# Social distancing close together: the rhizomatic role of WhatsApp in communities – a proposed research framework

## Johannes C. Cronjé

Cape Peninsula University of Technology,
51 Paradise Road, Fernwood, Newlands,
Cape Town, 7700, South Africa
Email: Johannes.cronje@gmail.com

**Abstract:** As covid-19 hits its peak, people who are not in close physical proximity but who do communicate regularly on social platforms such as WhatsApp groups often claim to feel a sense of closeness to others. This paper will consider the features and functioning for WhatsApp groups in terms of Preece's (2000) characteristics of a virtual community: people, purpose, politics and computer systems, and filter them through Deleuze and Guattari's (1987) six principles of the rhizome: connectedness, heterogeneity, multiplicity, asignifying rupture, cartography and decalcomania to see the relationship between the principles of the rhizome and the sense of closeness in a virtual community. Finally, a six by four matrix is proposed for the analysis of various aspects of virtual communities.

**Keywords:** physical distancing; social closeness; rhizome theory; virtual community; WhatsApp.

**Biographical notes:** Johannes C. Cronjé is a Professor of Instructional Technology and Dean of the Faculty of Informatics and Design at the Cape Peninsula University of Technology. He holds a DLitt, MEd (cum laude) and a Higher Education Diploma from the University of Pretoria. He has been a Visiting Scholar or Visiting Professor at the Universities of Bergen, Norway; KU Leuven, Belgium; Joensuu, Finland; Addis Ababa, Ethiopia; KNUST, Guana; Sudan University of Science and Technology and others. He has supervised or co-supervised 65 doctoral and 75 master's students; and has published 64 papers in academic journals.

## 1　Introduction

Through its 'groups' function the mobile platform WhatsApp has redefined the concept of a community and blurred the borders between physical and virtual communities. As a result of its ubiquitous nature it keeps loved ones together, arranges parties and functions, creates alerts, calls them off, starts civil protests, opposes civil protests and, quite possibly even runs countries. Its low cost makes it available to almost everyone and as

such acts as a leveller. This paper is written in the midst of the world-wide covid-19 lockdown where in an attempt to reduce the impact of the virus people are deliberately isolating themselves physically from one another, yet there is anecdotal evidence of people feeling 'closer than ever' to other people, some with whom they may never have been in physical contact. We examine the relationship between physical and virtual communities in the context of the group function of the popular social communication tool, WhatsApp. It is argued that rhizome theory offers an appropriate lens for analysing the fractal nature of the dynamics between physical and virtual communities particularly at a time of physical isolation. Deleuze and Guattari (1987) identify six principles that are flattening the traditional tree structures of society. These are connectedness, heterogeneity, asignifying rupture, cartography and decalcomania. These will be discussed in detail later.

This paper will use Deleuze and Guattari's (1987) rhizome theory as a tool for classifying various uses of WhatsApp in communities. I will then filter these through Preece's (2000) four components of online communities to develop a research framework for understanding the dynamics between physical and virtual contact in a technology-rich environment. Two questions drive this study:

> "What are the characteristics of WhatsApp groups in terms of people, purpose, politics, and computer systems?"

> "How do the principles of the rhizome contribute to closeness in a virtual community?"

## 2    Theoretical underpinnings

In considering virtual communities I will re-visit Rheingold's classic definition: "virtual communities are social aggregations that emerge from the net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" [Rheingold, (1993), p.5]. Of course when Rheingold penned that definition we were not yet carrying cyberspace in our pockets. Preece (2000) identifies four components that are required for the community to exist: people – that communicate and interact socially with each other, a shared purpose – the reason for the community to exist, politics – to guide behaviour and computer systems – that support and mediate social interaction. For the purposes of this paper we will look at the people who are communicating, we will consider the type of communication and social interaction, we will determine the shared purpose or reason for communities. We also look at the politics – the rules and social hierarchies that form and guide behaviour, and we will consider related computer systems, limited not only to devices, but also to ancillary programmes or social media sites.

