



SOCIAL INTERACTION IN DIGITAL SOCIETY: CHANGES IN ONLINE COMMUNICATION PATTERNS AND DYNAMICS OF VIRTUAL COMMUNITIES

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Abstract

This qualitative literature review examines how digital society transforms social interaction and community formation. The study reveals that online communication decouples time and space, shifting interactions from non-verbal cues to text-based codes. While digital platforms expand social networks, they often diminish relationship depth and create psychological pressure through curated self-presentation. The research highlights a duality in social quality: virtual communities foster strong bonds based on shared interests and global solidarity, yet platform algorithms risk reinforcing polarization through echo chambers. Rather than replacing face-to-face contact, digital media creates a hybrid communication ecosystem that enriches yet complicates social life. The findings suggest that navigating this landscape requires sophisticated digital literacy. Theoretical contributions emphasize new relational forms, while practical implications stress the need for thoughtful platform design and a balanced approach to online and offline engagement to maintain social cohesion in a fragmented digital era.

Keywords: social interaction, online communication, virtual community, relationship quality, social cohesion, fragmentation, digital society.

Introduction

The development of digital communication technology has fundamentally changed the way humans interact with one another. In a relatively short period, the internet and mobile devices have become inseparable parts of daily life, shifting interaction patterns that for centuries were based on physical presence and face-to-face meetings. Today, an individual can connect with another person on the other side of the world in seconds, sharing thoughts, feelings, and experiences without being hindered by geographical distance. This demonstrates the magnitude of technology's influence in shaping human behavior in the current modern era (Darmawan, 2013). This ease of access has created a new social landscape where the boundary between public and private space becomes blurred, and the distinction between those who are present and those who are absent becomes difficult to discern. In daily experience, people wake up and immediately reach for their phones to check messages, opening social media before truly opening their eyes, and ending the day with the same activity. This phenomenon reflects how popular culture and digital content are gradually beginning to shape the values and attitudes of the younger generation in their daily lives (Kurniawan & Khayru, 2021). Digital presence has become a second layer of reality, one that sometimes feels more real and more urgent than the physical interactions occurring around it (Aagaard, 2016). This shift does not only change how people communicate but also changes what it means to be a social human, how connectedness is felt, and how identity is constructed in relation to others.

One of the most fundamental changes brought about by online communication is the transformation in the quality and quantity of social relationships held by individuals (Mishra, 2011). On one hand, digital technology allows someone to maintain relationships with people separated by distance, which previously might have ended due to communication limitations. One can remain interactive with childhood friends now living in another city, family members who have migrated abroad, or colleagues working in different offices. This condition greatly assists various layers of society, from office workers to informal sector workers, in their efforts to maintain a balance between work affairs and private life (Eddine & Darmawan, 2021). An individual's social network

can expand dramatically, encompassing hundreds or even thousands of people connected through various platforms. On the other hand, this expansion of networks is often accompanied by a decrease in the depth of relationships. Interactions that take place through a screen tend to be shorter, shallower, and more easily ignored compared to face-to-face interactions. People may have a thousand friends on social media yet feel lonely because not a single one truly knows them in their entirety. The experience of having many relationships but few meaningful connections has become a hallmark of social life in the digital age, creating a paradox where abundant connectedness actually coexists with feelings of isolation.

Online communication has also changed how individuals present themselves and build identities in social interactions (Diniz & Moreira, 2015). Unlike face-to-face interaction, which presents the self as a whole with all its physical limitations, voice, and body language, online communication allows someone to curate the self-image they wish to display. Every post, every comment, and every photo shared is a result of deliberate selection, displaying the best version of the self that they want to communicate to the public. Beyond personal branding, this technology is also frequently utilized to increase reach and appeal in the business world or other professional matters (Arifin et al., 2021). This curation process gives individuals unprecedented control over how others perceive them, yet it also creates pressure to constantly maintain the image they have built. The experience of being on social media is often colored by anxiety over appearance and the worry that an imperfect post will reduce one's self-worth in the eyes of others. Furthermore, the ability to display different identities on different platforms allows individuals to explore various aspects of themselves, but it also raises questions about which constitutes the authentic self. Amidst this global flow of information, the use of literary works and cultural symbols remains important to ensure we do not lose our national identity (Kurniawan et al., 2021). In a world where identity can be assembled and changed easily, questions about who a person truly is become increasingly complex and difficult to answer.

