to obtain only a fraction of the tweets posted at any time. Again here, the data obtained because of the fidelity is suitable for analysis, but still does not include all the tweets posted from that time interval.

Another limitation of the study is that only the English tweets can be analyzed from among the #metoo discussion. Although the #metoo campaign has already started in English, and then the majority of the actual Tweets in this campaign are in English, the tweets in other languages are not included in the data set. For example, while the Japan feminist bots were analyzed, tweets in Japanese were excluded from the analysis.

Another limitation of the study is that adopting a manual method for detecting accounts bot accounts. As described in methodology section, a three-step method for the detection has been developed. First, the most active accounts were selected for each week, which were manually uploaded to the Botometer website.

Since the reliability of this application is not hundred percent, these bots were examined in terms of both profile features and tweet statistics as number of tweets posted per day. Therefore, a qualitative method was used as well. However, during that time, it is possible that some bot accounts were excluded from the analysis due to the constraints of the method. For example, a bot account is not among the most active users may not be included in the study. Nonetheless, this is quite unlikely, as bots are very active in nature because they produce a great deal of content at a great speed and participate actively in the discussion. Therefore, it does not pose any problems for the realization of the study.

The last limitation is by the nature of the subject of the study. As pointed out in theoretical framework, a system created by human and non-human actors refers to a temporal, dynamic and contextual ecosystem, including dynamic interactions between all actors. For this reason, the outputs of the study may be shaped according to both temporality, context and discussion. In the context of the study, the roles of bot accounts in the discussion and the question of the public nature generated by these human and non-human actors are only addressed in the context of #metoo discussion. The results of a study that will be carried out in the context of another time frame or another discussion topic may differ slightly from the one obtained.

8.2. Recommendations for further research

There are some opportunities for the studies to be carried out on this subject in order to eliminate the limitations that the study already has, and to bring new

dimensions to the existing study. Further research can be done in the two areas presently foreseen in order to develop and advance the study.

The first is to improve the methodology of the study. The 3-stage and semi-manual bot detection process can be made more sophisticated with a bot detection software to be developed. In this way, instead of just calculating the bots selected from the most active users, all the bots in the #metoo discussion can be obtained. Especially in today's reality, when twitter bots are becoming more complex, and it becomes increasingly difficult to separate the bots from human users, a software to be developed to detect these boots more effectively will be very useful for further research.

Secondly, the study was only conducting in the English language. However, it is possible to derive a geographical and linguistic dimension to the research by analyzing the bot accounts in different languages. It is possible that the results of the study to be performed in the context of other countries can be different. In fact, the results of these studies through different languages and nations also provide an opportunity for cross national and cross-cultural analysis.

Bibliography

- Albert, R., & Barabási, A., L. (2002). Statistical mechanics of complex networks. *Review of Modern Physics*. 74(47).
- Beer D. (2017). The social power of algorithms. *Information, Communication & Society*, 20:1, 1-13, doi: 10.1080/1369118X.2016.1216147
- Berlant, L. (2008). *The female complaint: The unfinished business of sentimentality in American culture*. Durham and London: Duke University Press.
- Borra, E. & Rieder, B. (2014). Programmed Method: Developing a Toolset for Capturing and Analyzing Tweets. *Aslib Proceedings*. 66. doi:10.1108/AJIM-09-2013-0094.
- Boyd, D. (2010). Social network sites as networked publics: Affordances, dynamics, and implications. In Z. Papacharissi (Ed.), *A networked self: Identity, community, and culture on social network sites* (pp. 39–58). New York, NY: Routledge. Retrieved from <http://www.danah.org/papers/2010/SNSasNetworkedPublics.pdf>
- Bruns, A. & Burgess, J. (2011). The use of Twitter hashtags in the formation of ad hoc publics. Proceedings of the 6th European Consortium for Political Research (ECPR) General Conference (August).
- Callon M. (1986). Some elements of a sociology of translation: domestication of the scallops and the fishermen of St. Brieuc Bay. In: Law J, editor.

Power, Action, and Belief: A New Sociology of Knowledge? London: Routledge; 1986. p. 196-223.

Chamil R., Buente W. (2017) Incidental effects of automated retweeting: An exploratory network perspective on bot activity during Sri Lanka's presidential election in 2015. *Bulletin of Science, Technology & Society* 2017, 37(1) 57 –65, 0270467617736219

<https://doi.org/10.1177/0270467617736219>

Cressman, D. (2009). A Brief Overview of Actor-Network Theory: Punctualization, Heterogeneous Engineering & Translation.

Dang-Xuan, L. & Stieglitz, S. & Wladarsch, J. & Neuberger, C. (2013). An Investigation of Influentials and the Role of Sentiment in Political Communication on Twitter during Election Periods. *Information Communication and Society*. 16. 795-825.

doi:10.1080/1369118X.2013.783608.