In describing the nature of society in a digital age Deleuze and Guattari (1987) argue that society is being transformed into *a thousand plateaus* where the flat network has replaced the traditional branching tree hierarchy. We have moved away from a rooted structure to a rhizome where an intricate network of rhizomes feed their plants. We see a fractal of endlessly repeating, but constantly unique patterns that display six principles: connectedness, heterogeneity, multiplicity, asignifying rupture, cartography and decalcomania. Because of technology, not just people and places, but also things and thoughts are all connected into one large network. The ubiquity of connection means

things that are connected, are by definition, different. It also means that things or concepts can be defined in terms of how they differ from other things or concepts. Multiplicity recognises connection in that it holds that the multiple is the unit. For any element there may be a multiplicity of interpretations or explanations that are dependent on the situation and this multiplicity must be recognised. Asignifying rupture means that, should an element be torn in half, the two units may grow individually in the same way as a ginger plant when divided. It will produce offspring from each of the cuttings. Cartography calls for the development of a unique map rather than a tracing of someone else's map. Decalcomania refers to the endlessly repeating patterns that can be developed when the same decal is repeated constantly. Although they may be made up of identical components, every pattern is different. This paper will consider the extent to which these principles can be found in WhatsApp groups.

## 3    What we know about WhatsApp communities

Technology has radically changed the way in which we communicate. This literature survey will investigate the dynamic between WhatsApp and community. An online community contains six elements: "commitment; connection to others; reciprocity; interaction; agency and consequences" [Hammond, (2017), p.118]. da Silva Braga (2016, p.68) presents an ethnographic case demonstrating how WhatsApp can enable all six these elements in a city space where residents "joined an online group on WhatsApp, and used the application to mobilize themselves, including attending events around the city, such as private parties, concerts, soccer matches and visits to the São Cristóvão Fair… [and] identity is enhanced as ties are strengthened." The literature is now filtered through Preece's (2000) four components: people, purpose, politics, and computer systems in order to answer the first question:

> "What are the characteristics of WhatsApp groups in terms of people, purpose, politics, and computer systems?"

### 3.1    People

The boundaries between real and virtual environments are blurred when "WhatsApp is used by our participants as a key component (in) their way of dwelling with others" [O'Hara et al., (2014), p.1142]. They argue that WhatsApp is situated "within the ebb and flow of lives lived together, within the web of other connections, both real and virtual" [O'Hara et al., (2014), p.1142].

   In a detailed statistical analysis it was found that "different genders and age demographics had significantly different usage habits in almost all message and group attributes" [Rosenfeld et al., (2018), p.24]. More specifically, in other research "WhatsApp accounted for 19.83% (= 32.11 min) of all smartphone behavior (compare: Facebook only 9.38% = 15.19 min). The mean of general daily smartphone usage was 161.95 min" [Montag et al., (2015), p.4]. Females used it longer than males, younger people used it more than older and extraverts were more likely to use it than introverts. By contrast the more conscientious people used it less [Montag et al., (2015), p.4]. Moderating variables in virtual communities include gender, age and level of education (Talukder and Quazi, 2017).

Moodley (2019, p.1) takes a more conceptual position when she shows that that "the effective use of an online social media network to support a virtual community of practice is dependent on the participants' awareness of the context within which the community exists and the willingness of the participants to accept differing views and opinions." The context to which Moodley refers, leads a discussion of the purpose of the community.

### 3.2   Purpose

Kurniasih and Riyadhsyah (2017) indicate that people join a group to receive and give information, and build a network. Because WhatsApp is cheap and runs across all mobile platforms it has become ubiquitous. It is used as an 'all-in-one' mobile communication tool (Ahad and Lim, 2014). Koomson (2019, p.75) points out that "apart from using their mobile phones to make and receive calls, texting using WhatsApp messenger was the activity they often engaged in with their mobile phones."

Undergraduate students indicated that, over and above everyday communications, they used it for discussing and sharing study information. On the downside WhatsApp tended to disrupt their studies in two ways, firstly by creating an urgency to reply immediately and secondly by spreading disinformation (Ahad and Lim, 2014). Nevertheless, students were positive about the potential inclusion of it in their studies (Gasaymeh, 2017).

The professional use of WhatsApp is not limited to education. Much is also written about its use in health practice. Medical emergency teams, for instance, found it useful during clinical practice, with information giving being the most important reason for use. WhatsApp was therefore described to be foundational to patient management through mobile health technology (Ganasegeran et al., 2017).

Mars and Scott (2016) point out that professional WhatsApp groups tend to form spontaneously, and in that way create issues of confidentiality, data security, storage, record keeping and reporting. They conclude that guidelines are required to regulate the use of WhatsApp for medical purposes. The mention of rules and regulations point to Preece's (2000) category of politics.