The formation of virtual communities has become one of the most significant developments in the digital social interaction landscape (Werani, 2019). People who have never met before, living in different

parts of the world, can unite in online communities based on shared interests, common experiences, or recognized identities. Communities of fans of specific music, sports enthusiasts, sufferers of rare diseases, or survivors of similar violence can find one another and build very strong bonds through online interaction. In these communities, individuals find a sense of belonging that they might not get in the geographical communities where they live. They can share experiences, support one another, and build solidarity that transcends physical boundaries. This situation demands that we have strong mental readiness in facing the changing social order of the future (Darmawan et al., 2021). The experience of being part of a virtual community is often felt as very real and meaningful, even when the members have never met in person. However, virtual communities also have unique vulnerabilities. Bonds built on digital platforms can easily break when the platform changes its policies or when members choose to leave. The support received in a virtual community may not be sufficient to replace physical presence when real support is needed. Virtual communities can also become echo chambers that reinforce extreme views and isolate members from different perspectives.

Changes in social interaction patterns due to online communication do not occur uniformly across all social groups. Generations that grew up with digital technology have very different experiences compared to generations that were introduced to technology in adulthood. For digital natives, online interaction is not an addition to social life but an integral, inseparable part of it. They learn about the world, build friendships, and navigate social relationships through screens from an early age. Therefore, it is very important for every individual to have good digital skills to obtain equal opportunities in education and work (Arifin & Darmawan, 2021). Their experience of what it means to be a friend, what it means to communicate, and how to read social cues is heavily influenced by the digital medium. Conversely, older generations often experience this shift as disorientation, feeling that relationships once considered important are now displaced by interactions that feel artificial. They may miss long conversations on the porch that are now replaced by short messages, or family gatherings where everyone is occupied with their own phones. This difference in

intergenerational experience creates a gap in understanding that is not easily bridged, where each party feels their way of interacting is the most natural and the other is a deviation (Twenge, 2019). This dynamic shows that the changes brought by online communication are not only technological but also cultural and generational, shaping different ways of life between age groups.

In a digital society marked by an abundance of connections but a potential lack of depth, a fundamental question arises regarding how the quality of social relationships can be maintained when the most frequent interactions occur through a screen. Online communication offers extraordinary efficiency and convenience, but this efficiency often comes at the price of reducing the richness of communication that can only exist in face-to-face interaction. Body language, voice intonation, touch, and full physical presence cannot be transmitted through text or even video calls. Consequently, the intended meaning is often lost or misunderstood, while the nuances of emotion that can only be captured through physical presence become unreachable (Vanden Abeele et al., 2016). It is crucial for us to continue honing social skills and technical abilities to remain ready for the challenges of an increasingly digital workplace (Mendonca et al., 2021). When most social interactions shift to the digital realm, individuals lose the opportunity to develop and practice social skills that require physical presence. Generations growing up with online communication may have an excellent ability to write effective short messages, yet feel awkward and uncomfortable in face-to-face conversations that require reading non-verbal cues in real-time. Furthermore, when the most important relationships in a person's life mostly take place in the digital sphere, questions arise about what is lost from the experience of being a social human. Can relationships that only exist through a screen fulfill basic human needs for connection, intimacy, and a sense of belonging? Or are there fundamental dimensions of social relationships that can only be met through physical presence, which cannot be replaced by even the most advanced technology?

Another no less complex issue relates to the formation of virtual communities amidst increasingly widespread social fragmentation. On one hand, virtual communities offer the possibility for individuals to find people who share the same interests, experiences, or identities, which

they might not find in their local geographical communities. The ability to connect with people who truly understand their experiences provides invaluable emotional support, especially for those belonging to minority groups or those with stigmatized experiences (Bakker & de Vreese, 2011). On the other hand, the ease of forming communities based on similarity also has the potential to strengthen social polarization and segregation. When people only interact with those who share the same views, they lose the opportunity to be exposed to different perspectives, which are vital for developing tolerance and cross-difference understanding. Digital platform algorithms designed to maximize user engagement tend to display content that aligns with existing preferences, creating echo chambers that reinforce held beliefs and close off the possibility of encountering different views. In such an environment, virtual communities can transform from places of support into places for the reinforcement of extremism, where differences are no longer tolerated and those who disagree are considered enemies. Therefore, we need to learn how to adapt to technology without forgetting how to communicate well socially (Mendonca et al., 2021). The problem lies in distinguishing between virtual communities that provide healthy support and those that instead reinforce isolation and polarization, as well as how to design interventions that allow the positive potential of virtual communities to be maximized while minimizing their risks.