Ferrara E, Varol O, Davis C, Menczer F, Flammini A. (2016). The rise of social bots. *Communications of the ACM*, 59(7). doi:10.1145/2818717

Floridi, L. (2014). Artificial agents and their moral nature. In P. Kroes & P. P. Verbeek (Eds.), *The moral status of technical artifacts* (pp. 185–212).

Dordrecht, The Netherlands: Springer Science and Business Media.

doi:10.1007/978-94-007-7914-3_11

- Ford, H., Dubois, E. & Puschmann, C. (2016) Keeping Ottawa honest—One tweet at a time? Politicians, journalists, wikipedians, and their twitter bots. *International Journal of Communication*, 10(2016), 4891–4914
- Fraser, N. (1990). Rethinking the public sphere: A contribution to the critique of actually existing democracy. *Social Text*, 25 (26): 56–80,
- Freelon, D. & Karpf, D. (2014). Of big birds and bayonets: hybrid Twitter interactivity in the 2012 Presidential debates. *Information, Communication & Society*. 18. 390-406.
doi:10.1080/1369118X.2014.952659.
- Geiger S. (2014) Bots, bespoke, code and the materiality of software platforms, *Information, Communication & Society*. 17:3, 342-356,
doi:10.1080/1369118X.2013.873069
- Gillespie T. (2014) The relevance of algorithms. In: Gillespie T, Boczkowski P and Foot K (eds) *Media Technologies*. Cambridge, MA: MIT Press, pp. 167–194
- Grandjean, M. (2016). A social network analysis of Twitter: Mapping the digital humanities community, *Cogent Arts & Humanities*. 3: 1171458
- Guilbeault, D. (2016) Growing bot security: An ecological view of bot agency, *International Journal of Communication*. 10(2016), 5003–5021

Habermas, J. (1989). *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*, Thomas Burger, Cambridge Massachusetts: The MIT Press, p. 30, ISBN 978-0-262-58108-0

Heglich S., Janetzko D. (2016) Are social bots on Twitter political actors? Empirical evidence from Ukrainian social botnet. In: *Proceeding of the Tenth International AAAI Conference on Web and Social Media*. Palo Alto, CA: The AAAI Press, 2016, pp. 579–582.

Howard P., Woolley S. & Calo R. (2018) Algorithms, bots, and political communication in the US 2016 election: The challenge of automated political communication for election law and administration, *Journal of Information Technology & Politics*. doi: 10.1080/19331681.2018.1448735

Jacomy, M., Venturini, T., Heymann, S., Bastian, M. (2014). ForceAtlas2, a Continuous Graph Layout Algorithm for Handy Network Visualization Designed for the Gephi Software. *PLoS ONE* 9(6): e98679. <https://doi.org/10.1371/journal.pone.0098679>

Jenkins, H. (2006) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. John D. and Catherine T. MacArthur Foundation, Chicago, 5-7, 19-20, 3-4

Jungherr, A. (2016). Four Functions of Digital Tools in Election Campaigns: The German Case. *The International Journal of Press/Politics*. 21. doi:10.1177/1940161216642597.

Jürgens, P. & Jungherr, A. (2015). The Use of Twitter during the 2009 German National Election. *German Politics*. 24. 469-490. doi:10.1080/09644008.2015.1116522.

Latour, B. (1992) Where are the Missing Masses? The Sociology of a Few Mundane Artifacts. In Bijker & Law (eds.) *Shaping Technology/Building Society: Studies in Sociotechnical Change*. Cambridge: MIT Press.

Larsson, A. O. (2011). 'Extended infomercials' or 'Politics 2.0'? A study of Swedish political party Websites before, during and after the 2010 election. *First Monday*, 16(4). Retrieved from <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/rt/printerFriendly/3456/2858>

Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network Theory*. New York: Oxford University Press.

Latour, B. (2017). On Actor-Network Theory. A Few Clarifications, Plus More Than a Few Complications. *Philosophical Literary Journal Logos*. 27. 173-197. doi:10.22394/0869-5377-2017-1-173-197.