### 3.3   Politics

There is mounting evidence that WhatsApp groups work like any other group, driven by factors "including trust, altruism, reciprocity and various other social factors" [Fauzi, (2019), p.368]. Carey and Meyer (2016) point out that a sense of virtual community leads to increased trust and that the management of online forums is essential for building trust. In less restricted communities they found lower levels of trust. The development of trust depends on an attitude to exchange, which means that social media should exhibit stronger collaboration-oriented functionalities (Cabitza et al., 2016), and "for the success of a social network, its users must adopt specific behaviours and, to ensure that they do, the application of persuasive strategies becomes indispensable" [Ruas et al., (2017), p.404]. These specific behaviours begin when participants can become a part of a group either by voluntarily following a joining link, or by being added by an administrator. Group interaction can include exchange, competition, cooperation, conflict, and coercion (Kurniasih and Riyadhsyah, 2017).

Kizel (2019), in research conducted with young people, recognised the dialogical language in conversations in virtual space. They found that, as in physical groups, their participants recognised the insider-outsider I – thou relationships that occurred in this realm. A study on family conflict on WhatsApp concludes that smartphone-based conflict is a legitimate field of study in human discourse (García-Gómez, 2018). Power relationships are called into the discussion when it is reported that with 97% of Israeli youth being on WhatsApp, 30% have reported some form of cyberbullying (Aizenkot and Kashy-Rosenbaum, 2019). On the other hand it was found that in non-democratic countries "[t]he use of social media also has a positive impact on transformational leadership, collaboration, knowledge sharing and team-work but negatively on transparency which increases organisational stress" [Makvand and Fernández Alarcón, (2017), p.343].

Koomson (2019, p.78) asserts that that the successful implementation of WhatsApp requires "intentional designs and step-by-step approaches to teach both the faculty and the students how to use the application to achieve the utmost outcomes." Finally, Bouter et al. (2020) provide a set of guidelines for the use of WhatsApp groups, specifically as far as the responsibilities and liabilities of the group moderator are concerned.

### 3.4   Computer systems

For the purpose of this paper Preece's (2000) concept of computer systems will be expanded to include mobile devices as well as networked and cloud-based and systems. According to Rosenfeld et al. (2018, p.2) "internet social networks have become a ubiquitous application allowing people to easily share text, pictures, and audio and video files. Popular networks include WhatsApp, Facebook, Reddit and LinkedIn." In terms of device ownership 87% of participants of a study in Ghana indicated their willingness to purchase devices if it were to improve their results (Koomson, 2019). In terms of software students called for having mobile course materials such as lecture notes, practice quizzes, videos, and PowerPoints.

The relatively low cost of network switching technology has meant that there is a multitude of options to choose from. The determining factors for influencing the choice of network are content quality and system quality (French et al., 2016).

It is also possible to develop algorithms that predict group behaviour "including the likelihood a given group would have relatively more file attachments, if a group would contain a larger number of participants, a higher frequency of activity, quicker response times and shorter messages" [Rosenfeld et al., (2018), p.24].

It is clear that because of its high level of network stability and its ability to cheaply distribute almost any kind of content either in-line or as an attachment, WhatsApp has become the platform of choice for virtual communities.

### 4   Auto ethnographic research method

This is a narrative (Plowright, 2011) auto ethnographic theory building study (Wall, 2016) that draws on the lived experience of the author. The only instrument of data collection was the smartphone in my pocket that meticulously records every message I send and receive, every website I visit, every physical location I visit, every e-mail

I receive, every phone call I make or take, as well as every podcast I listen to. The content I draw upon is all in the public domain, originating as it does from WhatsApp messages that make up the transactions of the multiple virtual communities to which I inadvertently belong. For ethical reasons I refer only to the type of message or group that I am analysing and not to any message or group in particular. By way of analysis I filter these constructs through the six principles of the rhizome (Deleuze and Guattari, 1987) to contribute to the unfolding stories of our interaction with virtual communities. In keeping with the practices of grounded research (Morse et al., 2016) I add snippets from relevant literature where applicable. I present this work in the hope that it will resonate with other stories out there and contribute to a research agenda for investigating the communities that we carry around with us in our pockets or our handbags. I now turn to the second research question:

> "How do the principles of the rhizome contribute to closeness in a virtual community?"

## 5    Discussion: a rhizonomy of WhatApp communities

As was pointed out earlier, even in high power-distance countries (Hofstede, 1984) social media tends to flatten hierarchies (Makvand and Fernández Alarcón, 2017). Rhizome theory (Deleuze and Guattari, 1987), which is based on flat structures is therefore an appropriate lens through which to view my reflections. The principles of the rhizome as described above, will form the basis for structuring this section under the headings of connectedness, heterogeneity, multiplicity, asignifying rupture, cartography and decalcomania.

### 5.1    Connectedness

WhatsApp (2020) allows up to 256 participants in a group, which means that by definition every WhatsApp user is connected to every other, and "a participant, who has more prior engagement with other participants, is more likely to respond to another participant in a later discussion" (Liang, 2018).