The study of social interaction in digital society is becoming increasingly urgent as digital technology penetrates deeper into every aspect of life. Data on internet and social media usage show that modern humans spend a vast amount of time in the digital realm, often exceeding the time spent in face-to-face interaction with family and friends (Kushlev et al., 2019). This shift is not a temporary trend that will pass, but a fundamental change in the way humans live and relate to one another that is likely to persist and deepen. Without an adequate understanding of how online communication changes interaction patterns, relationship quality, and community formation, we will lose the ability to respond wisely to the ongoing changes. We may not realize what is being lost from our social lives until the impact has become too deep, or conversely, we may miss new opportunities to build more meaningful relationships offered by digital technology. In short, a good understanding of

technology and its impact will help us remain wise in navigating life in the future (Arifin & Darmawan, 2021). Systematic study of this topic is essential to provide a clear map of the changes occurring, so that individuals and society can make conscious decisions about how they want to use technology, rather than simply being carried away by a tide of change they do not understand.

The importance of this analysis is also driven by growing concerns about the impact of online communication on mental health and social well-being. Various studies show a correlation between intense social media use and increased levels of anxiety, depression, and loneliness, especially among the younger generation. However, the causal relationship between the two is still not fully understood (Kross et al., 2013). Does social media use cause mental health problems, or are people with mental health issues more prone to excessive social media use? Is this negative impact universal or does it only occur in specific groups with certain characteristics? Are there ways to use digital technology that are actually beneficial for mental health? These questions require a careful review of existing literature to separate robust findings from excessive speculation. Amidst narratives that are often alarmist regarding the dangers of social media, a balanced and evidence-based study becomes very important to avoid unproductive moral panic, while not ignoring the real risks that do exist. A better understanding of the relationship between online interaction and psychological well-being will be highly useful for the development of healthy technology use guidelines, both at the individual and public policy levels.

This research aims to systematically analyze changes in social interaction patterns caused by online communication, focusing on two main dimensions: the transformation of social relationship quality and the dynamics of virtual community formation and its implications for social cohesion. The theoretical contribution of this research is to formulate a conceptual framework mapping how the digital medium alters the fundamental characteristics of human interaction, including depth, intensity, and the nature of attachment formed, as well as how communities formed in digital spaces differ from geographically-based communities in terms of solidarity, collective identity, and resilience. Practically, the results of this research are expected to provide a better

understanding for educators, parents, mental health practitioners, and policymakers on how to navigate social life in the digital age in a healthier and more meaningful way, and how the positive potential of virtual communities can be maximized while minimizing the risks of polarization and social isolation that may accompany it.

Method

This research employs a library research design with a qualitative approach aimed at exploring and synthesizing various theoretical perspectives and empirical findings regarding social interaction in digital society. The selection of this method is based on the characteristics of the topic, which requires an in-depth investigation of concepts that have developed within the sociology of communication, digital media studies, and social psychology. According to Creswell (2009), qualitative research in the form of a literature study allows the researcher to understand social phenomena through the interpretation of existing texts without having to conduct primary data collection. In this study, the primary data sources consist of academic books, peer-reviewed journal articles, and research reports discussing online communication, social media, virtual interaction, and digital communities. The data collection process was carried out through systematic searches of academic databases using combinations of relevant keywords. Each identified source was then evaluated for credibility by assessing the reputation of the publisher, the methodology used, and the consistency of arguments with findings from other reputable sources. This approach enables the researcher to build a comprehensive understanding of how digital communication transforms the landscape of social interaction.

Data analysis in this study utilizes the thematic analysis approach developed by Boyatzis (1998), which allows the researcher to identify recurring patterns within the literature and organize them into meaningful themes. The analysis process began with open coding of all collected bibliographic materials, followed by grouping codes with similar meanings into more abstract categories, and concluding with the formulation of main themes that answer the research questions. This approach allows the researcher to do more than just summarize what other authors have written, but also to perform a critical synthesis that

generates new insights into the dynamics of social interaction in the digital age. To maintain the validity of the findings, this research applies a source triangulation strategy by comparing findings from literature with diverse disciplinary backgrounds, theoretical traditions, and geographical contexts. According to Denzin and Lincoln (2005), triangulation in qualitative research serves to increase the credibility of findings by considering various perspectives that may differ. Furthermore, the researcher conducted a search for literature containing different or conflicting perspectives to ensure that the resulting conclusions are not biased due to an overly narrow selection of sources. The entire analysis process was systematically documented so that every step can be traced back by other researchers wishing to conduct verification or replication.