- Law, J. (1986) On Methods of Long-Distance Control: Vessels, Navigation and the Portuguese Route to India. In Law J, editor. *Power, Action and Belief: A New Sociology of Knowledge?* London: Routledge; p. 234-63.
- Law, J. (2008). Actor-network theory and material semiotics. In: Turner, Bryan S. ed. *The New Blackwell Companion to Social Theory*, 3rd Edition. Oxford: Blackwell, pp. 141–158.
- Loader, B. & Mercea, D. (2011) Networking democracy?. *Information, Communication & Society*, 14:6, 757-769, doi:10.1080/1369118X.2011.592648
- Melville, P. & Subbian, K. & Lawrence, R. & Meliksetian, E. & Perlich, C. (2010). A Predictive Perspective on Measures of Influence in Networks.
- Morozov, E. (2011). *The net delusion: The dark side of Internet freedom*. New York, NY: Public Affairs
- Neff G, Nagy P. (2016) Talking to bots: symbiotic agency and the case of Tay, *International Journal of Communication* 10(2016), 4915–4931
- Newmann, M., & Girwan, M. (2004). Finding and evaluating community structure in networks. *Physical Review*. 69(2). doi:10.1103/PhysRevE.69.026113
- Papacharissi, Zizi, and Maria De Fatima Oliveira. 2012. “Affective News and Networked Publics: The Rhythms of News Storytelling on #Egypt.” *Journal of Communication* 62 (2): 266–82.

Pasquale, F. (2015). *The black Box society: The secret algorithms that control money and information*. Cambridge, MA: Harvard University Press.

Rimé, B. (2007) The social sharing of emotion as an interface between individual and collective processes in the construction of emotional climates. *Journal of Social Issues*. 63. 307 - 322. doi:10.1111/j.1540-4560.2007.00510.x.

Rimé, B. (2009) Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review*, 1(1), 60–85

Sayes, E. (2013) Actor-Network theory and methodology: Just what does it mean to say that nonhumans have agency?. *Social Studies of Science*. 44. 134-149. doi:10.1177/0306312713511867.

Schäfer, F., Evert, S., Heinrich, P. (2017) Japan's 2014 general election: Political bots, right-wing internet activism, and prime minister Shinzo Abe's hidden nationalist agenda. *Big Data*, Volume 5 Number 4, 2017, doi:10.1089/big.2017.0049

Scott, J. (2017). *Social network analysis*, 4th edn, Sage, London.

Small, T. A. (2010) 'Canadian politics in 140 characters: party politics in the Twitterverse', *Canadian Parliamentary Review*, Fall, pp. 39–45.

Song, H. & Zmyslinski-Seelig, A. & Kim, J. & Drent, A. & Victor, A. &

Omori, K. & Allen, M. (2014). Does Facebook make you lonely?: A

meta analysis. *Computers in Human Behavior*. 36. 446–452.

doi:0.1016/j.chb.2014.04.011.

Sreekumar, T.T. & Vadrevu, S. (2013). Subpolitics and Democracy: The Role of New Media in the 2011 General Elections in Singapore. *Science Technology & Society*. 18. 231-249. doi:10.1177/0971721813489458.

Stieglitz, S. & Dang-Xuan, L.. (2013). Emotions and Information Diffusion in Social Media — Sentiment of Microblogs and Sharing Behavior. *Journal of Management Information Systems*. 29. 217-248.

doi:10.2753/MIS0742-1222290408.

Stukal, D., Sanovich, S., Bonneau, R., Tucker, J. (2017) Detecting Bots on Russian Political Twitter, *Big Data*, 5(4). DOI: 10.1089/big.2017.0038

Suh, B. & Hong, L. & Pirolli, P. & Chi, E. (2010). Want to be Retweeted? Large Scale Analytics on Factors Impacting Retweet in Twitter Network. *IEEE*. 177-184. 10.1109/SocialCom.2010.33.

Tufekci, Z. (2014). Engineering the public: Big data, surveillance and computational politics. *First Monday*, 19(7). doi:10.5210/fm.v19i7.4901

Vergeer, M. & Hermans, L. & Sams, S. (2013). Online Social Networks and Micro-Blogging in Political Campaigning: The Exploration of a New Campaign Tool and a New Campaign Style. *Party Politics*. 19. 477-501. 10.1177/1354068811407580.

- Yardi, S. & Boyd, D. (2010). Dynamic Debates: An Analysis of Group Polarization Over Time on Twitter. *Bulletin of Science, Technology & Society*. 30. 316-327. 10.1177/0270467610380011.
- Watts, D. J. & Strogatz, S. H. (1998). Collective dynamics of 'small-world' networks. *Nature*, 393, 440--442. doi: 10.1038/30918
- Wellman, B. (1979). The community question: The intimate networks of east yorkers. *American Journal of Sociology*, 84(5), 1201–1233.
- Wellman, B., & Milena G. (1999). Virtual Communities as Communities: Net Surfers Don't Ride Alone. In *Communities in Cyberspace*, ed. Marc A. Smith and Peter Kollock, 167–94. London: Routledge.
- Wellman, B., & Haythornthwaite, C. (2002). (Eds.), *The Internet in everyday life*. Oxford: Blackwell.
- Zuckerman, E. (2014) New Media, New Civics?, *Policy & Internet* 6 (2): 151–68.