WhatsApp's ability to display hyperlinks to internet sites means that it also connects users to any other site in the world. The tendency of people to belong to more than one group means that in terms of the *six degrees of separation* theory (Milgram, 1967) every WhatsApp user is connected to every other. Moreover since WhatsApp is on the smart device of the user, it is seamlessly integrated with the camera, which by default automatically geo-tags every photograph. Thus every item that is photographed and added to WhatsApp, is automatically connected to all the users on that group. This feature is often used by neighbourhood groups to serve as a warning, such as a photograph of a pothole in the road, which alerts all neighbours in the group, as well as the neighbourhood maintenance crew, of the hazard. The high level of connectedness could lead to hyper connectivity with its related advantages and disadvantages (Fredette et al., 2012). Thus connectedness leads to a sense of closeness, but it may also make members feel that the others are too close. One of the contributing factors to hyper connectivity lies in the heterogeneity of needs that results in the same people belonging to any number of groups that have almost the same, but slightly different foci.

## 5.2   Heterogeneity

Two types of heterogeneity come into play in WhatsApp groups. Firstly there is the obvious differences in the participants. Even in extremely homogeneous groups, such as residents of the same apartment complex, huge differences can be identified immediately in terms of age, gender, marital status and even political affiliation. The other heterogeneity lies in the groups themselves: groups range from small to large; their purposes from specific to general; their lifetimes from very short to indefinite. To make sense of this heterogeneity, one useful classification is a four-quadrant orthography based on their focus and structure: group focus may range from social exchange on the one hand to information exchange on the other, while social structure may range from loose to high (Kozinets, 2002), resulting in four categories:

1  loosely structured groups primarily for social exchange would include sports club, alumni associations and social neighbourhood groups

2  diagonally opposite would be highly structured groups focused on information exchange, which would include corporate management groups where line managers would give and request information from their subordinates

3  loosely structured groups for information exchange may be neighbourhood security groups that inform one another and the security personnel of potential hazards

4  high social structure for social interaction would be family groups where the family hierarchy is still respected but the interaction is social rather than informative.

When a blurring of these boundaries occurs it may well happen that some members of the group may demonstrate asignifying rupture, as they form another group that includes some, but not all the members of the larger group. This new group may even invite other members and in so doing create its own new focus.

## 5.3   Asignifying rupture

The ease with which WhatsApp allows users to form groups means that additional groups form very quickly. A regular family chat group may well form a sub-group without mother, to plan her birthday party; a work group under an authoritarian boss may create a subversive sub-group without him or her. In keeping with rhizome theory (Deleuze and Guattari, 1987) such groups, although they may have been formed as a short-term solution may well develop into long-term communities in their own right.

## 5.4   Multiplicity

In the same way as one group may give rise to many discrete sub-groups one person belongs to a host of groups of different description, work groups, social groups, scientific groups, groups for the exchange of jokes and groups arranging social events. All these groups come together under the one WhatsApp application on the device of the user and as such the multiple becomes the unit. The individual user becomes entangled in a multiple of connected and disconnected groups, each following its own particular path,

and the user follows one and/or all of these paths simultaneously. The multiplicity extends beyond the WhatsApp group to physical groups. Often WhatsApp groups are used to extend contact groups, or sometimes to replace them. In extreme cases this multiplicity that could lead to fatigue, anxiety or depression (Dhir et al., 2018).

### 5.5   *Cartography*

Since users all walk their own paths the patterns created by the users are generative rather than supplantive. Users develop their own cartographies as they embark on the various pathways through their various real and virtual communities. These often intersecting maps of individuals and groups have become a rich source of research for analysts of social networks on both the technological (Fiadino et al., 2015) and emotional (Maíz-Arévalo, 2018) levels.

### 5.6   *Decalcomania*

As the overlapping networks develop, so patterns begin to appear. It would seem that many WhatsApp groups follow the typical curve of Gartner's hype cycle (Linden and Fenn, 2003). The technology trigger would be when the group is formed. There would be a flurry of introductions, sharing, supportive messaging and the co-creation of general goodwill, leading to the peak of inflated expectations where, as a result of groupthink (Janis, 1972) everybody believes in the goodness of the group and its members, practice self-censorship and shuns those who think otherwise. The group then descends into the trough of disillusionment as many members leave. At that stage the group begins to understand its purpose and moves up the slope of enlightenment to the plateau of productivity (Linden and Fenn, 2003). At the same time it is possible in many instances to identify Tuckman's (1965) stages of group development, forming, storming, norming and performing in many WhatsApp groups. In this way, in true decalcomanic form all groups are identical and no two groups are the same.