Result and Discussion

Changes in Interaction Patterns and the Quality of Social Relationships in Online Communication

Online communication has fundamentally changed the patterns of interaction between individuals by transforming the temporal and spatial characteristics of social relations. In face-to-face interaction, time and place converge simultaneously; individuals must be present in the same location at the same time to communicate. Online communication breaks this bond, allowing interaction to occur asynchronously where messages can be sent and received at different times, and enabling connectivity across geographical distances that were previously impossible. This shift brings very significant consequences to the rhythm and intensity of social relations. One can communicate with friends in various time zones without having to adjust schedules, can respond to messages when time permits, and can maintain relationships with people separated by thousands of kilometers. The experience of having relationships that are continuous yet asynchronous creates a sense of constant presence, where the boundary between interaction time and individual time becomes blurred. On one hand, this flexibility allows for the maintenance of broader relationships. On the other hand, the demand to always be available and always respond creates a psychological burden that is not light. Individuals feel they must always be connected, that not responding to a message quickly is considered impoliteness or rejection, so the space

for oneself increasingly narrows (Baym, 2010; Valkenburg & Peter, 2011). These continuous yet fragmented interaction patterns produce a form of connectedness that is qualitatively different from face-to-face interactions which have a clear beginning and end.

One of the most significant changes in interaction patterns is the shift from communication rich in non-verbal cues toward communication that relies on text and symbols. In face-to-face interaction, meaning is conveyed not only through words but also through facial expressions, voice intonation, body gestures, and eye contact (Lüders, 2009). This richness of cues allows for more accurate interpretation of meaning, the capture of emotional nuances, and faster trust-building. Online communication, especially text-based ones, eliminates most of these cues, leaving words that are vulnerable to misinterpretation. To overcome these limitations, users have developed various compensation strategies: the use of emoticons and stickers to convey emotion, the use of capital letters for emphasis, or the use of abbreviations and distinctive language to create closeness. The experience of using these strategies shows that online communication is not merely impoverished face-to-face communication, but has developed unique new codes and norms (Derks et al., 2008; Walther, 2011). Generations growing up with online communication master these codes fluently, able to read meaning from the choice of emoticons or the pause in responding to a message in a way that is no less complex than reading a facial expression. However, these codes are not universal; misunderstandings often occur when people from different generations or different cultural backgrounds use different codes. The ability to navigate these complexities of digital communication becomes an important new social skill, yet it still does not fully replace the richness of face-to-face interaction.

The quality of social relationships in online communication undergoes a complex transformation, where depth is often sacrificed for wider reach. In face-to-face interaction, meaningful relationships usually develop through repeated meetings that last for a sufficiently long duration, allowing for gradual self-disclosure and deep trust-building. Online communication allows someone to have a very wide network, encompassing hundreds or even thousands of connections, but most of

these connections are shallow. The experience of having many friends on social media but feeling that one does not truly know any of them becomes a commonly experienced paradox (Turkle, 2011; Hampton et al., 2011). Relationships built through online communication tend to be more vulnerable to termination due to the low cost of starting and ending a relationship. Someone can easily add a new friend and just as easily delete or ignore someone without significant social consequences. This fluid nature gives individuals the freedom to explore various relationships without binding commitments, but also reduces the incentive to overcome conflicts or difficulties in a relationship. When a relationship is faced with obstacles, it is easier to avoid than to resolve, because there is no requirement to meet and face each other directly. Consequently, many potentially meaningful relationships end before they have a chance to develop, due to a lack of the commitment necessary to weather difficult times.

Online communication also changes how individuals present themselves and manage impressions in social interactions. In face-to-face interaction, self-presentation occurs in real-time, with little opportunity to edit or rearrange what is displayed. Online communication, especially asynchronous ones, provides the opportunity to curate self-presentation with great care. Someone can think about the words to be used, choose the most flattering photo, delete posts that do not receive a positive response, and build a desired self-image through the deliberate selection of what is displayed (Ellison et al., 2006; Schau & Gilly, 2003). The experience of managing self-presentation in the digital space provides unprecedented control over how others perceive us, but also creates pressure to constantly maintain the image that has been built. The gap between the presented self and the actual self can become a significant source of anxiety, as individuals feel trapped in the persona they have created. Furthermore, the ability to display different identities on different platforms allows for the exploration of various aspects of the self that might not be expressed in a single social context. Someone can be a political activist on one platform, a music fan on another, and a serious professional on yet another. This flexibility opens possibilities for the development of a richer identity, but also raises questions about the integration of these various aspects into a coherent identity.

The quality of social relationships in online communication is heavily influenced by the public or private nature of the ongoing interaction (Schiffrin & Falkenstern, 2012). In face-to-face communication, most interactions are private, known only to the parties directly involved. Online communication, especially on social media, is often public or semi-public, where interactions between two people can be seen by many others. This public nature fundamentally changes relationship dynamics. Something said in a private conversation in the real world, if said on social media, can become a public spectacle with much wider consequences. The experience of interacting in a digital public space creates an awareness of an ever-present audience, which influences what is considered appropriate to say and how to say it (Marwick & boyd, 2011). Intimacy that is usually for mutual consumption only becomes a commodity consumed by the public, changing the meaning of intimacy itself. On the other hand, the ability to have private conversations through direct messages or encrypted messaging applications allows for new forms of intimacy not previously available. Two people can share their deepest thoughts and feelings through text messages that only the two of them can read, with an intensity that might not be reached in face-to-face conversation due to barriers of shyness or time constraints (Jiang et al., 2011). The dualism between watched public interaction and highly personal private interaction creates a more diverse spectrum of relationship experiences compared to a world where most interactions are private.

Online communication also changes interaction patterns within groups and communities. In face-to-face interaction, groups have clear boundaries: who is present and who is not, who is speaking and who is listening. Online communication allows for more flexible forms of participation. Someone can be a silent observer in a discussion group for months without ever contributing, yet still feel like part of the group. This phenomenon of "lurking" creates a new form of membership that has no equivalent in face-to-face interaction (Sun et al., 2014). The experience of being lurkers allows individuals to learn and absorb group norms without the pressure to participate actively, which can be a safe entry point for those who are shy or new to a community. However, the presence of lurkers also creates a complex dynamic, where active

contributors feel they are speaking in front of an unknown audience, which can affect what they choose to share. On the other hand, online communication allows for more efficient group coordination, where information can be disseminated quickly, decisions can be made through polling, and tasks can be distributed without the need for physical meetings (Wellman et al., 2001). Groups scattered across various locations can function as a cohesive unit, transcending geographical limitations that were previously the main obstacle to collective work. The experience of being part of a geographically distributed yet digitally integrated group is becoming increasingly common, changing the understanding of what it means to be a member of a community.

One of the most controversial changes in the quality of social relationships is the impact of online communication on empathy and the ability to read emotional cues. In face-to-face interaction, someone automatically responds to others' emotional expressions through mirror neuron mechanisms, which allow for an intuitive understanding of what others are feeling (Scott et al., 2006). Online communication, especially text-based ones, does not provide this sensory feedback, so understanding others' emotional states becomes more cognitive and less intuitive. The experience of interacting through text is often colored by emotional misunderstandings, where the intended tone of voice is not read correctly, or humor is interpreted as seriousness (Carrier et al., 2015). To overcome this, users develop new abilities to read meaning from word choice, response time, and the use of certain symbols. However, these abilities require greater cognitive effort compared to intuitively reading facial expressions, which can lead to communication fatigue. Furthermore, some studies show that excessive exposure to online communication can reduce sensitivity to non-verbal cues in face-to-face interaction, as the brain becomes less trained to process complex sensory information (Vorderer et al., 2016). Generations growing up with online communication may experience greater difficulty in reading facial expressions and body language, which can impact their ability to build intimate and empathetic relationships. Yet, on the other hand, online communication also opens possibilities for individuals with difficulties in face-to-face interaction, such as those with social anxiety disorders or autism, to build relationships in a way that is more comfortable for them.

The quality of social relationships in online communication is also heavily influenced by the algorithms that govern digital platforms. Social media algorithms are designed to maximize user engagement, often by displaying content most likely to trigger a strong emotional response, whether positive or negative. As a result, interactions occurring on these platforms tend to be dominated by provocative, controversial, or sensational content. The experience of using social media is often colored by polarization and conflict, because algorithms reward divisive content more than consensus-building content (Bakshy et al., 2015; Pariser, 2011). Furthermore, algorithms create echo chambers where users are primarily exposed to views that align with their preferences, reinforcing existing beliefs and reducing exposure to different perspectives. In such environments, the social relationships formed tend to be homogeneous, where differences are not tolerated and conflict easily arises (Cinelli et al., 2021). The experience of being part of a highly homogeneous group can provide a sense of security and validation, but also reduces the ability to deal with differing opinions constructively. When individuals eventually have to interact with people of different views in the real world, they may not have the skills necessary to navigate those differences. Algorithms, therefore, are not neutral; they actively shape interaction patterns and relationship quality in ways that are often not realized by their users.