## 6   Conclusions – physical distance and social closeness

In the conclusion we bring the two research questions together:

> "What are the characteristics of WhatsApp groups in terms of people, purpose, politics, and computer systems?"

> "How do the principles of the rhizome contribute to closeness in a virtual community?"

Table 1 shows how some of the rhizomatic characteristics of WhatsApp groups could be plotted against Preece's (2000) characteristics of virtual communities. This table is by no means exhaustive and is shown here only as an analysis tool. It could also be useful in an ethnographic study analysing a body of WhatsApp messages that may have been sent by a particular group over a particular period. In this particular instance the matrix is used to compare and contrast virtual and actual groups as a guide for speculating how WhatsApp groups may work in support of, in opposition to or instead of physical groups.

**Table 1** An analysis framework for the rhizomatic implications of virtual communities

| | People | Purpose | Politics | Computer systems |
|---|---|---|---|---|
| Connectedness | Digital connections are permanently on. Physical connections only occur when people deliberately come together. | Digital connections may have a purpose to replace physical contact altogether, or it may be used to call people together. | Different rules may apply to digital groups than do to physical groups, but power relationships still occur, and power can still be subverted. | Stability, ease of use and cost remain the drivers for digital communication, but the same applies to contact groups as people will not go to places that are unstable, hard to reach or expensive. |
| Heterogeneity | Because they are not geographically bound virtual communities can be much more heterogeneous than physical groups, but if they get too heterogeneous they are likely to split up. | Having the same purpose may reduce the heterogeneity in groups, both virtual and physical. Many virtual groups actually have the purpose of avoiding physical contact. | Rules are required to regulate the power struggles that come about in heterogeneous groups. In physical groups these rules have been established over millennia, while new rules need to be developed on the fly for virtual groups. | Virtual groups are increasingly becoming platform-independent and able to run over different technologies. Physical groups will always require the same constraints that are required for human habitation. |
| Multiplicity | People belong to many more virtual groups than physical groups. There is an increasing number of hybrid groups that are both physical and virtual. | Some virtual groups have a purpose of their own that requires no physical contact. Some virtual groups are in support of physical groups and some virtual groups have the purpose of replacing physical groups. | Multiple groups develop to support or disrupt multiple instances of power. WhatsApp groups, specifically, having been used successfully in arranging and suppressing violent protests. | The multiple operating systems on which WhatsApp runs means that a high level of interoperability needs to be designed into computer systems and high levels of standardisation is required. Physical groups rely upon the adaptability of the humans to their surroundings. |
| Asignifying rupture | It is easy for sub-groups to break off from the main group. In physical groups the same formation of sub groupings occurs, but it takes more organising to happen. | Sub groups break off from the main group either to pursue sub-objectives of the main group, or to oppose it. | Groups may easily break off from a main group to subvert powerful figures deemed bullies. Although physical groups also stand up against bullies it is not always possible since it is more difficult to do so undetected. | The technological ease with which groups can form, either by invitation or by a join link allows rapid group formation. |
| Cartography | Each group is composed of a unique group of people who can be mapped in various ways, and each person belongs to various groups that can be mapped. | Groups tend to have overlapping purposes that can be mapped. | Unique power relationships come into being that are either entrenched or disrupted by virtual group technology. These can be used in support of, or against physical political groupings. | The ubiquitous, cheap and powerful nature of WhatsApp groups has enabled it to flatten the peaks of the digital divide so that mapping of the technology is likely to show little difference in its use by rich or poor. |
| Decalcomania | The patterns of group formation in WhatsApp is likely to be the same as in physical groups, although it is likely to take place more quickly. | Three distinct purposes of WhatsApp groups seem to develop. Groups to arrange physical contact, groups to extend physical contact and groups to avoid physical contact. | Virtual groups are as susceptible to internal political struggles as are physical groups, although the power struggles are likely to occur much faster in virtual groups because of their always-on nature. | Patterns of technology push and demand pull are likely to drive further innovation in the field. Techniques for reducing information overload and managing hyper connectivity need to be developed. |

In a world during and after covid-19 where physical distance between people has increased dramatically one hears many stories of the emotional distance between them actually decreasing. This may or may not be a good thing. On the one hand the emotional closeness that could be created by WhatsApp groups can be a source of empathy. On the other hand the same emotional closeness, coupled with the hyper connectivity associated by an explosion of WhatsApp groups could lead to anxiety and depression. What is left for researchers to do is to continue uncovering the endlessly repeated patterns that occur in the multiple stories of social closeness over physical distance.

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