Online communication does not simply replace face-to-face interaction, but creates a more complex communication ecosystem where both forms of interaction complement and sometimes replace each other (Eddy, 2019). The individual experience in a digital society is one of moving between various modes of communication, each with its own characteristics and rules. Someone can interact with the same friend through text messages in the morning, a video call during the day, and a direct meeting at night, each contributing differently to the quality of the relationship. This hybrid pattern allows relationships to be maintained with an intensity and flexibility that would be impossible to achieve if relying on only one mode of communication (Nguyen et al., 2012; Hall, 2020). However, the ability to navigate these various communication modes fluently is not automatic; it requires continuous learning and adjustment. Those who are able to integrate online and offline

communication well can enjoy the benefits of both: the wide reach and flexibility of online communication, and the depth and richness of offline communication. Conversely, those who rely too heavily on one mode of communication may lose the benefits offered by the other. The question of how to achieve a healthy integration between online and offline communication becomes increasingly important as digital technology penetrates deeper into every aspect of life, and the answer is likely to be different for each individual depending on their needs, preferences, and social context.

Dynamics of Virtual Community Formation and Its Implications for Social Cohesion and Fragmentation

The formation of virtual communities begins with the ability of digital technology to bring together individuals who share common interests, experiences, or identities, unhindered by geographical boundaries. In the physical world, a person is limited to the communities existing within their residential environment; if they do not find others who share the same interests or experiences, they must accept isolation in that aspect. Virtual communities erase these boundaries, allowing a fan of rare music in a small town to connect with fellow enthusiasts worldwide, a survivor of a rare disease to find people who truly understand their experience, or a member of a minority group to find a safe space where their identity is accepted and celebrated (Kozinets, 2010; Rheingold, 2000). The experience of finding a community that truly understands oneself is often described as a life-changing discovery, providing a sense of belonging never felt before. The process of searching for and discovering these communities often begins with keyword searches, joining groups, and observing the ongoing dynamics before an individual finally decides to participate actively. These stages allow individuals to enter a community gradually, reducing the risks that might arise from joining an unfamiliar group. The ease of finding and joining a community that fits these needs is one of the most significant contributions of digital technology to human social life.

Virtual communities build social bonds through mechanisms different from those of geographically-based communities. In physical communities, bonds are often formed due to proximity and necessity;

people become neighbors not by choice, but by the coincidence of residence. Virtual communities, conversely, are built upon conscious choice and voluntarism. Every member chooses to join because of something truly important to them, so the commitment given tends to be stronger and more authentic. The experience of being part of a virtual community is often characterized by high emotional intensity, as members share deeply personal and meaningful things (Blanchard, 2008; Ren et al., 2007). In support communities for trauma survivors, for example, members share their most painful experiences and receive support from people who truly understand. The bonds formed through this process of vulnerable sharing can become very strong, surpassing many relationships in physical communities that are more superficial. However, bonds formed in virtual spaces also have unique vulnerabilities. Without physical presence, and without interaction involving all the senses, these bonds can feel less real or be more easily broken. Someone can disappear from a virtual community without a trace, leaving no opportunity for other members to find out what happened or express concern. The absence of mechanisms to maintain bonds when one party chooses to leave gives virtual communities a high level of fluidity, where people come and go easily.

The structure and hierarchy within virtual communities are formed through mechanisms different from physical communities (Resca & Tozzi, 2013). In physical communities, hierarchies are often based on factors such as age, wealth, or position within formal institutions. Virtual communities tend to be more meritocratic, where status is earned through contribution, knowledge, and consistency. The most respected members are those who are most active in helping others, those most knowledgeable about the topic of the community's focus, or those most consistent in upholding community values (Lampel & Bhalla, 2007; Joyce & Kraut, 2006). The experience of gaining recognition in a virtual community can be a source of very meaningful self-esteem, especially for those who might not receive similar recognition in real life. However, this meritocratic structure can also create new, rigid hierarchies. Those who have more time to contribute, who have access to better resources, or who possess better communication skills will dominate the discussion space. Meanwhile, those less fortunate in these regards may remain

marginal members, even if they subjectively feel part of the community. The dynamics of inclusion and exclusion in virtual communities are often invisible and unconscious, yet they have a significant impact on who feels they belong and who feels marginalized.

Virtual communities have the capacity to provide very effective social support, especially in situations where support from the physical community is unavailable or inadequate. For individuals facing rare or stigmatized conditions, physical communities often lack people with similar experiences or may even respond unhelpfully by blaming or trivializing. Virtual communities provide a space where individuals can share experiences without fear of judgment, obtain accurate information from those who have gone through similar things, and feel that they are not alone (Bargh & McKenna, 2004; Wright, 2000). The experience of receiving support from a virtual community is often described as a lifesaver, providing the strength to keep living when the real world feels very heavy. This support is not only emotional but also practical, in the form of information about treatments, tips for overcoming daily difficulties, or even financial assistance in emergencies. Virtual communities also allow support to take place continuously, unrestricted by time and place. Someone can send a message requesting support at midnight when feeling most down and receive responses from other members who may be in different time zones. This constant availability of support is an advantage not held by physical communities, where support is only available at specific times and places.

However, virtual communities also have the potential to strengthen social polarization and fragmentation. The ease of finding a community that fits one's existing views can trap individuals in echo chambers where they are only exposed to perspectives that reinforce their beliefs, without ever encountering different views (Graziani & Petrini, 2018). In communities that are ideologically highly homogeneous, even small disagreements can trigger conflict, as there is no diversity to train members to tolerate differences (Bail et al., 2018; Colleoni et al., 2014). The experience of being part of such a homogeneous community can provide a strong sense of security and validation, but also reduces the ability to empathize with those of different views. Members of such communities tend to see the world in a black-and-white dichotomy,

where their group is the right side and other groups are the wrong side. The polarization reinforced by virtual communities impacts not only the internal dynamics of the community but also society at large. When people with different views live in separate digital spaces and never interact, the gap between them widens, and the conflicts that emerge become harder to resolve. Virtual communities that should be spaces for finding connection can turn into fortresses that separate and divide.

Digital platform algorithms play a very significant role in shaping virtual community dynamics, often in ways realized by their members. Algorithms are designed to maximize user engagement, which is often achieved by displaying the most provocative and emotional content. Consequently, in virtual communities, the content receiving the most responses is the most extreme, rather than the most balanced or constructive (Tufekci, 2018). Members conveying moderate views may feel unheard or ignored, while those conveying extreme views gain attention and recognition. The experience of being in an algorithm-driven community is often marked by the escalation of polarization, where moderate positions are increasingly sidelined and extreme positions become increasingly dominant. Algorithms also tend to recommend content and communities similar to what the user has already consumed, thus further reinforcing echo chambers. Someone joining one community might be continuously recommended other similar communities without ever being given the chance to see a different perspective. Thus, algorithms are not neutral; they actively shape the virtual community landscape in ways that tend to reinforce fragmentation and polarization, even without malicious intent from the developers.

Virtual communities built around marginalized identities have unique and complex dynamics (Barberá, 2020). For ethnic, religious, sexual orientation, or other identity minorities, virtual communities often become the only space where they can be themselves without needing to hide or defend their identity. The experience of finding a community where an identity that previously had to be hidden is instead celebrated is often described as liberating, providing the strength to face discrimination in real life (Gray, 2009; Hanckel & Morris, 2014). These communities also serve as spaces to develop counter-discourses against dominant narratives that often demean or ignore them. Through

discussion, content production, and collective organization, virtual communities can become the basis for social movements fighting for recognition and justice. However, identity communities also face unique challenges. Because the identity forming the basis of the community is often a very personal and vulnerable aspect, internal conflicts can feel very painful and can split the community. Additionally, identity communities are vulnerable to infiltration and attacks from hostile outside groups, which can threaten members' safety. The experience of being part of an identity community in the digital space is often marked by tension between the need to open up and the need to protect oneself, between the desire to attract new members and the need to maintain the safety of the space that has been built.

Virtual communities have also changed the way social movements and collective actions are organized. Before the digital era, mass mobilization required physical meetings, flyers, and hierarchical organizational structures. Virtual communities allow for faster, broader, and more decentralized coordination. A movement can start from a single viral post, spread to various virtual communities, and result in physical mobilization within days (Bennett & Segerberg, 2012; Enjolras et al., 2013). The experience of being part of a movement born from virtual communities often provides a feeling of being part of something larger than oneself, transcending geographical boundaries and other identities (Möller, 2021). Virtual communities also allow for more diverse forms of participation, where someone can contribute according to their ability and comfort: some create content, some spread information, some coordinate actions, and some provide financial support. This flexibility allows movements to utilize broader and more diverse resources. However, movements born from virtual communities also have vulnerabilities. The lack of a clear hierarchical structure can lead to confusion in decision-making and difficulty in maintaining a consistent direction. Rapid mobilization through digital media can also be easily co-opted or disinformated by hostile actors. The balance between the flexibility offered by virtual communities and the stability required for long-term movements remains a persistent challenge.

Virtual communities also create new forms of cross-border solidarity that were previously impossible. Through virtual communities,

someone in Indonesia can stand in solidarity with the struggle of farmers in Latin America, or someone in Europe can support environmental movements in Southeast Asia. This cross-border solidarity is built not on geographical proximity or primordial ties, but on shared values and concern for the same issues (Lim, 2012; Tarrow, 2005). The experience of being part of this global solidarity provides a broader perspective on the problems facing humanity, as well as a feeling that we are part of an interconnected global community. Virtual communities also allow the exchange of knowledge and best practices across countries, so that local movements can learn from the experiences of movements elsewhere. However, cross-border solidarity also has challenges. Cultural, linguistic, and local context differences can lead to misunderstandings and tension. Solidarity built in virtual spaces can also be superficial, where people feel they have contributed merely by pressing a like or share button, without engaging in the actual struggle. This phenomenon of "slacktivism" is a common criticism of digital activism, where easy and risk-free support replaces genuine engagement that requires real sacrifice.

Virtual communities cannot be understood as a replacement for physical communities, but as a new layer in the human social ecosystem that enriches and complicates social life. Individuals in digital society are members of various communities simultaneously: place-based physical communities, profession-based professional communities, interest-based virtual communities, and so on (Rainie & Wellman, 2012; Wang et al., 2018). The experience of being a member of various communities provides a more diverse and flexible source of identity, allowing individuals to express different aspects of themselves in different contexts. However, managing these various affiliations also requires significant energy and attention. Conflict between the values held by different communities can cause psychological pressure, while the demand to be involved in various communities can lead to exhaustion. The ability to navigate this complex landscape of communities is becoming an important new social skill in the digital age. The question of how to build social cohesion amidst increasing community fragmentation becomes a major challenge for contemporary society. Is it possible to build a sense of togetherness that transcends various fragmented community affiliations? Can virtual communities become

bridges connecting different groups, or will they instead become walls that separate them? The answers to these questions will greatly determine the future of social cohesion in the digital era.

Conclusion

This research demonstrates that online communication has fundamentally changed the patterns of social interaction and community formation in digital society. Interaction patterns have transformed through the severance of ties between time and place, a shift from communication rich in non-verbal cues toward text-based communication with new codes, and the expansion of social networks that is often accompanied by a decrease in the depth of relationships. Self-presentation in the digital space allows for careful image curation but creates psychological pressure to maintain the persona that has been constructed. The quality of social relationships has become more complex with the dualism between watched public interactions and highly personal private interactions, as well as the emergence of new forms of participation such as lurking, which has no equivalent in face-to-face interaction. Meanwhile, the formation of virtual communities enables individuals to find connectivity based on shared interests and identities that transcend geographical boundaries, with bonds built on conscious choice and high emotional intensity. However, virtual communities also have the potential to strengthen polarization through echo chamber mechanisms exacerbated by digital platform algorithms. Identity communities for marginalized groups provide safe spaces while simultaneously serving as a basis for social movements, while the cross-border solidarity opened through virtual communities presents its own opportunities and challenges. Ultimately, online communication does not simply replace face-to-face interaction, but rather creates a hybrid communication ecosystem that enriches yet complicates social life, demanding complex navigation skills from individuals in the digital era.

It is suggested that cross-cultural research is needed to understand how different social and cultural contexts influence the dynamics of online interaction and virtual community formation, given that much of the existing literature is dominated by Western perspectives. For educators, it is recommended to integrate digital communication

education into the curriculum, which teaches not only technical skills but also the ability to read digital cues, manage self-presentation healthily, and navigate conflicts in digital spaces. Schools need to be places where children learn not only about the dangers of the digital world but also about how to use it meaningfully to build positive relationships. For parents, it is suggested to be actively involved in children's digital lives, not with an approach that forbids or restricts rigidly, but by becoming discussion partners who help children reflect on their digital experiences. Parents need to understand that the digital world is a real part of children's lives, and wise guidance is more effective than repressive supervision. For digital platform developers, it is suggested to design algorithms that do not only maximize user engagement but also consider their impact on social cohesion and psychological well-being. Transparency regarding how algorithms work and providing users with greater control over what they see could be initial steps toward a healthier digital ecosystem. For the general public, it is suggested to develop a critical awareness of digital technology use, including the ability to recognize when social media use begins to negatively impact well-being and the courage to take a break or change usage patterns. Building a balance between online and offline life, as well as maintaining meaningful relationships in both realms, becomes an essential skill that needs to be continuously developed in an era where the boundaries between the two are increasingly blurred.

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